

2016

The Kindergarten Program



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PREFACE

This document supersedes *The Full-Day Early Learning–Kindergarten Program (Draft Version, 2010–11)*. Beginning in September 2016, all Kindergarten programs will be based on the expectations and pedagogical approaches outlined in this document.

ELEMENTARY SCHOOLS FOR THE TWENTY-FIRST CENTURY

Ontario elementary schools strive to support high-quality learning while giving every child the opportunity to learn in the way that is best suited to the child's individual strengths and needs. The Kindergarten program is designed to help every child reach his or her full potential through a program of learning that is coherent, relevant, and age appropriate. It recognizes that, today and in the future, children need to be critically literate in order to synthesize information, make informed decisions, communicate effectively, and thrive in an ever-changing global community. It is important for children to be connected to the curriculum, and to see themselves in *what* is taught, *how* it is taught, and how it *applies* to the world at large. The curriculum recognizes that the needs of learners are diverse and helps all learners develop the knowledge, skills, and perspectives they need to become informed, productive, caring, responsible, and active citizens in their own communities and in the world.

...

The introduction of a full day of learning for four- and five-year-olds in Ontario called for transformational changes in the pedagogical approaches used in Kindergarten, moving from a traditional pedagogy to one centred on the child and informed by evidence from research and practice about how young children learn. The insights of educators in the field, along with knowledge gained from national and international research on early learning, have informed the development of the present document.

BACKGROUND

The Ontario government introduced full-day Kindergarten – a two-year program for four- and five-year-olds – as part of its initiative to create a cohesive, coordinated system for early years programs and services across the province. Milestones in the creation of that system include the following:

- In 2007, the government published *Early Learning for Every Child Today: A Framework for Ontario Early Childhood Settings*, commonly referred to as ELECT, which set out six principles to guide practice in early years settings:
 1. Positive experiences in early childhood set the foundation for lifelong learning, behaviour, health, and well-being.
 2. Partnerships with families and communities are essential.
 3. Respect for diversity, equity, and inclusion is vital.
 4. An intentional, planned program supports learning.
 5. Play and inquiry are learning approaches that capitalize on children's natural curiosity and exuberance.
 6. Knowledgeable, responsive, and reflective educators are essential.

ELECT is recognized as a foundational document in the early years sector. It provided a shared language and common understanding of children's learning and development for early years professionals as they work together in various early childhood settings. The principles of ELECT informed provincial child care policy as well as pan-Canadian early learning initiatives such as the Statement on Play of the Council of Ministers of Education, Canada. ELECT principles were embedded in the innovative Kindergarten program outlined in *The Full-Day Early Learning–Kindergarten Program (Draft Version, 2010–11)*.

- The *Ontario Early Years Policy Framework*, released in 2013 and also based on ELECT, set the stage for the creation of the new early years system, providing a vision to ensure that children, from birth to age six, would have the best possible start in life. The policy framework guides Ontario’s approach to the development and delivery of early years programs and services for children and families.
- *How Does Learning Happen? Ontario’s Pedagogy for the Early Years*, released in 2014, built on this policy framework. It sets out a fundamental understanding of children, families, and educators that is shared by educators across child care and education settings, and a pedagogical framework that supports children’s transition from child care to Kindergarten and the elementary grades.
- The present document – *The Kindergarten Program* (2016) – sets out principles, expectations for learning, and pedagogical approaches that are developmentally appropriate for four- and five-year-old children and that align with and extend the approaches outlined in *How Does Learning Happen?*

SUPPORTING CHILDREN’S WELL-BEING AND ABILITY TO LEARN

Promoting the healthy development of all children and students, as well as enabling all children and students to reach their full potential, is a priority for educators across Ontario. Children’s health and well-being contribute to their ability to learn, and that learning in turn contributes to their overall well-being.

Educators play an important role in promoting the well-being of children and youth by creating, fostering, and sustaining a learning environment that is healthy, caring, safe, inclusive, and accepting. A learning environment of this kind will support not only children’s cognitive, emotional, social, and physical development but also their mental health, their resilience, and their overall state of well-being. All this will help them achieve their full potential in school and in life.

A focus on well-being in the early stages of a child’s development is of critical importance. *The Kindergarten Program* integrates learning about well-being into the program expectations and pedagogy related to “Self-Regulation and Well-Being”, one of the four “frames”, or broad areas of learning, in Kindergarten. Educators take children’s well-being into account in all aspects of the Kindergarten program. A full discussion of what educators need to know to promote children’s well-being in all developmental domains, and to support children’s learning about their own and others’ well-being, is provided in Chapter 2.2, “Thinking about Self-Regulation and Well-Being”.

Foundations for a Healthy School

Ontario schools provide all children in Kindergarten and all students in Grades 1 to 12 with a safe and healthy environment for learning. Children’s learning in Kindergarten helps them make informed decisions about their health and well-being and encourages them to lead healthy, active lives. This learning is most authentic and effective when it occurs within the context of a “healthy” school – one in which children’s learning about health and well-being is reinforced through policies, programs, and initiatives that promote health and well-being.

The Ministry of Education’s *Foundations for a Healthy School: Promoting Well-Being as Part of Ontario’s Achieving Excellence Vision* identifies how schools and school boards, in partnership with parents¹ and the community, can develop a healthier school. The foundations for a healthy school are built using a comprehensive, integrated approach within five broad, interconnected areas. These five areas, which align closely with the *K–12 School Effectiveness Framework* (2013), are as follows:

- Curriculum, Teaching, and Learning
- School and Classroom Leadership

1. The word “parents” is used in this document to refer to parent(s) and guardian(s). It may also be taken to include caregivers or close family members who are responsible for raising the child.

- Student Engagement
- Social and Physical Environments
- Home, School, and Community Partnerships

Collectively, the strategies, policies, and initiatives that schools undertake within these areas contribute to a positive school climate, in which all members of the school community feel safe, included, and accepted and which promotes positive, respectful interactions and healthy relationships.

The principles and pedagogical approaches that define the Kindergarten program promote healthy-school principles and practices in all five of the areas noted above. Children's learning in the frames "Belonging and Contributing" and "Self-Regulation and Well-Being" is focused on knowledge and skills related

to health and well-being. More detailed information about the ways in which the Kindergarten program promotes children's health and well-being in all five areas may be found in the following sections and chapters:

- "Well-Being: What Are We Learning from Research?", in Chapter 2.2, "Thinking about Self-Regulation and Well-Being"
- Chapter 1.3, "The Learning Environment"
- "Play-Based Learning: The Connections to Self-Regulation", in Chapter 1.2, "Play-Based Learning in a Culture of Inquiry"
- Chapter 3.2, "Building Partnerships: Learning and Working Together"
- "Health and Safety in Kindergarten", in Chapter 3.1, "Considerations for Program Planning"

PART 1: A PROGRAM TO SUPPORT LEARNING AND TEACHING IN KINDERGARTEN



Part 1 outlines the philosophy and key elements of the Kindergarten program, focusing on the following: learning through relationships; play-based learning in a culture of inquiry; the role of the learning environment; and assessment *for*, *as*, and *of* learning through the use of pedagogical documentation, which makes children's thinking and learning visible to the child, the other children, and the family.

1.1 INTRODUCTION

VISION, PURPOSE, AND GOALS

The Kindergarten program is a child-centred, developmentally appropriate, integrated program of learning for four- and five-year-old children. The purpose of the program is to establish a strong foundation for learning in the early years, and to do so in a safe and caring, play-based environment that promotes the physical, social, emotional, and cognitive development of all children.

The primary goals of the Kindergarten program are:

- to establish a strong foundation for learning in the early years;
- to help children make a smooth transition from home, child care, or preschool settings to school settings;
- to allow children to reap the many proven benefits of learning through relationships, and through play and inquiry;
- to set children on a path of lifelong learning and nurture competencies that they will need to thrive in the world of today and tomorrow.

The Kindergarten program reflects the belief that four- and five-year-olds are capable and competent learners, full of potential and ready to take ownership of their learning. It approaches children as unique individuals who live and learn within families and communities. Based on these beliefs, and with knowledge gained from research and proven in practice, the Kindergarten program:

- supports the creation of a learning environment that allows all children to feel comfortable in applying their unique ways of thinking and learning;
- is built around expectations that are challenging but attainable;
- is flexible enough to respond to individual differences;

- provides every child with the kind of support he or she needs in order to develop:
 - self-regulation;
 - health, well-being, and a sense of security;
 - emotional and social competence;
 - curiosity, creativity, and confidence in learning;
 - respect for diversity;
 - supports engagement and ongoing dialogue with families about their children's learning and development.

The vision and goals of the Kindergarten program align with and support the goals for education set out in *Achieving Excellence: A Renewed Vision for Education in Ontario* (2014) – achieving excellence, ensuring equity, promoting well-being, and enhancing public confidence.

THE IMPORTANCE OF EARLY LEARNING

[Early childhood is] a period of momentous significance ... By the time this period is over, children will have formed conceptions of themselves as social beings, as thinkers, and as language users, and they will have reached certain important decisions about their own abilities and their own worth.

(Donaldson, Grieve, & Pratt, 1983, p. 1)

Evidence from diverse fields of study tells us that children grow in programs where adults are caring and responsive. Children succeed in programs that focus on active learning through exploration, play, and inquiry. Children thrive in programs where they and their families are valued as active participants and contributors.

From *How Does Learning Happen?* (Ontario Ministry of Education, 2014c, p. 4)

Early childhood is a critical period in children’s learning and development. Early experiences, particularly to the age of five, are known to “affect the quality of [brain] architecture by establishing either a sturdy or a fragile foundation for all of the learning, health and behavior that follow” (Center on the Developing Child at Harvard University, 2007).

Children arrive in Kindergarten as unique individuals shaped by their particular cultural and social background, socio-economic status, personal capabilities, and day-to-day experiences, and at different stages of development. All of these factors influence their ability to reach their full potential. Experiences during the early years strongly influence their future physical, mental, and emotional health, and their ability to learn.

For these reasons, children’s early experiences at school are of paramount importance. Quality early-learning experiences have the potential to improve children’s overall health and well-being for a lifetime. By creating, fostering, and sustaining learning environments that are caring, safe, inclusive, and accepting, educators can promote the resilience and overall well-being of children. The cognitive abilities, skills, and habits of mind that characterize lifelong learners have their foundation in the critical early years.

In addition, it is essential for programs to provide a variety of learning opportunities and experiences based on assessment information that reveals what the children know, what they think and wonder about, where they are in their learning, and where they need to go next. Assessment that informs a pedagogical approach suited to each child’s particular strengths, interests, and needs will promote the child’s learning and overall development.

The importance of early experiences for a child’s growth and development is recognized in the design of *The Kindergarten Program*, which starts with the understanding that all children’s learning and development occur in the context of relationships – with other children, parents and other family members, educators, and the broader environment.

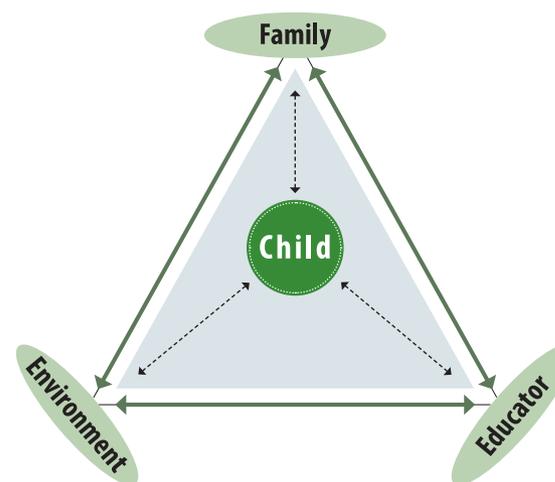


Figure 1. Learning and development happen within the context of relationships among children, families, educators, and their environments.

A SHARED UNDERSTANDING OF CHILDREN, FAMILIES, AND EDUCATORS²

The understanding that children, families, and educators share about themselves and each other, and about the roles they play in children’s learning, has a profound impact on what happens in the Kindergarten classroom. The view of children, families, and educators provided in the following descriptions is at the heart of Ontario’s approach to pedagogy for the early years. When educators in early years and Kindergarten programs reflect on and come to share these perspectives, and when they work towards greater consistency in pedagogical approach, they help strengthen and transform programs for children across the province.

2. This section is adapted from *How Does Learning Happen?* (Ontario Ministry of Education, 2014c).

All children are competent, capable of complex thinking, curious, and rich in potential and experience. They grow up in families with diverse social, cultural, and linguistic perspectives. Every child should feel that he or she belongs, is a valuable contributor to his or her surroundings, and deserves the opportunity to succeed. When we recognize children as competent, capable, and curious, we are more likely to deliver programs that value and build on their strengths and abilities.

Families are composed of individuals who are competent and capable, curious, and rich in experience. Families love their children and want the best for them. Families are experts on their children. They are the first and most powerful influence on children's learning, development, health, and well-being. Families bring diverse social, cultural, and linguistic perspectives. Families should feel that they belong, are valuable contributors to their children's learning, and deserve to be engaged in a meaningful way.

Educators are competent and capable, curious, and rich in experience. They are knowledgeable, caring, reflective, and resourceful professionals. They bring diverse social, cultural, and linguistic perspectives. They collaborate with others to create engaging environments and experiences to foster children's learning and development. Educators are lifelong learners. They take responsibility for their own learning and make decisions about ways to integrate knowledge from theory, research, their own experience, and their understanding of the individual children and families they work with. Every educator should feel he or she belongs, is a valuable contributor, and deserves the opportunity to engage in meaningful work.

The Kindergarten Program flows from these perspectives, outlining a pedagogy that expands on what we know about child development and invites educators to consider a more complex view of children and the contexts in which they learn and make sense of the world around them. This approach may require, for some, a shift in mindset and habits. It may prompt a rethinking of theories and practices – a change in what we pay attention to; in the conversations that we have with children, families, and colleagues; and in how we plan and prepare.

The manner in which we interact with children is influenced by the beliefs we hold. To move into the role of co-learner, educators must acknowledge the reciprocal relationship they are entering: the child has something to teach us, and we are engaged in a learning journey together, taking turns to lead and question and grow as we encounter new and interesting ideas and experiences. The view of the child presented above recognizes the experiences, curiosities, capabilities, competencies, and interests of *all* learners.

Pedagogy and Programs Based on a View of Children as Competent and Capable

Pedagogy is defined as the understanding of how learning happens and the philosophy and practice that support that understanding of learning.

(Ontario Ministry of Education, 2007, p. 90)

When educators view children as competent and capable, the learning program becomes a place of wonder, excitement, and joy for both the child and the educator.

(Saskatchewan Ministry of Education, 2008, p. 9)

Educators' beliefs about children are foundational to sound pedagogy and a high-quality learning program. Over the years, the image of children has evolved, and the cultural view – the one that is “shaped by the values and beliefs about what childhood should be at the time and place in which we live” (Fraser, 2012, p. 20) – has shifted. When educators believed that children were “empty vessels to be filled”, programs could be too didactic, centred on the educator and reliant on rote learning, or they involved minimal interaction between children and educators; in either case, they risked restricting rather than promoting learning.

When programs are founded on the image of the child presented above and when educators apply knowledge and learning gained through external and classroom research, early learning programs in Ontario, including Kindergarten programs, can establish a strong foundation for learning and create a learning environment that allows all children to grow and to learn in their unique, individual ways.

PEDAGOGICAL APPROACHES

The pedagogical approaches that work best for young children are similar to strategies that work for learners of all ages, from infancy to adulthood. Evidence from research and practice shows that these approaches are the most effective ways to nurture and support learning and development among both children and adult learners.

- ◆ **Responsive relationships** – Evidence from research and practice shows that positive interactions between teacher and student are the most important factor in improving learning (Hattie, 2008). An awareness of being valued and respected – of being seen as competent and capable – by the educator builds children's sense of self and belonging and contributes to their well-being, enabling them to be more engaged in learning and to feel more comfortable in expressing their thoughts and ideas.

- ◆ **Learning through exploration, play, and inquiry** – As children learn through play and inquiry, they develop – and have the opportunity to practise every day – many of the skills and competencies that they will need in order to thrive in the future, including the ability to engage in innovative and complex problem-solving and critical and creative thinking; to work collaboratively with others; and to take what is learned and apply it in new situations in a constantly changing world. (See the “Fundamental Principles of Play-Based Learning” in the following section, and Chapter 1.2, “Play-Based Learning in a Culture of Inquiry”.)
- ◆ **Educators as co-learners** – Educators today are moving from the role of “lead knower” to that of “lead learner” (Katz & Dack, 2012, p. 46). In this role, educators are able to learn more *about* the children as they learn *with* them and *from* them.
- ◆ **Environment as third teacher** – The learning environment comprises not only the physical space and materials but also the social environment, the way in which time, space, and materials are used, and the ways in which elements such as sound and lighting influence the senses. (See Chapter 1.3, “The Learning Environment”.)
- ◆ **Pedagogical documentation** – The process of gathering and analysing evidence of learning to “make thinking and learning visible” provides the foundation for assessment *for*, *as*, and *of* learning. (See Chapter 1.4, “Assessment and Learning in Kindergarten: Making Children's Thinking and Learning Visible”.)
- ◆ **Reflective practice and collaborative inquiry** – Educators develop and expand their practice by reflecting independently and with other educators, children, and children's families about the children's growth and learning.

These pedagogical approaches, outlined in *How Does Learning Happen?*, are central to the discussion in Part 1 of this document. Throughout the document, they are understood to be foundational to teaching that supports learning in Kindergarten and beyond.

FUNDAMENTAL PRINCIPLES OF PLAY-BASED LEARNING

Global conversations and perspectives on learning from various fields – neuroscience, developmental and social psychology, economics, medical research, education, and early childhood studies – confirm that, among the pedagogical approaches described above, play-based learning emerges as a focal point, with proven benefits for learning among children of all ages, and indeed among adolescent and adult learners. The following fundamental principles have been developed to capture the recurring themes in the research on beneficial pedagogical approaches, from the perspective of play-based learning.

FUNDAMENTAL PRINCIPLES OF PLAY-BASED LEARNING

1. Play is recognized as a child's right, and it is essential to the child's optimal development.

- The United Nations Convention on the Rights of the Child recognizes “the right of the child ... to engage in play ... appropriate to the age of the child” and “to participate freely in cultural life and the arts”.³
- Play is essential to the development of children's cognitive, physical, social, and emotional well-being. The Association for Childhood Education International (ACEI) recognizes play as necessary for all children and critical to children's optimal growth, learning, and development from infancy to adolescence.⁴

3. United Nations Human Rights Office of the High Commissioner, Article 31, “Convention on the Rights of the Child” (Entry into force 2 September 1990).

4. J.P. Isenberg and N. Quisenberry, “A Position Paper of the Association for Childhood Education International – Play: Essential for All Children”. *Childhood Education* (2002), 79(1), p. 33.

- Educators recognize the benefits of play for learning and engage in children's play with respect for the children's ideas and thoughtful attention to their choices.

2. All children are viewed as competent, curious, capable of complex thinking, and rich in potential and experience.

- In play-based learning, educators honour every child's views, ideas, and theories; imagination and creativity; and interests and experiences, including the experience of assuming new identities in the course of learning (e.g., “I am a writer!”; “I am a dancer!”).
- The child is seen as an active collaborator and contributor in the process of learning. Together, educators and learners plan, negotiate, reflect on, and construct the learning experience.
- Educators honour the diversity of social, cultural, and linguistic backgrounds represented among the children in the classroom, and take each child's background and experiences into account when interpreting and responding to the child's ideas and choices in play.

3. A natural curiosity and a desire to explore, play, and inquire are the primary drivers of learning among young children.

- Play and inquiry engage, challenge, and energize children, promoting an active, alert, and focused state of mind that is conducive to learning.
- Children's choices in play are the best starting points for the co-construction of learning with the child.
- Educators respond to, challenge, and extend children's learning in play and inquiry by:
 - observing;
 - listening;

- questioning;
- provoking;⁵
- providing descriptive feedback;
- engaging in reciprocal communication and sustained conversations;
- providing explicit instruction at the moments and in the contexts when it is most likely to move a child or group of children forward in their learning.

4. The learning environment plays a key role in what and how a child learns.

- A learning environment that is safe and welcoming supports children’s well-being and ability to learn by promoting the development of individual identity and by ensuring equity⁶ and a sense of belonging for all.
- Both in the classroom and out of doors, the learning environment allows for the flexible and creative use of time, space, and materials in order to respond to children’s interests and needs, provide for choice and challenge, and support differentiated and personalized instruction and assessment.

5. In education, the term “provoking” refers to provoking interest, thought, ideas, or curiosity by various means – for example, by posing a question or challenge; introducing a material, object, or tool; creating a new situation or event; or revisiting documentation. “Provocations” spark interest, and may create wonder, confusion, or even tension. They inspire reflection, deeper thinking, conversations, and inquiries, to satisfy curiosity and resolve questions. In this way, they extend learning.

6. Ensuring equity is one of the four goals outlined in the Ministry of Education’s *Achieving Excellence: A Renewed Vision for Education in Ontario* (2014a, p. 8), which states: “The fundamental principle driving this [vision] is that every student has the opportunity to succeed, regardless of ancestry, culture, ethnicity, gender, gender identity, language, physical and intellectual ability, race, religion, sex, sexual orientation, socio-economic status or other factors.”

- The learning environment is constructed collaboratively and through negotiation by children and educators, with contributions from family and community members. It evolves over time in response to children’s developing strengths, interests, and abilities.
- A learning environment that inspires joy, awe, and wonder promotes learning.

5. In play-based learning programs, assessment supports the child’s learning and autonomy as a learner.

- In play-based learning, educators, children, and family members collaborate in ongoing assessment *for* and *as* learning to support children’s learning and their cognitive, physical, social, and emotional development.
- Assessment in play-based learning involves “making thinking and learning visible” by documenting and reflecting on what the child says, does, and represents in play and inquiry.

THE FOUR FRAMES OF THE KINDERGARTEN PROGRAM

In the Kindergarten program, four “frames”, or broad areas of learning, are used to structure thinking about learning and assessment.⁷ The frames – **Belonging and Contributing, Self-Regulation and Well-Being, Demonstrating Literacy and Mathematics Behaviours**, and **Problem Solving and Innovating** – are designed to support an approach that aligns with the way children’s learning naturally occurs and that focuses on aspects of learning that are critical to young children’s development. The frames reflect the integrated way in which learning occurs during children’s play and inquiry in Kindergarten.

7. Children’s learning is also evaluated and communicated in terms of these four frames, as outlined in *Growing Success – The Kindergarten Addendum* (2016).

The four frames align with the *four foundational conditions* needed for children to grow and flourish – **Belonging, Well-Being, Expression, and Engagement**. These foundations, or *ways of being*, are central to the pedagogy outlined in the early learning resource *How Does Learning Happen?* They are conditions that children naturally seek for themselves, and they apply regardless of age, ability, culture, language, geography, or setting.



Figure 2. The four frames of Kindergarten (outer circle) grow out of the four foundations for learning and development set out in the early learning curriculum framework (inner circle). The foundations are essential to children’s learning in Kindergarten *and beyond*. The frames encompass areas of learning for which four- and five-year-olds are developmentally ready.

The four Kindergarten frames grow out of the four foundations for learning and development. The Kindergarten frames are defined more specifically to reflect the developmental and learning needs of children in Kindergarten and beyond.

The overall expectations (OEs) of the Kindergarten program are connected with the four frames (see The Overall Expectations, by Frame). An expectation is associated with the frame that encompasses the aspects of learning and development to which that expectation most closely relates. An expectation that addresses more than one aspect of learning may be connected with more than one frame.⁸ (Two of the overall expectations – OE1 and OE22 – are associated with all four frames, because they relate to *all* aspects of learning. For example, OE1 describes the ability to communicate ideas and emotions in various verbal and non-verbal ways, which is fundamental to *all* learning.) The grouping of expectations within particular frames also indicates a relationship between and among those expectations.

The four frames may be described as follows:

Belonging and Contributing. This frame encompasses children’s learning and development with respect to:

- their sense of connectedness to others;
- their relationships with others, and their contributions as part of a group, a community, and the natural world;
- their understanding of relationships and community, and of the ways in which people contribute to the world around them.

The learning encompassed by this frame also relates to children’s early development of the attributes and attitudes that inform citizenship, through their sense of personal connectedness to various communities.

8. Note that the inclusion of an expectation in a frame or frames does not mean that the learning outlined in the expectation relates exclusively to that frame or frames.

Self-Regulation and Well-Being. This frame encompasses children’s learning and development with respect to:

- their own thinking and feelings, and their recognition of and respect for differences in the thinking and feelings of others;
- regulating their emotions, adapting to distractions, and assessing consequences of actions in a way that enables them to engage in learning;
- their physical and mental health and wellness.

In connection with this frame, it is important for educators to consider:

- the interrelatedness of children’s self-awareness, sense of self, and ability to self-regulate;
- the role of the learning environment in helping children to be calm, focused, and alert so they are better able to learn.

What children learn in connection with this frame allows them to focus, to learn, to respect themselves and others, and to promote well-being in themselves and others.

Demonstrating Literacy and Mathematics Behaviours. This frame encompasses children’s learning and development with respect to:

- communicating thoughts and feelings – through gestures, physical movements, words, symbols, and representations, as well as through the use of a variety of materials;
- literacy behaviours, evident in the various ways they use language, images, and materials to express and think critically about ideas and emotions, as they listen and speak, view and represent, and begin to read and write;
- mathematics behaviours, evident in the various ways they use concepts of number and pattern during play and inquiry; access, manage, create, and evaluate information; and experience an emergent understanding of mathematical relationships, concepts, skills, and processes;
- an active engagement in learning and a developing love of learning, which can instil the habit of learning for life.

What children learn in connection with this frame develops their capacity to think critically, to understand and respect many different perspectives, and to process various kinds of information.

Problem Solving and Innovating. This frame encompasses children’s learning and development with respect to:

- exploring the world through natural curiosity, in ways that engage the mind, the senses, and the body;
- making meaning of their world by asking questions, testing theories, solving problems, and engaging in creative and analytical thinking;
- the innovative ways of thinking about and doing things that arise naturally with an active curiosity, and applying those ideas in relationships with others, with materials, and with the environment.

The learning encompassed by this frame supports collaborative problem solving and bringing innovative ideas to relationships with others.

In connection with this frame, it is important for educators to consider the importance of problem solving in *all* contexts – not only in the context of mathematics – so that children will develop the habit of applying creative, analytical, and critical thinking skills in all aspects of their lives.

What children learn in connection with *all four frames* lays the foundation for developing traits and attitudes they will need to become active, contributing, responsible citizens and healthy, engaged individuals who take responsibility for their own and others’ well-being.

SUPPORTING A CONTINUUM OF LEARNING

The Ontario Early Years Policy Framework envisages early years curriculum development that helps children make smooth transitions from early childhood programs to Kindergarten, the primary grades, and beyond. All of the elements discussed above – a common view of children as competent and capable;

coherence across pedagogical approaches; a shared understanding of the foundations for learning and development, leading into the four frames of the Kindergarten program; and the fundamental principles of play-based learning – contribute to creating more seamless programs for children, families, and all learners, along a continuum of learning and development.

The vision of the continuum is illustrated in *How Does Learning Happen?* (p. 14). That graphic is adapted here to depict the continuum from the perspective of Kindergarten.

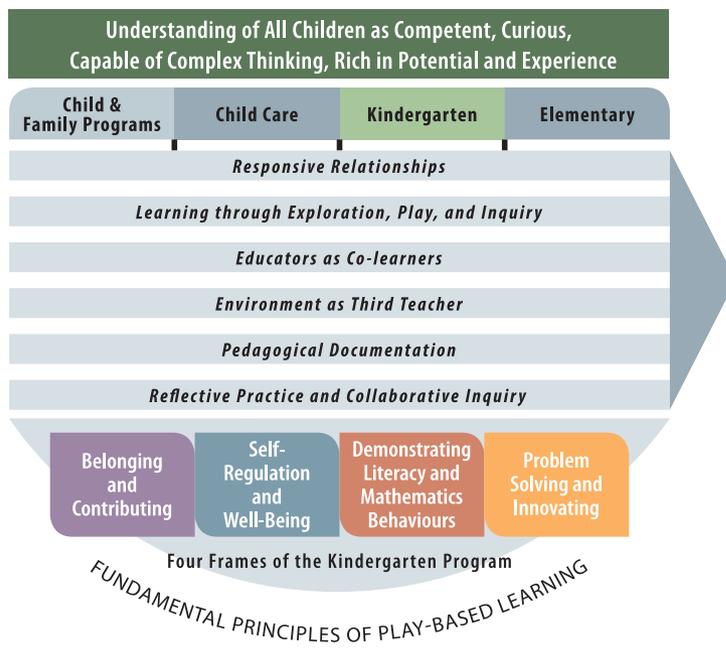


Figure 3. Pedagogical approaches that support learning are shared across settings to create a continuum of learning for children from infancy to age six, and beyond.

THE ORGANIZATION AND FEATURES OF THIS DOCUMENT

This document is organized in four parts:

- **Part 1** outlines the philosophy and key elements of the Kindergarten program, focusing on the following: learning through relationships; play-based learning in a culture of inquiry; the role of the learning environment; and assessment *for*, *as*, and *of* learning through the use of pedagogical documentation, which makes children’s thinking and learning visible to the child, the other children, and the family.
- **Part 2** comprises four chapters, each focused on “thinking about” one of the four Kindergarten frames. Each chapter explores the research that supports the learning focus of the frame for children in Kindergarten, outlines effective pedagogical approaches relevant to the frame, and provides tools for reflection to help educators develop a deeper understanding of learning and teaching in the frame.
- **Part 3** focuses on important considerations that educators in Kindergarten take into account as they build their programs, and on the connections and relationships that are necessary to ensure a successful Kindergarten program that benefits all children.
- **Part 4** sets out the learning expectations for the Kindergarten program and provides tools for supporting educators’ professional learning and reflection. The list of the *overall expectations*, indicating the frame or frames to which each expectation is connected, is presented in Chapter 4.2. Chapters 4.3 through 4.6 set out the overall expectations and conceptual understandings *by frame*, along with “expectation charts” for each frame. The expectation charts provide information and examples to illustrate how educators and children interact to make thinking and learning visible in connection with the *specific expectations* that are relevant to the particular frame.

- The appendix is a chart that lists all of the overall expectations, with their related specific expectations, and indicates the frame(s) with which each expectation is associated.

The document is designed to guide educators as they adopt the pedagogical approaches that will help the children in their classrooms learn and grow. It recognizes the transformational nature of these approaches, as well as the benefits of collaborative reflection and inquiry in making the transition from more traditional pedagogies and program planning approaches. To support and inspire educators as they reflect on and rethink traditional beliefs and practices and apply new ideas from research and proven practice, this document offers a variety of special features:



Educator Team Reflections and Inside the Classroom: Reflections on Practice – Reflections and scenarios provided by educators from across Ontario, reflecting situations that arose in their own classrooms during the implementation of full-day Kindergarten.



Professional Learning Conversations – Interspersed throughout the expectation charts in Part 4 and focused on learning in relation to the overall and specific expectations, these conversations illustrate pedagogical insights gained through collaborative professional learning among educators across Ontario.



Questions for Reflection – Questions designed to stimulate reflection and conversation about key elements and considerations related to the Kindergarten program.



Misconceptions – Lists of the common misconceptions that abound about children’s learning through play and inquiry and that are addressed throughout the chapters of this document.



Links to Resources – Active links to electronic resources, including videos and web postings, that illustrate pedagogical approaches discussed in the text.



Internal Links – Active links to related sections or items within *The Kindergarten Program*.

1.2 PLAY-BASED LEARNING IN A CULTURE OF INQUIRY

Children are constantly engaged in making meaning of their world and in sharing their perceptions. Play is an optimal context for enabling children to work out their ideas and theories and use what they already know to deepen their understanding and further their learning. Innately curious, children explore, manipulate, build, create, wonder, and ask questions naturally, moving through the world in what might be called an “inquiry stance”. Educators observe and document the children’s thinking, ideas, and learning; interpret and analyse what they have noticed; and express their own thinking and wondering as they interact with the children. In a Kindergarten classroom, the educators adopt an inquiry stance along with the children, and a culture of inquiry characterizes the learning environment.

Inquiry is an integral part of certain disciplines. For example, inquiry processes and skills are central to science and technology. However, in the Kindergarten program, inquiry is not a set of processes and skills but a pervasive approach or “stance”, a habit of mind that permeates all thinking and learning throughout the day. It is not limited to a subject area or topic, a project, or a particular time of day. It is not an occasional classroom event, and it is not an approach appropriate for only some children. As noted in the curriculum policy document for each discipline in the Ontario curriculum, inquiry is “at the heart of learning in all subject areas”. Educators use their professional knowledge and skills to co-construct inquiry with the children – that is, to support children’s learning through play, using an inquiry approach.

PLAY AS THE OPTIMAL CONTEXT FOR LEARNING: EVIDENCE FROM RESEARCH

Play nourishes every aspect of children’s development. ... Play develops the foundation of intellectual, social, physical, and emotional skills necessary for success in school and in life. It “paves the way for learning”.

(Canadian Council on Learning, 2006, p. 2)

Play is a vehicle for learning and rests at the core of innovation and creativity. It provides opportunities for learning in a context in which children are at their most receptive. Play and academic work are not distinct categories for young children, and learning and doing are also inextricably linked for them. It has long been acknowledged that there is a strong link between play and learning for young children, especially in the areas of problem solving, language acquisition, literacy, and mathematics, as well as the development of social, physical, and emotional skills (NAEYC, 2009; Fullan, 2013; Ontario Ministry of Education, 2014c).

Young children actively explore their environment and the world around them through play. When children are exploring ideas and language, manipulating objects, acting out roles, or experimenting with various materials, they are engaged in learning through play. Play, therefore, has an important role in learning and can be used to further children’s learning in all areas of the Kindergarten program.

How Do Children Learn through Play?

In its “Statement on Play-Based Learning”, the Council of Ministers of Education, Canada (CMEC), recognizes the educational value of play as follows:

The benefits of play are recognized by the scientific community. There is now evidence that neural pathways in children’s brains are influenced by and advanced in their development through the exploration, thinking skills, problem solving, and language expression that occur during play.

Research also demonstrates that play-based learning leads to greater social, emotional, and academic success. Based on such evidence, ministers of education endorse a sustainable pedagogy for the future that does not separate play from learning but brings them together to promote creativity in future generations. In fact, play is considered so essential to healthy development that the United Nations has recognized it as a specific right for all children. ...

Given the evidence, the CMEC believes in the intrinsic value and importance of play and its relationship to learning. Educators should intentionally plan and create challenging, dynamic, play-based learning opportunities. Intentional teaching is the opposite of teaching by rote or continuing with traditions simply because things have always been done that way. Intentional teaching involves educators’ being deliberate and purposeful in creating play-based learning environments – because when children are playing, children are learning.

(CMEC, 2012)

 **READ:** “United Nations Declaration of the Rights of the Child”
“CMEC Statement on Play-Based Learning”

The process through which learning happens in play is complex. Educators continually develop and deepen their understanding of that process through professional learning and classroom observation, interpretation, and analysis. To be effective, educators depend on their nuanced understanding of the many ways in which children learn and develop and how children’s grasp of concepts is revealed during play (Trawick-Smith & Dziurgot, 2010). Educators also realize how critical their role is in helping to consolidate and further children’s learning in play by making their learning visible to the children, as well as to their families.



EDUCATOR TEAM REFLECTIONS

It was important for our educator teams to understand and express our beliefs and have courageous conversations about play-based learning. Even though we all believed that play was important, there was a range of opinion as to what it meant. Some of us had training that said: When children are at play, adults should be “hands off”. Others had experienced play as what the children do while the teacher is busy working with (“teaching”) a small group. We studied the description that was offered at a professional learning session on the Kindergarten program and began to rethink play as a critical context for learning. We all agreed to study our role in play.

We had to rethink what was meant by “play”. We believed the activities we used to plan were play. Every child had to complete a “cookie-cutter” craft – but the activity never really met the children’s needs. They would either rush through it, or we would end up coaxing them to complete the craft – otherwise, we would have to explain to their parents why they hadn’t completed it! At first, we worried about removing these activities, but when we began to offer the children materials so they could choose how to represent their thinking, we realized that they were much more capable as artists than we had thought. We are amazed every day at the complex pieces they are creating.

Kindergarten classrooms make use of play and embed opportunities for learning through play in the physical environment (ELECT, 2007, p. 15; see also Chapter 1.3, “The Learning Environment”). The learning experiences are designed by the educators to encourage the children to think creatively, to explore and investigate, to solve problems, self-regulate, and engage in the inquiry process, and to share their learning with others.



EDUCATOR TEAM REFLECTION

I was uncertain of my role in the children’s play – I thought it was my role to set up play activities and then supervise and react, but I worried that I might take over the play if I interacted with the children. Now, we are learning about documentation and figuring out our role. We find time in the day – and have made it a priority – to study our documentation together. We have a deeper understanding of the children’s learning, and we are really thinking together about how we might respond, extend, and challenge the children’s thinking ... and our own!

Play-Based Learning: The Connections to Self-Regulation

When children are fully engaged in their play, their activity and learning ... [are] integrated across developmental domains. They seek out challenges that can be accomplished. ... Through play, children learn trust, empathy, and social skills.

(Pascal, 2009a, pp. 8–9)

Vygotsky (1978) connects socio-dramatic play (“pretend” play) to children’s developing self-regulation. During socio-dramatic play, children naturally engage in learning that is in their “zone of proximal development” – in other words, learning that is at the “edge” of their capacities. Evidence may be seen in various play contexts in the classroom – children may be noticing for the first

time that they can influence how water moves through a tube, that their shadow moves when they move, or how it feels to move a paintbrush over a canvas. As they notice and build on their insights, they are regulating their own learning.

In socio-dramatic play, language becomes a self-regulatory tool. Children’s private speech, or self-talk, is a mode through which they shift from external regulation (e.g., by a family member or educator) to self-regulation. Children begin to assimilate adult prompts, descriptions, explanations, and strategies by incorporating them into their self-talk. As they integrate the language they have heard into their own private speech, they are activating complex cognitive processes such as attention, memory, planning, and self-direction (Shanker, 2013b). Participants in socio-dramatic play communicate with each other using language and symbolic gestures to describe and extrapolate from familiar experiences, and to imagine and create new stories. Socio-dramatic play supports children’s self-regulation and increases their potential to learn as they engage with the people and resources in their environment (Pascal, 2009a).



VIEW: Video clips – “A play-based approach to learning is important in developing children’s self-regulation”

“Play-based learning creates a passion for learning”

“Rethinking and repeating supporting self-regulation – one educator team’s reflection”

THE INQUIRY APPROACH: EVIDENCE FROM RESEARCH

Research suggests that students are more likely to develop as engaged, self-directed learners in inquiry-based classrooms (Jang, Reeve, & Deci, 2010).

Inquiry allows students to make decisions about their learning and to take responsibility for it. [Educators] create learning contexts that allow children to make decisions about their learning processes and about how they will demonstrate their learning. They encourage collaborative learning and create intellectual spaces for students to engage in rich talk about their thinking and learning. They create a classroom ethos that fosters respect for others' ideas and opinions and encourages risk-taking. ... Collectively, these actions lead to a strong sense of student self-efficacy.

(Ontario Ministry of Education, 2011, p. 4)

Asking questions and making sense of information to expand understanding are at the core of all inquiry. Through its focus on an inquiry approach, the Kindergarten program promotes the development of higher-order thinking skills by capitalizing on children's natural curiosity, their innate sense of wonder and awe, and their desire to make sense of their environment. An inquiry approach nurtures children's natural inquisitiveness. As educators give children opportunities to seek answers to questions that are interesting, important, and relevant to them, they are enabling them to address curriculum content in integrated, "real world" ways and to develop – and practise – the higher-order thinking skills and habits of mind that lead to deep learning.



READ: "Getting Started with Student Inquiry", *Capacity Building Series* (October 2011)

"What Educators Are Learning about Learning in an Inquiry Stance", *K to 2 Connections* (August 2013)

VIEW: Video clips – "What does inquiry-based learning look like and sound like? How are educator teams repeating, removing, and rethinking their theme-based planning and moving to inquiry?"

"Reflections from another FDELK team on moving from themes to inquiry. What did they notice?"

"How are educator teams repeating, removing and rethinking their inquiry-based planning?"

PLAY-BASED LEARNING IN AN INQUIRY STANCE

As noted above, educators in a Kindergarten classroom adopt an inquiry stance – a mindset of questioning and wondering – alongside the children, to support their learning as they exercise their natural curiosity. In addition to joining the children in inquiry, educators, as "classroom researchers", wonder and ask questions *about* the children and the children's learning (e.g., "*Why this learning for this child at this time and in this context?*") and about the impact of their interventions on children's learning and growth in learning (e.g., "*What will be the impact on the learning of these children if I intervene in their conversation in this way at this time?*" "*How might changing the way we use the tables in the classroom affect the way the children collaborate?*"). Being in an inquiry stance is critical to creating the conditions required for inquiry learning.

As educators question and wonder along with the children, they bear in mind *the intention for learning* – which, in any given context, will involve one or more of the overall expectations (OEs) set out in this document (see Chapter 4.2). The educators do not plan lessons based on predetermined topics at predetermined times (e.g., topics based on the calendar, such as Mother's Day in May, Thanksgiving in October), and they do not develop lessons or activities around the "nouns" that the children happen to use (e.g., rocks, trains, tadpoles), as was often done in the past. Instead, inquiries evolve out of reciprocal questioning and wondering. As the children express their thinking, educators think about questions they can ask that will further provoke children's thinking and continue to stimulate their curiosity and wonder.

For example, a child might bring some tadpoles to school. As the child voices questions, ideas, facts, and opinions about them, other children who are interested in the tadpoles might join in. The educators engage the children *about* their questions and ideas, probing for more details and clarification from them. Rather than *providing* information about the tadpoles, they wonder out loud about how, together, they might find answers to some of the questions. One of the children might express the idea that tadpoles turn into frogs. Through a probing question such as “*How could we find out if that’s what happens?*”, the educators can elicit ideas, and the group might decide to observe the tadpoles over a period of time and to record what they observe (OE13). Together, the educators and the children consider the many ways in which the children could represent their observations and ideas (e.g., in a drawing or a model, or by acting them out) and the kinds of tools and equipment they will need to do this. They might also discuss the care they will need to provide for the tadpoles. At this point, other children might be invited to be part of the inquiry as well. The educators might probe to find out what bigger questions underlie the children’s interest – what does it mean to develop? To transform? What is happening on the inside of the tadpole while it changes on the outside? The educators might also choose to provoke further inquiry by providing opportunities for the children to explore other similar kinds of changes or stages of life that happen – for example, in seeds, in eggs, and even in humans. Once the inquiry is under way, the observations would need to be recorded – and this would become *a purpose for writing* and an opportunity for the children to learn about an important element of the writing process (OE1 and OE10).

USING QUESTIONS TO PROMOTE INQUIRY AND EXTEND THINKING

In response to children’s questions and ideas, educators pose questions such as:

- What do you think?
- What would happen if ...?
- I wonder why your measurement is different from Jasmine’s?
- How are you getting water from one container to another?
- How could you show your idea? How can we find out if your idea works?
- I wonder if we could make our own marble run?

Children ask questions that lead to inquiry. For example:

- How can this car go faster down the ramp?
- Where are the biggest puddles?

Children communicate ideas and ask further questions while they are experimenting and investigating. They might describe materials they are using, indicate a problem they are having, or ask a question such as “I wonder what would happen if I ...?” They begin to listen to their peers and may offer suggestions to them. Through these interactions and as the educators extend children’s thinking through their questions and observations, children also learn to make predictions and draw conclusions:

- “I think if I use a bigger block on the bottom, my tower won’t break. See, it worked! I used this big block and it didn’t fall over.”
- “I thought it would take six footsteps, but it took ten.”

The educators engage with the children in inquiries that enable the children to explore their questions and wonderings as *co-learners* with the educators. The educators offer provocations that build on the children’s thinking or invite the children to engage in new ways of learning.

Further to the example about tadpoles above, the educators might point out to the children that scientists investigate things they are interested in, and that the children now have an opportunity to “be” scientists as well. The educators will have placed hand lenses and recording materials at a table with the tadpoles, pointing out to the children that they are using the same tools that scientists use. They might also mention that the children are using the same processes that scientists use (e.g., observing, wondering, asking questions and generating theories, communicating, working together). As the children conduct their investigation, the educators observe and document what they say and do. The educators confer about the documentation and then reflect on it with the children, negotiating what materials the children might add or take away in order to further test their theories about the tadpoles and build on their thinking.

 For more information about pedagogical documentation, see Chapter 1.4, “Assessment and Learning in Kindergarten”.

 **VIEW:** Video clips – “What does it look like and sound like to co-construct inquiry with the children? Reflections on inquiry: Observations and making learning visible”
 “What does it look like and sound like to co-construct inquiry with the children? Listening in on a classroom inquiry”

 **QUESTIONS TO GUIDE VIDEO VIEWING**

- What could the conversation be while watching the video (e.g., recalling a moment when you have rethought some aspect of your program)?
- How did the learning change when the educators trusted their judgement and rethought their intervention?

The following chart outlines the elements of the inquiry process in the Kindergarten classroom, describing the actions of both the children and the educators.

The Inquiry Process in the Kindergarten Classroom

Elements of the child’s inquiry process	When children are engaged in the inquiry process, they:	When educators are modelling or supporting the inquiry process, they:
Initial engagement noticing, wondering, playing	<ul style="list-style-type: none"> • raise questions about objects and events around them 	<ul style="list-style-type: none"> • observe and listen
Exploration exploring, observing, questioning	<ul style="list-style-type: none"> • explore objects and events around them and observe the results of their explorations • make observations, using all of their senses, and generate questions 	<ul style="list-style-type: none"> • act as co-learners with the children, posing thoughtful, open-ended questions • encourage children to observe and talk among themselves and to the educators
Investigation planning, using observations, reflecting	<ul style="list-style-type: none"> • gather, compare, sort, classify, order, interpret, describe observable characteristics and properties, notice patterns, and draw conclusions, using a variety of simple tools and materials 	<ul style="list-style-type: none"> • provide a rich variety of materials and resources, and strategically question and observe children to discover, clarify, and expand on the children’s thinking • model how to plan, observe, and reflect
Communication sharing findings, discussing ideas	<ul style="list-style-type: none"> • work individually and with others, share and discuss ideas, and listen to ideas 	<ul style="list-style-type: none"> • listen to the children to help them make connections between their prior knowledge and new discoveries



QUESTIONS FOR REFLECTION: HOW WELL ARE WE SUPPORTING THE CHILDREN'S INQUIRY?

- How does inquiry evolve in both our indoor and outdoor classroom?
- What does inquiry in our indoor and outdoor classroom look like/sound like?
- Is there sufficient time for the children to engage deeply in play and inquiry? How do we know?
- How will we communicate our play-based inquiry process to any educator who stands in for us in the classroom (e.g., our planning-time teacher)?
- What is it about our learning environment that makes it conducive to inquiry and supports inquiry-based learning?
- Does this material lead to rich and engaging inquiries? What makes it stimulating?



READ: "What Educators Are Learning about Learning in an Inquiry Stance", *K to 2 Connections* (August 2013)

"Getting Started with Student Inquiry", *Capacity Building Series* (October 2011)

"Inquiry-based Learning", *Capacity Building Series, K–12* (May 2013)

The Critical Role of the Educator Team: Co-constructing Inquiry and Learning

[W]e must abandon our idea of a static, knowable educator and move on to a view of an educator in a state of constant change and becoming. The role of the educator shifts from a communicator of knowledge to a listener, provocateur, documenter, and negotiator of meaning.

(Pacini-Ketchabaw et al., 2009, p. 103)

The examples in the previous section illustrate how educators, in their interactions with the children, constantly engage in a creative collaboration with them to co-construct thinking and learning. The process can be summarized as follows:

As educators collaborate with the children to:

- formulate questions,
- select materials,
- stimulate and support creativity,
- think aloud about various perspectives and interpretations,
- think aloud about multiple possibilities or solutions,
- solve problems, and
- document thinking and learning,

they *intentionally and purposefully*:

- listen,
- observe,
- document,
- analyse documentation, considering a range of possible meanings and perspectives and making connections to the overall expectations, and
- provide feedback through questions and prompts that effectively extend thinking and learning.

Educators strive to internalize the overall expectations, reviewing the conceptual understandings that accompany them to see the broader ideas, skills, and understandings that flow from them. Educators keep the overall expectations in mind as they interact with the children in play and inquiry.

The educators use their observations and documentation of the children’s thinking and learning to seek multiple perspectives – including those of the children themselves, the parents and other family members, and colleagues. The information gleaned from these various perspectives can provide greater insight into the children’s thinking and learning, enabling the educators to make the kinds of connections and pose the kinds of questions and prompts that will most effectively support and extend the children’s learning.

As the educators interact with the children, they respond to, clarify, challenge, and expand on their thinking. They negotiate the selection of a rich variety of materials and resources for them to use, and co-construct the children’s inquiry with them.

As children move naturally from noticing and wondering about the objects and occurrences around them to exploring, observing, and questioning in a more focused way, the educators document their thinking, what they are wondering about, their theories, and the ideas that pique their interest. They interpret and analyse the documentation to support their own inquiry and learning about how the children learn. Their analysis, which focuses on how the children’s thinking and learning relates to the overall expectations, informs the choices educators will make about how to further challenge and extend the children’s thinking and learning. It also serves as a guide to the level and type of support each child needs. The educators’ documentation and analysis make children’s thinking and learning visible and inform the path that educators take to support individual children’s learning.

➡ For further information, see Chapter 1.4, “Assessment and Learning in Kindergarten”.

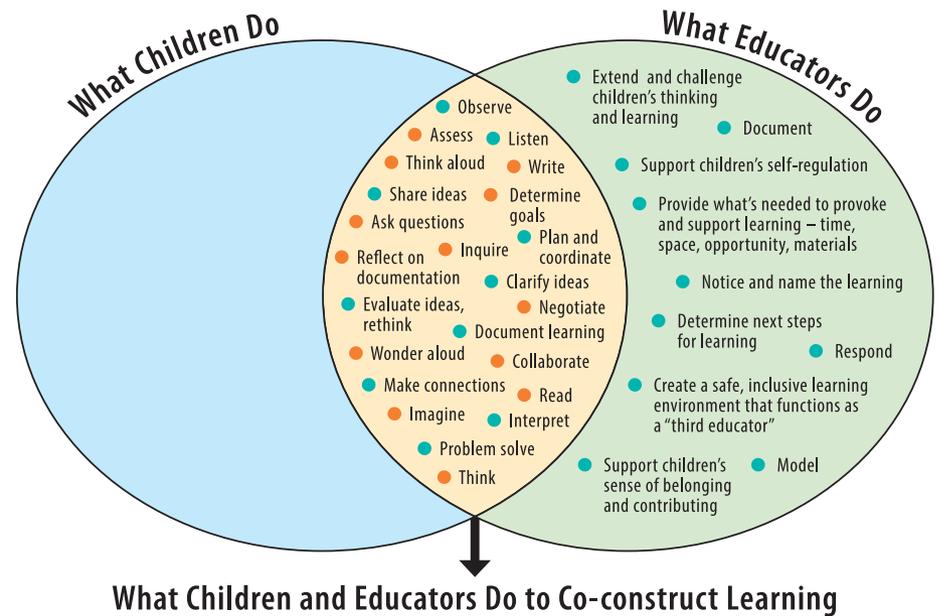


Figure 4. This graphic depicts the interdependent roles of children and educators in play-based learning. It identifies the various ways in which children and educators engage throughout the day, showing their roles in the co-construction of learning.

QUESTIONS FOR REFLECTION

As we observe and document, then review and analyse our documentation to determine next steps for a particular child’s or group of children’s learning, we ask ourselves questions such as the following:

- How can we find out what this child might be thinking?
- Why have we chosen this learning for this child at this time in this context?
- How is this child constructing knowledge with other children? In what ways does the child participate and contribute?

(continued)

- How is this child’s approach to a problem different now from what it was earlier?
- How does the evidence we’ve gathered help us determine the next steps in learning for the child?

Literacy in an inquiry stance

- How are the children using letters in their play?
- What do they know about their names?
- How do they approach text in a book? How do they respond to text that they see in the environment?
- How do they use language when they negotiate, debate, describe, order, count, predict, make suppositions, or theorize?
- How do they use drawing and/or writing (graphic representation) to capture memory, describe experiences, represent thinking, negotiate, list, and label?
- How do they bring social narratives into their play?
- How do they bring retells and recounts into their play?

Mathematics in an inquiry stance

- How do the children reveal their knowledge and thinking about quantity relationships?
- What does the way they use materials/manipulatives reveal about their mathematical thinking?
- How do they think about measurement and about the ways we use it in various familiar contexts? How do they reveal their thinking about measurement?
- What do they think about what makes a pattern?
- What do they think about *why* we collect data (e.g., to inform us, to help us make decisions about something)? What are their ideas about *how to collect data* (e.g., taking surveys)?
- How do they reveal their thinking about shapes and spatial relationships?



VIEW: Video clips – “The FDELK team members engage with children in different ways, prompting children to reveal their thinking in role”

“Reflections on inquiry: The power of inquiry co-constructing and making learning visible”

How Does the Inquiry Approach Differ from Theme-Based or Unit Planning?

Traditional planning models asked educators to develop “themes” or teaching units composed of several lesson plans with stated objectives, the relevant program/curriculum learning expectations, and materials lists. Kindergarten programs were traditionally structured around monthly themes related to seasonal events and celebrations, and resource books supporting such themes have provided related activities that adults believed would appeal to early learners. Such planning models and associated resources, all based on adult perceptions of children’s interests and learning, have been shown to have a negative effect on children’s engagement (Edwards, Gandini, & Forman, 1998; Wells, 2001).



EDUCATOR TEAM REFLECTION

At a recent professional learning session, I began to feel uncomfortable about how closely one of the planning models we were asked to critique aligned with the plans I had been using for several years. As our group began to reflect, we wondered if the way we had always planned made sense from the children’s point of view. I reflected that I had often felt somewhat limited by plans that were based on the monthly calendar. I had always assumed that the children were interested in the monthly topics I had chosen – but had I ever asked them what they *were* interested in? And were they really able to think deeply and concretely about topics outside their direct experience, such as polar bears and the rainforest?

Traditional Planning versus an Inquiry-Based Approach

Traditional Planning	Inquiry-Based Approach
<ul style="list-style-type: none"> • Topics are decided by educators (e.g., apples, Thanksgiving, dinosaurs). • Topics change on a monthly basis. • Decision making and planning involve little or no input from the children. • Planning is often related to calendar events and topics traditionally perceived as interesting to all young children. • Planning is heavily focused on specific expectations rather than on overall expectations. • Children all complete the same activities (e.g., apple or pumpkin booklets, standardized generic crafts), regardless of individual interests and needs. • There is a focus on standardized procedures and task completion. • Topics are often abstract from the children’s perspective (e.g., polar bears, dinosaurs), making it difficult for them to engage in higher-level thinking. 	<ul style="list-style-type: none"> • The focus of inquiries emerges out of children’s thinking, wonderings, and theories, as well as ideas that pique their interest. • The duration of inquiries is not predetermined, and is flexible. • Experiences, materials, thinking, and learning are co-constructed with the children. • Educators focus on the overall expectations as they co-construct learning with the children. • Learning is personalized and differentiated. • There is a focus on providing opportunities for children to test their own theories and explore answers to their own questions and wonderings. • Children explore their own questions and ideas more deeply and directly, and so engage more readily in higher-level thinking (e.g., <i>How does water move? Where do people read? Where do we find numbers?</i>).

Traditional Planning	Inquiry-Based Approach
<ul style="list-style-type: none"> • The children are asked to make contrived connections (e.g., identifying words that start with the letter <i>a</i>; working on an apple booklet). • Planning often involves a Community Helper theme. 	<ul style="list-style-type: none"> • The concepts of citizenship and social justice emerge out of an inquiry stance (e.g., <i>How does my behaviour affect my friends and family and other people in my community?</i>).

X MISCONCEPTIONS about Play-Based Learning

- That play-based learning that “follows the children’s lead” means that the educators do not take an active role in designing children’s learning experiences as they collaborate with them in play or that they do not intentionally and purposefully inject planned opportunities for challenging and extending children’s thinking and learning
- That play happens after or apart from learning
- That literacy and mathematics are neglected in a play-based context
- That play does not involve group work
- That play is always hands-on and physically active
- That play is either teacher-initiated or child-initiated (rather than being a fluid, negotiated engagement)

MISCONCEPTIONS about Learning and Teaching in an Inquiry Stance

- That the educators listen for every topic the children are interested in and use each one as a topic of inquiry, or that they pursue all of the fleeting and ever-changing interests of the children

(continued)

- That inquiry should begin with or be limited to topics found in non-fiction texts
- That the educators' role is to pick a broad topic (e.g., forest animals) and have the children select some aspect of the topic to explore (e.g., a particular animal)
- That only the children can generate ideas for inquiry, provoke thinking, or ask questions
- That inquiry involves a project or is conducted at a particular time in the day
- That the children determine what they will learn

COMMUNICATING WITH PARENTS AND FAMILIES ABOUT PLAY-BASED LEARNING

Play-based learning supports growth in the language and culture of children and their families.

(CMEC, 2012)

Play-based learning is the foundation of the Kindergarten program in Ontario. The concept of learning through play means different things to different people, especially to the parents and families of the children. It is therefore important for educators to have a clear understanding of play-based learning in the Ontario context, in order to be able to explain it to families, colleagues, and community partners. A shared understanding of how learning takes place through play can encourage family members and community partners to support play at home, and in community settings as well, and can help expand children's opportunities for play and learning.

➡ See "Fundamental Principles of Play-Based Learning", in Chapter 1.1, "Introduction".

Family members want to understand how their children develop and learn. They normally welcome and benefit from educators' observations and information about how to support their children's learning. When speaking informally to families, and during classroom visits, educators can make the links between play and learning by sharing their observations in the moment. For example:

"Amalla is learning about symmetry as she builds with the blocks today. Let's ask her to tell us what she notices about her structure."

"When he was playing a card game with some of the other children, Jerome learned about taking turns."

Families also have valuable insights into their own children. When educators foster a more reciprocal relationship with families, both educators and families will have a more complex understanding of the children.

Children *communicate* and *represent* their learning with one another and with the educators in the context of their play and inquiry. The educators also provide more formal opportunities – for example, in child-led family conferences – for children to share their learning with their families through the documentation they and the educators have created, shared, and discussed.

 **VIEW:** Video "One parent's reflection on how learning is made visible through documentation"

The following parent information sheets are available to support educators' conversations with families and other partners about play- and inquiry-based learning:

- "The Power of Play-Based Learning"
- "Learning through Inquiry"

These resources are intended to supplement face-to-face conversations, not to replace them.

1.3 THE LEARNING ENVIRONMENT

The learning environment is often viewed as “the third teacher”⁹: it can either enhance learning, optimizing students’ potential to respond creatively and meaningfully, or detract from it. Researchers and practitioners in a wide range of disciplines, including early childhood education, developmental education, psychology, cognitive science, and school architecture and design, have come to understand that a key to learning in today’s world is the *social space* in which it occurs, more than the physical space (Fraser, 2012; Helm et al., 2007; OWP/P Architects et al., 2010).

A classroom that is functioning successfully as a third teacher will be responsive to the children’s interests, provide opportunities for children to make their thinking visible, and then foster further learning and engagement.

(Fraser, 2012, p. 67)

In Kindergarten the classroom environment is thoughtfully designed to invite, provoke, and enhance learning, and to encourage communication, collaboration, and inquiry. The space, with all the objects in it, including the various materials and resources for learning, is created and arranged as the children’s learning process unfolds – it is constantly being negotiated by and with the children. This fluid, inclusive, and dynamic social space evolves, in part, as children express their thinking and wonderings and as ideas pique their interest. The educators’ anticipation and recognition of the children’s learning needs throughout the day and over time, based on their observations and analysis (assessment *for* learning), also drive the collaborative creation of

9. The environment as “third teacher” or “third educator” is central to the Reggio Emilia approach to early childhood education. Loris Malaguzzi, the founder of the approach, considered the three teachers of children to be adults, other children, and their physical environment. Others think of the learning environment as the “third teacher” after the two classroom educators (Gandini, 1998, p. 177).

the environment. In addition, the educators’ practice of discussing, displaying, and sharing the children’s work as well as documenting the children’s learning through photographs, transcripts, and video clips – that is, the practice of *making the children’s learning visible* – contributes to the creation of a learning environment that reflects and helps extend the children’s interests and accomplishments.



READ: Karyn Callaghan, *The Environment Is a Teacher* (Ontario Ministry of Education, 2013)

VIEW: Video clips – “A new perspective”

“Questioning our assumptions”

“Rethinking the space”

“Investigating the natural world”

RETHINKING THE LEARNING ENVIRONMENT

We need to think about creating classroom environments that give children the opportunity for wonder, mystery and discovery; an environment that speaks to young children’s inherent curiosity and innate yearning for exploration is a classroom where children are passionate about learning ...

(Heard & McDonough, 2009, p. 2)

Educators plan and begin to create the learning environment before the children arrive in the classroom, using their understanding of children, of their development, and of how they learn, and looking at the space from a child's perspective. They place materials and resources where children can see them and ensure that children have plenty of light and a view of (and if possible, access to) the outdoors. They consider how to create an environment that will support children's learning and accommodate a diversity of choices and needs in terms of space, time, and the use of materials.

BEFORE THE CHILDREN ARRIVE IN THE CLASSROOM: SAMPLE STRATEGIES FROM EDUCATORS

- ✓ Take photographs of the room *before* making changes to support learning.
- ✓ Set the room up *for learning*. Arrange the tables to accommodate small groups, in various places around the classroom, rather than in cafeteria-style rows.
- ✓ Consider the space from a child's perspective. What do the children see from their height?
- ✓ Create areas for different kinds of learning and play. Try to make them versatile, to allow for purposeful learning and conversation.
- ✓ Think about the organization of materials and the kind and quantity of materials the children can access.
- ✓ Select and arrange materials and resources in ways that invite children to explore and that provoke learning but that do not overstimulate or overwhelm.
- ✓ Take "after" photographs. The images will help you see how the children's play and learning are affected by the changes.



QUESTIONS FOR REFLECTION: HOW CAN WE INCORPORATE CONSIDERATIONS ABOUT SPACE AND TIME IN OUR LEARNING ENVIRONMENT DESIGN?

In what ways can we:

- organize spaces to make them "dynamic" – that is, to ensure that they can be changed quickly and easily to meet children's varying needs, and their changes in focus, through the course of the day?
- organize and use the space creatively, efficiently, and flexibly to accommodate multiple purposes, such as brief large-group meetings and opportunities for small-group and individual work?
- ensure that the learning environment supports learning for *all* children, accommodating a range of diverse needs and learning styles?
- anticipate how the organization of the space itself – the different areas for learning, the availability of open spaces – might invite imaginative play and provoke thinking and learning among the children?

THINKING ABOUT TIME AND SPACE

Kindergarten educators carefully consider how the use of time and space affects the children's learning. At the beginning of the year, the educators work collaboratively to set the classroom up for learning and to plan the "flow of the day". They work around daily school schedules (e.g., times for gym, lunch, recess, and library) in order to provide as much uninterrupted time as possible for children's play and inquiry, both in and out of doors, and to minimize

transitions (see “A Flexible Approach to Learning: The Flow of the Day”, in Chapter 3.1, “Considerations for Program Planning”). After the plan has been devised, it is adjusted in collaboration with the children, as necessary, to meet the children’s changing needs. Educators strive for fluid and flexible plans in each instance, so that opportunities to respond to the children and to co-create with them can be readily accommodated.

THINKING ABOUT MATERIALS AND RESOURCES

As the Kindergarten program gets under way, the educators observe the children’s behaviour and make adjustments in response to what they see. They consider how materials and resources – their availability, quantity, and arrangement – affect the children’s play. They take into account *each child’s individual perspective* – based, for example, on the materials the child chooses to play with, how the child approaches print found in the environment (in books, charts created in the classroom, and various other forms), and the sorts of things the child thinks, wonders, and asks questions about.



INSIDE THE CLASSROOM: A PROFESSIONAL LEARNING CONVERSATION ABOUT MATERIALS

The term “learning environment” encompasses many things – the layout of the space, the appearance and “feel” of the space, and the materials that are used by the children. The following scenario illustrates how, in contrast to the traditional practice of providing as many different learning materials as possible, using a smaller, intentional selection of materials can enhance learning. This is an example of how educators can modify the learning environment on the basis of reflection to support children’s growth in learning.

The educator team had been observing a group of children playing with a bin full of farm animal figures that had accumulated over the last few years. The educators consulted briefly about their observations:

Educator 1: I’ve noticed that Jana and Hailey have been spending a lot of time with the toy farm animals. They often smash the animals together as though they’re fighting. I’m a little concerned, because I’m not sure what they are learning in this kind of play. We seem to be spending a lot of time intervening and trying to redirect their play.

Educator 2: I agree. We’ve both been putting out fires. Maybe we should just put the animals away.

Educator 1: I’ve been wondering about that, too. But what if we tried something different? I’m thinking that the problem might have something to do with the large and random assortment of materials – there are so many different kinds of animals! I thought we might try having the children sort them, but there may be too many – it might be overwhelming.

Educator 2: What if we removed some of the animals but still left a variety? We could also add some materials that might help the children extend their thinking. What if we added some materials they could use to make fences?

Educator 1: Sounds good. Let’s talk with the children about what we noticed and see what they think.

Immediately after they removed a large portion of the animals and added fencing materials, the educators observed that the children’s play started to change, as did their interactions. The children were making fences and sorting the animals, and they were using words such as “more than” and “almost” to communicate mathematical concepts such as *comparing and estimating*. The educators interacted with the children by *noticing and naming* their learning – “I see that you were comparing the number of animals in the two pens you created. How did you figure out . . . ?”

The educator team said that this kind of reflection on their part, where they would come together briefly to discuss their observations and make adjustments on the basis of their shared insights, was typical for them in their practice.



QUESTIONS FOR REFLECTION: HOW CAN WE MAXIMIZE THE EFFECTIVENESS OF MATERIALS AND RESOURCES IN OUR LEARNING ENVIRONMENT?

In what ways can we:

- anticipate how materials and resources will be used to support learning throughout the day?
- think about how the materials might provoke or challenge children to think and learn?
- consider the intent of the learning when deciding what materials to add to – or remove from – learning areas?
- take account of all the materials in the room? For example, are there enough to engage children without overwhelming them? Are they developmentally appropriate and challenging? Do they promote appropriate risk-taking? Do they reflect the diversity of the children in the class, the school, the community, and the province?
- ensure that the materials in the classroom environment reflect the strengths, needs, capabilities, and interests of each child?

CO-CONSTRUCTING THE LEARNING ENVIRONMENT

Educators report that children become much more engaged in their learning when the learning environment is planned and designed in negotiation with the children – that is, when “the children’s voice” is heard in planning the environment and organizing and selecting materials for learning.

Many physical features in the environment are fixed. Such constraints call for problem solving by the educators and the children together to find ways to create a flexible and dynamic learning environment.

Educators find creative ways to support children in making independent and informed choices within the learning environment. For example, educators consider how the nature, placement, and quantity of materials in the environment might affect the children’s play, taking into account the intent of the learning. They engage children in negotiating the organization of the materials. They discuss how and where the materials might be stored so that children can access them readily. Educators can put in place various kinds of supports, such as photos and labels, to help children make and act on independent choices as they play and interact in the learning environment.



READ: “Student Voice: Transforming Relationships”, *Capacity Building Series, K–12* (September 2013)



QUESTIONS FOR REFLECTION: HOW CAN WE INCLUDE THE CHILDREN’S VOICE IN CO-CONSTRUCTING THE LEARNING ENVIRONMENT?

In what ways will we:

- engage children in the process of determining and organizing materials in and around the room?
- support them in making independent and informed choices? For example, are differentiated supports, such as photos, labels, and other visual aids, in place to help them make independent choices? Are materials and resources accessible to the children?
- make sure that the children see their experiences reflected in the learning environment? For example, are the children’s various backgrounds (e.g., cultural, linguistic, family structure, socio-economic) represented in the choice of reading materials?

- ensure that the children’s perspectives and ideas are represented in the environment and reflected in the selection of materials and resources?
- include the children’s voice in ongoing decisions about materials and resources and their organization and accessibility in the environment, without losing sight of the intention for learning?
- involve the children in how and when the learning areas change and evolve?
- make children’s thinking and learning visible in the environment? For example, is the children’s work displayed around the classroom?

THE LEARNING ENVIRONMENT AND BELIEFS ABOUT CHILDREN

The following reflective questions can guide educators as they rethink traditional practices in the learning environment and move towards practices that reflect our current understanding of how children learn best.

➡ See “The Learning Environment and Self-Regulation” in Chapter 2.2, “Thinking about Self-Regulation and Well-Being”.



QUESTIONS FOR REFLECTION: HOW DOES OUR LEARNING ENVIRONMENT REFLECT OUR BELIEFS ABOUT CHILDREN AND LEARNING?

Our beliefs about children and how they learn are reflected in the learning environments we create. How does our learning environment reflect the following beliefs?

- **The learning environment functions as the “third educator”.**
What does the environment say to the children? How do the items displayed on the walls enhance and extend children’s thinking? How will we know if the environment is overstimulating, with too many distracting colours and materials? Do we have too many commercial materials that are not of real interest to the children?

- **Children learn through play and inquiry.**
In what ways do our existing resources, materials, and classroom layout support play-based, child-driven learning? What will we do to make the learning areas flexible so that they provide opportunities for purposeful learning and conversations? How will we monitor their effectiveness?
- **Children are competent and capable, and their learning is enhanced when their voice is included and when they are engaged with educators in co-constructing their learning environment (see above).**
Is the learning environment mostly built, made, and/or co-created with and by the children? What is our evidence?
- **The principles of universal design for learning (UDL) and differentiation support learning for all children.**
Does the environment allow for multiple entry points for learning and for demonstration of learning (saying and/or doing and/or representing)? Do our materials and resources support various different learning styles?
- **Children learn best when conceptual understandings from across the four frames are integrated.**
What do we do to remain alert to the connections that can be made between children’s thinking and conceptual understandings from across the *four frames* – Belonging and Contributing, Self-Regulation and Well-Being, Demonstrating Literacy and Mathematics Behaviours, and Problem Solving and Innovating? In what ways does our learning environment support the development of children’s self-regulation skills? Have we embedded materials and resources that support learning related to literacy and mathematics in all areas of the classroom? Do we provide opportunities for children to express their ideas through visual arts and music? In what ways do we provoke problem solving in areas unrelated to mathematics?
- **Play-based learning in an inquiry stance engages children’s innate curiosity.**
Does our learning environment reflect the children’s inquiries rather than featuring seasonal themes and assigned topics? Will the appearance of the

(continued)

learning environment change throughout the year? What will drive the changes? What might happen if we use fewer materials and arrange them in a novel way in the classroom? What might happen if we introduce natural and found materials?

- **Children benefit from understanding the intention for learning.**

Do the materials and resources in our learning environment confuse or “bury” the point of the learning? For example, do the children really understand that the words displayed on the walls inside popcorn kernels are high-frequency words? Or do our materials and resources help children grasp what they are learning? For example, do we display and discuss words *as they crop up repeatedly* in our conversations and in reading and writing?

LEARNING IN THE OUTDOORS

The learning environment extends to the outdoors. A growing body of research suggests that connecting to the natural world contributes to children’s mental, physical, emotional, and spiritual health and well-being (Louv, 2005). Children’s natural curiosity and sense of wonder can be fostered by providing them with many opportunities to learn outdoors. The learning that takes place in classroom experiences can be explored in the “extended classroom” that nature provides. Similarly, the natural environment can be reflected in the indoor learning environment.

For many reasons, including the prevalence of electronic media, children today spend relatively little time in natural environments. This “nature deficit” has been linked to disturbing trends such as childhood obesity, attention disorders, and depression. Outdoor spaces offer valuable learning opportunities, and natural settings can inspire the kind of thinking, learning, leadership, and

innovation that may be inhibited in children in the classroom but that, once revealed, can be incorporated back into the classroom environment.

In the Kindergarten program, learning in the outdoors is included as part of the instructional day, and the educators play an active role, engaging with children in an inquiry stance as they play, explore, and learn together outside the classroom.



QUESTIONS FOR REFLECTION: HOW CAN WE MAKE THE OUTDOORS PART OF THE LEARNING ENVIRONMENT?

In what ways can we:

- extend the learning environment beyond the classroom – into the outdoors as well as to the rest of the school and to the community beyond the school? For example, how can we use diverse settings for inquiry and imaginative play to promote learning that can then be brought back into the classroom?
- build outdoor learning into the flow of the school day?
- reflect the natural environment within the classroom? For example, are we introducing natural and found objects among the materials children can use in the classroom?
- help children to explore the natural world more deeply and directly, beyond the learning that natural items in the classroom can provoke?



VIEW: “The Learning Environment” – all video clips

READ: “Ontario Children’s Outdoor Charter” website

X MISCONCEPTIONS about the Learning Environment:

- That the learning environment should be designed with an emphasis on aesthetics, focusing on things like neutral colours and pretty storage containers (e.g., wicker baskets) and using commercial materials to decorate the walls, rather than on creating an environment that supports learning and makes children's thinking and learning visible
- That the children's input amounts to little more than choosing the materials for a selected activity, such as dramatic play
- That furniture should be arranged to facilitate whole-group activities, such as snack, lunch, or crafts, rather than to support learning as it occurs throughout the day
- That "learning environment" refers merely to the size of the space and the furniture in the room, and refers only to the indoor classroom
- That learning in the outdoors requires travel beyond the school grounds, or extensive knowledge of the natural world

1.4 ASSESSMENT AND LEARNING IN KINDERGARTEN: MAKING CHILDREN'S THINKING AND LEARNING VISIBLE

Assessment is the process of gathering and interpreting information that accurately reflects the child's demonstration of learning in relation to the knowledge and skills outlined in the overall expectations of The Kindergarten Program. The primary purpose of assessment is to improve learning and to help children become self-regulating, autonomous learners.

(*Growing Success – The Kindergarten Addendum*, 2016, p. 6)

Assessment is the key to children's learning in Kindergarten. It takes place concurrently with instruction and is an integral part of learning.

Young children reveal their understanding in what they *say*, what they *do*, and what they depict, or *represent*. Educators observe, listen, and ask probing questions in order to document and interpret the children's thinking and learning and, in their interactions with the children, to develop a shared understanding of what they are learning and what the next steps in their learning should be.

PEDAGOGICAL DOCUMENTATION: WHAT ARE WE LEARNING FROM RESEARCH?

Documenting the evidence of learning is the most important aspect of assessment in Kindergarten and is, indeed, an integral part of all assessment approaches.

(*Growing Success – The Kindergarten Addendum*, 2016, p. 8)

The term “pedagogical documentation” is currently used to refer to the process of gathering and analysing a wide range of evidence of a child's thinking and learning over time and using the insights gained to *make the child's thinking and*

learning visible to the child and the child's family. The process enables educators to support further learning for each child in the most effective way possible.

Information about children's learning is gathered from observations, notes, photos, videos, voice recordings, work samples, and interactions with children.¹⁰ That information, or evidence of learning, is analysed and interpreted by the educators in collaboration with the children and their parents or other family members to gain insights into the children's learning paths and processes. The insights gained are the basis for determining next steps in the child's learning.

The monograph “Pedagogical Documentation”, in the ministry's *Capacity Building Series*, cites educational research in describing the benefits of reviewing and analysing *evidence of learning*:

One of the greatest predictors of new learning is prior knowledge and understanding. William (2011) outlines how educators can harness this predictive power by eliciting and interpreting evidence of students' thinking. He suggests that assessing student learning [to support] instruction has proven to have “unprecedented power to increase student engagement and to improve learning outcomes” [p. 13]. Other researchers support this claim. Earl and Hannay (2011) suggest that through the rigorous use of evidence of student learning ... educators are becoming “knowledge leaders”, pushing our understanding of teaching and learning to the frontiers of innovation [p. 191].

(Ontario Ministry of Education, 2012, p. 1)

10. Educators should be aware of any school board policy or guidelines related to storing, sharing, or disseminating print or digital images or recordings of children. Educators are expected to comply with any such policies.

These findings are relevant for students from Kindergarten to Grade 12. Gathering and analysing evidence of children’s learning supports pedagogical decision making about a variety of questions, including what approaches and materials are most likely to help the child learn, what contexts for learning will suit the child best, which groupings of children will allow for individual learning needs to be addressed effectively, and what level of support to offer as the child engages in new learning.

Rinaldi (2006) refers to documentation as the “pedagogy of listening” and “visible listening” (pp. 65, 68). Pedagogical documentation is not a form of summative assessment and should not be reserved for the end of a given period of time. Instead, it is done on an ongoing basis, and it may involve revisiting and rethinking evidence, as part of a cyclical process that promotes children’s growth and learning.



EDUCATOR TEAM REFLECTIONS

At first we thought we had to document everything. With two educators in the room, it was possible to capture an overwhelming quantity of photos, recordings, and transcripts. We had to begin there. Now we are becoming more discerning in what we document. We are trying to slow down and think, “Was that really noteworthy?” We are starting to ask reflective questions about the documentation. We notice which children are there and, sometimes more importantly, which ones are not. We are also seeing ourselves in the process – we notice what we are saying and doing and how we are interacting. It is like putting a complex puzzle together.

The evidence we collected allowed us to see many *more* possibilities for making children’s thinking and learning visible. Using various forms of documentation challenged us to see the children differently, and to value each child’s unique process of development. What was made visible was the learning process of children, their multiple languages, and the particular strategies that each child used.

Later on, after practising pedagogical documentation for a few months, we realized that we’d moved from capturing “stories of learning” to engaging in the “study of learning”.

Capturing and deeply analysing diverse representations of student thinking and learning can be very challenging. That’s why the value of collaborative inquiry – that is, of team members working together to study and record student learning and thinking – cannot be underestimated. While documentation provides rich descriptions of what students say, do, and represent, it is the educator team’s collective reflection on and analysis of the evidence that deepens understanding. The first step, therefore, is to have a team that is committed to placing documentation at the heart of learning.



READ: “Pedagogical Documentation Revisited”, *Capacity Building Series, K–12* (January 2015)

USING PEDAGOGICAL DOCUMENTATION TO BEST EFFECT

Helm, Beneke, and Stenheimer (2007) argue that documentation is of limited value if it is not used to gain further insights into children’s thinking and learning and to determine where to go next in learning. “As long as teachers remember that documentation is a tool meant to inform their teaching, their time learning these new skills will have been well spent” (p. 40).

Only after considerable analysis of what the documentation reveals, in terms of children’s theories, understandings, and misunderstandings, will teachers be in a position to formulate hypotheses, predictions, and projections about future learning experiences that have continuity with children’s current thinking, and that will challenge and engage a particular group of learners at a particular time and place.

(Brenda Fyfe in Gandini and Kaminsky, 2004, p. 7, citing the ideas of John Dewey, 1938)

When a piece of documentation seems puzzling, educators gain important insights into the child’s thinking and learning by taking the time for deep analysis and interpretation from multiple perspectives – the child’s, the parents’, and that of other educators – and by going back to obtain additional evidence. Recognizing that learning is a complex process, educators understand the importance of “slowing down” – of taking the time to listen and observe, in an “inquiry stance” (see Chapter 1.2, “Play-Based Learning in a Culture of Inquiry”). They ask questions and reflect on the impact that their pedagogical decisions and approaches are having on a child’s learning. In this way, educators deepen their understanding and adapt practice to respond more precisely to the child’s needs and readiness to learn, as part of “assessment *for* learning” and “assessment *as* learning” (see the section “Co-constructing Learning with the Children: Assessment *for* Learning and Assessment *as* Learning”, below).

From Traditional Note Taking to Pedagogical Documentation

Traditionally, early primary educators used what was known as an *observation note* or *anecdotal note*. For example:

- *January 15: Bradley built a tower using floor blocks today. He worked with Siri and Navid.*

Pedagogical documentation differs from the observation note in that it includes the thinking – both the child’s and the educator’s – that accompanied the action. For example:

- *January 15, 9:30 a.m.: Bradley said he felt tired this morning, but when he noticed that Siri and Navid were starting to build a tower using the floor blocks, he perked up and joined them. We notice that he is often more engaged when constructing things. Let’s use that knowledge to see if we can spark his interest in reading.*

While educators are gathering evidence of children’s thinking, it is important for them to have a method in place for organizing it and for identifying trends, patterns, and next steps. Many educators emphasize the value of technology in collecting information, both to analyse the children’s thinking and learning and to assess their own approaches. “Technology allowed us to go back and examine our use of prompts. ... We were able to reflect on the type of questions we were asking students” (Ontario Ministry of Education, 2012, p. 7).

The Importance of Educator Self-Awareness in Pedagogical Documentation

According to Rinaldi (2006, p. 196), an educator’s documentation of a child’s learning is deeply influenced by his or her own ideas, concepts, and knowledge, as well as by the quality of the educator’s relationship with, and perception of, the child.

The choices educators make about *what* to document reveal their values and what they deem important to notice about children. As educators document children’s learning, they must be aware of their own subjectivity and biases – that is, they must recognize that they are capturing and representing children’s learning through the lens of their particular perspective on children and on how children learn.

When educators view the child through an “asset lens” – that is, with a focus on what the child brings to the learning (strengths, interests, previous learning and experience) rather than on what the child does not know or cannot do – they are able to capture the child’s unique learning processes. Seeing all children as competent and capable of complex thinking and learning promotes effective documentation.

In their observations and interpretations, educators must also be “particularly careful not to assume that children see situations, problems, or solutions as adults do. Instead, good teachers interpret what the child is doing and thinking and attempt to see the situation from the child’s point of view” (Clements & Sarama, 2009, p. 4).

In all aspects of pedagogical documentation, educators must also recognize their responsibility to represent others in ways that are ethical and respectful.



EDUCATOR TEAM REFLECTION

We reflected on a comment we heard at a workshop on pedagogical documentation – that, in order to reflect children’s learning accurately, without bias, educators had to take the “role of the observer” into account.

We thought about the role we’d been playing as we observed the children, and the lens through which we viewed them. We realized that we had been using documentation only to identify what a child could or could not do. We were using a “checklist lens” to determine whether an expectation had been achieved or not, and we collected data about which expectations still needed to be covered. That was our “bias”, our “agenda”. Our questions to the children tended to focus on discrete skills – for example, “How many blocks did you use?” and “What colours did you pick for your painting?” As we went forward, our role as active listeners improved. We began to try to capture the thinking and learning that was taking place rather than simply checking items off a list. We began to ask more open-ended questions, such as, “Tell me more about your building” and “What were you imagining when you were painting this picture?” This approach allowed us to see what the children were already capable of and how we could support them in developing further or thinking more deeply. Our role changed – we continued to collect data, but we also entered into a *relationship* with each child – a relationship focused on learning.



VIEW: Video clips – “How are teams analysing their observations and documentation to inform learning in play?” (*Two clips are listed under this title; both are recommended viewing*)

“A process of study”

“Making thinking and learning visible”

“An ongoing practice of looking deeper”

“Concluding Thoughts” (*Kindergarten Matters: Intentional Play-Based Learning*)

READ: “Pedagogical Documentation”, *Capacity Building Series, K–2* (October 2012)

Dr. Carol Anne Wien, *Making Learning Visible through Pedagogical Documentation* (2013)



QUESTIONS FOR REFLECTION: PEDAGOGICAL DOCUMENTATION

- What are we choosing to document? Why?
- What form of documentation will best illustrate what we’re witnessing? How will we share this documentation?
- What are the child’s ideas about this piece of documentation?
- How does the use of documentation influence the child’s experiences and responses?
- How can we involve family members in the documentation process?
- ...
- What ideas and questions is the child exploring? What questions does the child appear to be exploring?
- How is the child using the materials? Is the child making adjustments and refining his or her actions? In what ways?

(continued)

- How is the child using the physical space? How does the child react to different levels of sensory stimulation?
- How is the child using his or her time?
- What is the child saying about what he or she is doing and thinking? What does the child's body language tell us?
- How is the child responding emotionally to the environment, experiences, and other children and adults?
- What does the child do in the context of others in the group? How does the child adjust his or her actions or behaviour in relation to others? How does the child demonstrate understanding of another person's perspective?

CO-CONSTRUCTING LEARNING WITH THE CHILDREN: ASSESSMENT FOR LEARNING AND ASSESSMENT AS LEARNING

Through pedagogical documentation, educators connect learning and teaching as they share, review, and interpret evidence of the children's learning with the children. The children reflect on the documentation with the educators, and the educators provide descriptive feedback that helps the children understand what they are learning and provides guidance about where they can go next in their learning. Working in an inquiry stance, educators engage in questioning and dialogue with the children to understand what they are thinking and wondering, and consider possible adaptations in their practice to meet the child's learning needs. The educators and children arrive at a shared understanding of what has been learned and negotiate next steps in learning – that is, they co-construct the children's learning.

Assessment for Learning

As educators analyse and interpret the information that they have collected, they are able to assess children's developmental progress and use the insights gained to inform instruction – that is, to design contexts for new learning that are appropriate to each child's observed strengths and that occur at the "edge" of the child's learning. This process is part of assessment *for* learning, providing insights and information about the children's current thinking and learning. Ongoing observation, documentation, and assessment then reveal *new* learning – a shift in the child's thinking that demonstrates that learning has occurred. *Assessment for learning is ongoing and drives instruction. It occurs in all contexts of children's play and inquiry.*

The interpretation and analysis of the evidence gathered, based on an understanding of the child's development and of what is within the range of things the child can do, with and without guidance (that is, of what is within the child's *zone of proximal development*), is the starting point for making thinking and learning visible.

MAKING CONNECTIONS BETWEEN PREVIOUS AND NEW EXPERIENCES

In order for learning to take place, the brain must be able to make connections and find patterns. As children make connections between the things they already know and new information, their brain creates patterns that help them understand the world around them. It is therefore critical that children have multiple and varied opportunities to make connections between previous experiences and the new experiences that they are having every day. When educators see, document, and analyse evidence that these connections are being made, they are able to co-construct and negotiate with the children experiences that support and extend the children's learning.

As the documentation accumulates over time and educators and children reflect on it daily, children begin to internalize the learning and apply it in other contexts. Educator teams analyse the documentation to determine the growth of the child's learning in relation to the knowledge and skills identified in the overall expectations set out in *The Kindergarten Program*.

They focus their observations on concepts, skills, applications, and characteristics that are described in the Kindergarten program expectations.



EDUCATOR TEAM REFLECTION

We are seeing how competent and capable young learners are as they talk about their thinking. Children are becoming better communicators, and it's partly because they feel that their voice matters. They are valued in the co-construction of their learning. Educators are letting the children initiate and finding the fit for the program expectations in their authentic experience, rather than beginning with the expectation. The evidence is in the children's enriched talk.



See Chapter 1.2, "Play-Based Learning in a Culture of Inquiry" for more information about co-constructing learning.

Sustained Shared Thinking

As part of assessment *for* learning, educators engage children in *sustained shared thinking* through ongoing conversation focused, for example, on solving a problem, evaluating a situation, or extending a narrative (ADEEWR, 2009, p. 15). In the process, the children's thinking is extended, and the educators and children gain insight into the children's learning.

Sustained shared thinking involves the use of strategies such as the following during interactions with children:

- acknowledging, noticing, and naming what the child is doing or saying (e.g., "I watched you push the counters to one side as you counted them")

- clarifying (e.g., "Did you mean that the animals might like to be in the pasture?")
- prompting the child towards further thinking and learning ("How will I know how to drive safely in the town you've built?")

Educators offer descriptive feedback as they *notice and name* the learning and guide children towards appropriate next steps.

Assessment as Learning

Educators engage in assessment as learning when they support children in setting individual goals, monitoring their own progress, determining next steps, and reflecting on their thinking and learning, to help them become confident, autonomous learners.

(Growing Success – The Kindergarten Addendum, 2016, p. 6)

Assessment *as* learning – the process that involves children in thinking about and understanding their own learning and that helps them become autonomous learners – is part of making thinking and learning visible. In the past, metacognition was not considered to be within young children's capacity. However, children show evidence of such thinking often and in various contexts. Children contribute to their own assessments through their reflections on the documentation. As children reflect on and analyse evidence of their own learning with the educators, they learn to identify for themselves what they need to do to further their own learning. The children also engage in peer assessment – building on one another's views, perspectives, ideas, and wonderings – and learn more about their own learning in the process.



VIEW: Video "What practices related to observing and documenting and analysing documentation are educator teams repeating?"



EDUCATOR TEAM REFLECTION

We asked the children as they played if they found what they were doing challenging. One child said, “Yes, I was doing pictures and words. Words are tricky, but I sounded it out and looked with my eyes so I could do it, and look, I did it.” Another child said “No, ‘cause I worked hard and I found the numbers. Next time I will go past forty to a hundred – that is an even bigger number.” A third child responded, “Yes, it was a challenge because I made it so big and now I made a plan to work on it some more another day.” The children are insightful about their own and each other’s learning. They go to each other for ideas all the time. At first we thought they would not be able to think about their own learning, let alone describe and discuss it, but we were amazed at the depth of their insights! We learned so much from them – as they did – about who they are as learners and what they had actually learned.

NOTICING AND NAMING THE LEARNING: THE LINK TO LEARNING GOALS AND SUCCESS CRITERIA

As educators and children interact during play, the educators make the children’s thinking and learning visible to them by “noticing and naming” what they are learning. As the educators provide descriptive feedback, they create a picture for children of what and how they are learning – for example, “I see you’ve put down two blue blocks and one green block, then two blue ones and one green one again. We call that a pattern.” They share the language that enables children to identify and understand what they are doing.

Noticing and naming the learning serves as a vehicle for sharing *learning goals* and *success criteria* with the children. Educators articulate broad learning goals – representing subsets or clusters of the knowledge and skills outlined in the expectations – and share them in conversation with the children in terms

and language that the children will understand. They also “notice and name” the success criteria – the accomplishments that relate to the learning goals.

The following examples illustrate what educators and children in Kindergarten might say as they describe learning goals and success criteria connected with the program’s overall expectations (OEs) and conceptual understandings. Children grasp learning goals readily when they think of themselves as taking on a new role or identity – and as being competent to do so:

- I am learning about patterns. [*Relates to OE18, OE20*]
 - I can identify a pattern.
 - I can describe a pattern.
- I am a communicator. I can express my thoughts and ideas and feelings to others in lots of different ways. [*Relates to OE1, OE22*]
 - I showed how I was feeling in this painting.
 - I can talk about how I built my tower.
- I am a member of our class community. [*Relates to OE3*]
 - I share and take turns.
 - I can listen when other children say what they are thinking.
- I am a problem solver. [*Relates to OE4, OE23, and OE24*]
 - I identified what the problem was first.
 - I thought about whether our solution worked or whether we needed to solve the problem another way.

Learning goals articulated in this way enable children to think about and to begin to direct their own learning. Together, learning goals and success criteria help children focus their learning efforts, understand what comes next, and begin to make decisions about their learning. With the educators’ scaffolded support, they can identify how their learning aligns with the learning goals. The strategy of noticing and naming can be used to support children as they move forward, regardless of their developmental level. “As the children

participate in and reflect on a variety of learning experiences, they develop and deepen their understanding of what their learning looks like and what their next steps in learning might be” (*Growing Success – The Kindergarten Addendum*, 2016, p. 8).



QUESTIONS FOR REFLECTION: LEARNING GOALS AND SUCCESS CRITERIA

- How do we know when a child is learning? What happens and what do we observe when a child is learning?
- How will we know what helps a child to learn, and what inhibits or limits the child’s learning?
- How will children know when and what they are learning?
- Do the learning goals reflect our view of the children as competent and capable?
- Are we making appropriate and timely adaptations in the learning goals of all children, including children with special education needs, and providing the accommodations that enable each child to learn?
- Are we mindful that learning goals should support the knowledge and skills described in the overall expectations and conceptual understandings? Are we careful to avoid using learning goals to define specific learning too narrowly and so inadvertently restrict the children’s exploration? Are we careful to make the distinction between learning goals and success criteria (i.e., the accomplishments along the way)?
- What do we notice about the children’s learning when we help them understand their learning goals and success criteria and consciously involve them in making decisions related to their learning?

X MISCONCEPTIONS about Learning Goals and Success Criteria in Kindergarten

- That posting learning goals and success criteria on the walls is sufficient to make children understand them and to help children learn
- That goals should be narrow in scope (e.g., “I know all the letters of the alphabet” or “I can sort objects”)
- That learning goals and success criteria are incompatible with play-based learning
- That goals should be created by the educators, without involving the child or without taking into account the child’s expressed needs and interests
- That children can work towards only one learning goal at a time
- That all children have to focus on the same learning goal at the same time
- That meeting a learning goal means meeting a defined set of success criteria

CONSIDERATIONS IN ASSESSMENT OF LEARNING: CHILDREN’S DEMONSTRATION OF LEARNING

Assessment *of* learning involves summarizing a child’s key learning and growth in learning in relation to the overall expectations at a given point in time, and outlining next steps in learning. As educators assess children’s learning, they must bear in mind that children enter the Kindergarten program at different stages of development and with diverse backgrounds and experiences – and that they will leave it at different stages and at different points in their growth in relation to the program expectations.

Educators must also take into consideration that the period of adjustment to school is longer for some children than for others. Children should therefore be given ample time to demonstrate their learning through varied learning opportunities that are appropriate for their stage of development and within their zone of proximal development.

Young children will demonstrate their learning in many different ways. Factors that influence whether and how children will demonstrate what they know and are able to do include the following:

- the time of day
- the situation
- the kinds of questions that are asked
- the child's previous experience and familiarity with the content
- the child's facility with the language of instruction
- differences in cultural norms, values, and practices regarding learning and ways of demonstrating learning
- the child's capacity for social interaction

To allow for and come to understand the range of influences that may affect a child's learning at any given time, educators should observe and document the child's learning on an ongoing basis in the context of everyday experiences, using a variety of strategies and tools.



QUESTIONS FOR REFLECTION: DETERMINING INFLUENCES ON CHILDREN'S DEMONSTRATION OF LEARNING

- Whose perspectives on and interpretations of our documentation of the child's learning have we considered (e.g., those of parents and other family members, other children, school staff)?
- How did our words or actions influence the child's experience?
- What other factors may have influenced the child's thinking and learning or the child's demonstration of learning (e.g., environmental or cultural factors, time of day, previous experiences, particular types of accommodations)?

- What changes have we noticed over time? Have we noticed differences in the child's demonstration of learning in different contexts?
- How will we use what we've learned from our analysis of the documentation?

COLLABORATING WITH PARENTS TO MAKE THINKING AND LEARNING VISIBLE

Parents contribute to the documentation by sharing their understanding of learning that happens at home.

(Pascal, 2009a, p. 13)

Ongoing, reciprocal communication with children and their families throughout the processes of assessment *for*, *as*, and *of* learning is essential to support children's learning. Educators provide parents and families with information to assist them in understanding the assessment process, including the ways in which assessment helps to identify a child's strengths and how best to proceed with the child's learning. Parents should be invited to participate and observe their child in the classroom setting as often as they can, to review documentation of the child's learning with the educators and the child, and to discuss their observations with the team. Involving parents in the review of documentation will enrich the educators' analysis and understanding of the child's learning, provide insights about the child's background and behaviour at home, and contribute profoundly to the child's learning.

Growing Success – The Kindergarten Addendum (2016) provides details about communicating the child's learning to parents formally, at three points during the school year, using the provincial Kindergarten Communication of Learning templates.

 **VIEW:** Video clips – “Engaging families in observation, documentation and making learning visible”

“One parent’s reflection on how learning is made visible through documentation”

 See “Parents and Families” in Chapter 3.2.

PART 2: THINKING ABOUT LEARNING AND TEACHING IN THE FOUR FRAMES



Part 2 comprises four chapters, each focused on “thinking about” one of the four Kindergarten frames. Each chapter explores the research that supports the learning focus of the frame for children in Kindergarten, outlines effective pedagogical approaches relevant to the frame, and provides tools for reflection to help educators develop a deeper understanding of learning and teaching in the frame.

2.1 THINKING ABOUT BELONGING AND CONTRIBUTING

DESCRIPTION OF THE FRAME

This frame encompasses children’s learning and development with respect to:

- their sense of connectedness to others;
- their relationships with others, and their contributions as part of a group, a community, and the natural world;
- their understanding of relationships and community, and of the ways in which people contribute to the world around them.

The learning encompassed in this frame also relates to the child’s early development of the attributes and attitudes that inform citizenship, through his or her sense of personal connectedness to various communities.

➔ For a wide range of practical examples of how children and educators interact to make thinking and learning about belonging and contributing visible, in connection with related overall and specific expectations in the Kindergarten program, see the expectation charts for this frame in Chapter 4.3.

BELONGING AND CONTRIBUTING: WHAT ARE WE LEARNING FROM RESEARCH?

What we’re learning is that social interaction – the building of the brain through relationships – is an absolutely crucial, essential part of healthy development. Relationships are nutrients for the brain.

(Clinton, 2013b, video transcript, opening statement)

The personal, social, and emotional development of young children lays the social and cognitive groundwork that fosters a love for school, engages children in the process of learning, and supports their future success in school and in life. Early learning programs focus on helping children discover who they are and encourage and support children in reaching their full potential. Relationships are fundamental to children’s personal, social, and emotional development – to the development of a positive sense of self and self-confidence – and relationships within the classroom community provide a critical early environment for that development (Bowlby, 1988; Birch & Ladd, 1997; Hamre & Pianta, 2001; Bilmes, 2012; Shanker, 2013b). Educators who are aware of the importance of these relationships adopt a style, in their interactions with children, that “builds connections” (Clinton, 2013a, p. 4).

In partnership with the home, the school plays a vital role in developing children’s social competence and well-being, providing the foundational tools and knowledge needed for them to play a constructive and contributing role as citizens in the future.

Children enter early learning programs with a diverse range of strengths and experiences. The rate at which individual children adapt to the school environment varies, and educators, in their relationships with the children and their families, play an essential role in facilitating each child’s unique transition. Educators and family members also collaborate with other significant partners, such as school and community resource teams, to ensure the best possible transition to the school environment for every child. With this support, and through connection-building interactions with educators, children develop meaningful relationships that help foster a positive sense of self and a sense of belonging and contributing.

The deepest language of all ... is the language of relationships. It goes much deeper than more easily measured skills like logical thinking and problem solving. Learning is about making relationships, and this is the language that enables us to absorb information and process it at a deep level.

(Fraser, 2012, p. 304)

 **READ:** Dr. Jean M. Clinton, “The Power of Positive Adult Child Relationships: Connection Is the Key,” in *Think, Feel, Act: Lessons from Research about Young Children* (2013)

VIEW: Video “Quality of Interactions”

EMOTIONAL DEVELOPMENT THROUGH RELATIONSHIPS

Developing a sense of belonging and contributing through relationships is tied closely to children’s emotional development and ability to self-regulate (see Chapter 2.2, “Thinking about Self-Regulation and Well-Being”). Educators nurture children’s emotional development – their development of a sense of identity, positive self-concept, self-reliance, and ability to self-regulate – by creating a warm and responsive environment that contributes to children’s ability to experience success.

Through a variety of experiences in which they are supported in demonstrating their competence, children further develop the capacity to understand their own emotions and to express them with consideration and respect for others, to delay gratification, and to adapt their responses. They recognize their uniqueness and their ability to make significant contributions. As they develop self-confidence, children become more receptive to relating to others and take

pleasure in learning new skills. Children need regular opportunities throughout the day to learn and value the interpersonal skills required to communicate and cooperate with others.

A young child’s environment of relationships plays an important role in the development of executive capacities [self-regulation]. Environments that foster executive functioning are characterized by adult-child relationships (both within and outside the home) that guide children from complete dependence on adult support to gradual assumption of the “executive” role for themselves.

(Center on the Developing Child at Harvard University, 2011, p. 6)

Educators support children’s development of emotional maturity and social competence in various ways – for example, by documenting the children’s strategies for navigating social situations, by modelling problem solving and alternative ways of managing conflict, and by affirming positive choices. They provide the scaffolding that individual children need as they learn to self-regulate, with the understanding that children’s ability to regulate emotions varies from individual to individual – for example, that there are differences in children’s emotional reaction times and in the duration and intensity of their emotional responses.

The educators should use their understanding of self-regulation to become attuned to individual differences in children. When educators pay attention to differences in individual children’s ability to manage incoming sensory stimulation and challenges, for example, they are better able to establish nurturing relationships with the children. Similarly, educators should be attuned to cultural differences in the expression of emotion. At home, children learn when to express emotions, and how – for example, through gestures or facial expressions, by making eye contact or avoiding it. By being attuned and responsive to these differences, educators are better able to support the children’s

development of a positive sense of self, and to help strengthen their capacity for developing relationships and for learning.

[P]ositive emotions create energy. Positive emotions create ... resources for dealing with stressors. So the more the child is experiencing a positive emotion, the greater the reserves, the greater the resources for tackling ... challenge[s].

(Dr. Stuart Shanker, transcript from the video clip “What strategies and practices are educator teams repeating, rethinking, and removing to support children’s self-regulation? What does self-regulation look like and sound like?”)

LAYING THE FOUNDATIONS FOR CITIZENSHIP AND ENVIRONMENTAL STEWARDSHIP

As children’s sense of belonging and contributing develops, they begin to experience their role in relation to both community and place.

Throughout their learning in Kindergarten and beyond, children are given opportunities to learn about what it means to be a responsible, active citizen in the community of the classroom and the diverse communities to which they belong within and outside the school. It is important for children to understand that they belong to many communities and that, ultimately, they are all citizens of the global community.

Hand in hand with their experience of positive, caring, and respectful relationships, children develop an awareness of their connection to the world around them. When children have opportunities to make and maintain connections to others and to the world in which they live, they also develop a sense of place, which has a profound influence on their developing sense of identity. *Sense of place* refers to “the human experience in a landscape” and “grows from identifying oneself in relation to a particular piece of land on the surface of planet Earth” (The Sense of Place, 2015). Belonging and contributing to the social and cultural world they share with others becomes intertwined with a sense of belonging and contributing to their environment.

Children’s developing sense of place, combined with their awareness of caring for the environment, is sometimes referred to as “ecological identity”:

An ecological identity allows us to experience the earth as our home ground, and leaves us determined to live in honorable relationship with our planet.

(Pelo, 2009, p. 1)

The Kindergarten program provides numerous opportunities for educators to support children in developing an awareness of their relationships with the local environment, and of how those relationships can be mutually supportive (see “Learning in the Outdoors” in Chapter 1.3, “The Learning Environment”). It is important for educators to:

- ensure that children have extended interactions with the natural world;
- engage children in endeavours designed to appropriately enhance or restore land and place (e.g., establish and maintain a native species garden);
- support children’s inquiries involving natural materials and promote their use of various resources to further learning about the natural world.

Developing a sense of place and an awareness of our role and responsibility in caring for the planet and understanding our impact on the places where we live, work, and play are consistent with the following fundamental principles of Indigenous education:

1. *Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.*
2. *Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).*
3. *Learning involves recognizing the consequences of one’s actions.*

(First Nations Education Steering Committee, n.d.)

Educators who bring Indigenous peoples' environmental traditions into the classroom as contemporary ways of connecting with place, rather than as something from the past, enable children to develop relationships with the natural world that can enhance their sense of belonging and contributing.

SUPPORTING CHILDREN'S SENSE OF BELONGING AND CONTRIBUTING THROUGH COLLABORATION, EMPATHY, AND INCLUSIVENESS

The Kindergarten classroom is an environment in which children are affirmed as individuals and as members of a diverse community of learners. The learning and teaching program provides opportunities for children to express their ideas, discover their strengths and the unique contributions that they make, collaborate with others, and develop relationships. Educators observe the children throughout the day to determine how best to adjust the learning environment, contexts for learning, and pedagogical strategies to meet the particular needs of each child and to support children's learning through relationships.



EDUCATOR TEAM REFLECTION

When you come into our classroom community, you'll witness a shift in who is doing the talking. More children are communicating their ideas, opinions, and questions to each other, throughout the day. You will see us documenting the children's verbal and non-verbal communication through audio and video recordings, so that the children can revisit their conversations and think about what they want to do next. You will see them beginning to notice who they are, and getting to know each other better.

Children's sense of belonging and contributing grows as they:

- interact with others in many contexts and for many purposes;
- learn about themselves and their culture;
- develop the ability to empathize and get along with other living things;
- begin to understand that all people share similar needs, feelings, and aspirations;
- make decisions collaboratively and develop a sense of community;
- develop the ability to work and learn with others;
- develop an appreciation of the ways in which they can make contributions to groups and to group well-being;
- develop the self-confidence to stand up for themselves and others when they encounter biased ideas and discrimination;
- engage in learning opportunities that increase their awareness of others and foster respect for individual differences;
- develop an appreciation of diversity and an understanding of the concepts of equity, equality, fairness, tolerance, respect, and justice.

Understanding how social and cultural factors influence learning enables educators to support children from diverse backgrounds in developing their competence. The educators include learning opportunities that reflect the children's diverse backgrounds – for example, they introduce stories, poems, songs, dances, and games that reflect the children's backgrounds, and they have the children bring items from home into the classroom. They also make sure that children have opportunities to express or demonstrate their curiosity, their ideas and interests, and their accomplishments in various different ways.



EDUCATOR TEAM REFLECTION

We realized that our understanding of “begin with the interests of the children” had been limited to the *questions* that the children were asking. We began to listen more closely to *everything* the children had to say – including, for example, about what was happening at home and within their cultural community. This provided us with opportunities to explore the songs, stories, clothing, food, and celebrations that the children were excited about. We began to notice and name children’s learning about diversity and inclusion and about celebrating our differences.

DEVELOPING A SENSE OF BELONGING AND CONTRIBUTING THROUGH THE ARTS

In the Kindergarten program, the arts provide a vehicle through which children can express their growing sense of self and their interpretations of the world. The arts transcend any single subject or discipline. Visual arts, dance, music, and socio-dramatic play contribute in many ways to the development of children’s thinking and communication skills while enabling them to explore who they are and to experience the unique contributions that they make.

Providing children with opportunities to express themselves through the arts:

- develops decision-making skills;
- stimulates memory;
- facilitates understanding;
- develops skills in symbolic communication;
- promotes sensory development;
- encourages creative thinking;
- stimulates and develops the imagination;
- fosters empathy;
- promotes the development of relationships;

- builds identity, self-esteem, and a sense of accomplishment;
- supports self-regulation;
- promotes a sense of wonderment;
- fosters understanding of various cultures as well as of ways to express and explore their own culture;
- supports the development of literacy and mathematics.

To watch a child completely engaged in an arts experience is to recognize that the brain is on, driven by the aesthetic and emotional imperative to make meaning, to say something, to represent what matters.

(Booth & Hachiya, 2004, p. 1)

Creativity does not occur in a vacuum. Art making is a process requiring both creativity and skill, and it can be cultivated by establishing conditions that encourage and promote its development. Teachers need to be aware that the atmosphere they create for learning affects the nature of the learning itself. A setting that is conducive to creativity is one in which students are not afraid to suggest alternative ideas and take risks.

(The Ontario Curriculum, Grades 1–8: The Arts [2009], p. 19)

All areas of the arts are of equal importance for children’s cognitive, social, and emotional development. Children need ready access to a wide variety of materials, resources, and experiences that offer different ways for them to demonstrate their thinking and learning. The creative process is the focus of the arts. Children’s thinking is revealed when they negotiate where, why, and how materials are arranged and organized and when they try out new theories and ideas. Children need time and opportunities to revisit materials and experiences in order to consolidate or further their learning. Carefully planned experiences and organization of materials in the learning environment enable children to explore visual arts, music, drama, and dance throughout the day. Various learning contexts should be available where children can apply and extend their

learning, both in the classroom and outdoors – including in the dramatic play area, the art studio, the school grounds, the blocks, and areas in which sand or clay can be used.

It is important for young children to see themselves as artists, sculptors, musicians, dancers, and actors. When arts experiences are embedded in meaningful contexts, children become deeply involved in the artistic process. Generic art activities – for example, having children work with pre-cut shapes – should be avoided: they are rarely effective because their focus is narrow and they provide only limited assessment information about the child’s level of understanding. Children need time to imagine, create, and explore in a non-threatening environment where they know that their individual choices and responses are respected and valued.



EDUCATOR TEAM REFLECTION

We had been thinking about Dr. Jean Clinton’s “C:D:C ratio” in our practice. What were we spending more time on in our interactions with the children – *correcting*, *directing*, or *connecting*? We began to realize that when we gave the children generic crafts to do – the kind where everyone makes the same thing from pre-cut shapes – all of our interactions were *directions* about what to do and *corrections* to do the task properly. There was very little opportunity to make a meaningful connection when the children were engaged in these crafts! We began to offer various art materials – materials that weren’t geared to a specific product – and we were amazed at the number of opportunities that opened up for us to make meaningful connections with the children. We discovered more about individual children, their interests and schema and so much more, as we asked open-ended questions and really listened to their responses.

Dramatic play enables children to explore personal narratives and experiences. Educators provide various opportunities and contexts for children to play out their narratives, such as the following:

- a fishing trip
- riding on the elevators in their building
- presenting an innovation on a television show
- an imaginary or lived trip on a bus, sled, train, or airplane
- an outdoor experience
- a car chase scene
- an imaginary castle scene

Children who may be experiencing stress or trauma can express their emotions and thoughts through drawing and dramatizing.¹¹ Providing children with varied opportunities to express themselves through the arts also supports and facilitates their diverse learning styles, interests, and abilities. It promotes the development of self, builds a sense of belonging and contributing, and furthers growth in all areas of learning.



QUESTIONS FOR REFLECTION: BELONGING AND CONTRIBUTING

- In what ways are we integrating social and emotional learning in our program?
Are we able to observe children’s social and emotional growth in learning, and to review our documentation of it with the children?

11. Educators need to be aware of relevant board policies and guidelines in the event that a child discloses information that may indicate abuse or neglect (e.g., the obligation to report; guidelines regarding the educator’s initial response to the child).

- What strategies do we use to ensure that there is time in the day to interact with both individual children and small groups of children in their play?
- How do we create opportunities for children to interact with each other, with older students, and with other adults? Have we planned for such interactions to take place in a range of different contexts, to provide children with a variety of experiences?
- Are the children involved in resolving problems and conflicts? If not, why not?
- In what ways does our learning environment support and enhance our relationships with the children and also with their families?
- How does our program help children develop a sense of place and a relationship with the natural world?
- How do we communicate our expectations to the children in a way that is more “connective” and less “directive”?

2.2 THINKING ABOUT SELF-REGULATION AND WELL-BEING

DESCRIPTION OF THE FRAME

This frame encompasses children’s learning and development with respect to:

- their own thinking and feelings, and their recognition of and respect for differences in the thinking and feelings of others;
- regulating their emotions, adapting to distractions, and assessing consequences of actions in a way that enables them to engage in learning;
- their physical and mental health and wellness.

In connection with this frame, it is important for educators to consider:

- the interrelatedness of children’s self-awareness, sense of self, and ability to self-regulate;
- the role of the learning environment in helping children to be calm, focused, and alert so they are better able to learn.

What children learn in connection with this frame allows them to focus, to learn, to respect themselves and others, and to promote well-being in themselves and others.

➡ For a wide range of practical examples of how children and educators interact to make thinking and learning about self-regulation and well-being visible, in connection with related overall and specific expectations in the Kindergarten program, see the expectation charts in Chapter 4.4.

SELF-REGULATION: WHAT ARE WE LEARNING FROM RESEARCH?

Self-regulation is central to a child’s capacity to learn. It is “the cornerstone of development and a central building block of early learning” (Pascal, 2009a, p. 4). Children’s ability to self-regulate – to set limits for themselves and manage

their own emotions, attention, and behaviour – allows them to develop the emotional well-being and the habits of mind, such as persistence and curiosity, that are essential for early learning and that set the stage for lifelong learning. Self-regulation involves attention skills, working memory, and cognitive flexibility – qualities that provide the underpinning for essential skills needed throughout life, such as planning and problem-solving skills (Pascal, 2009a, p. 4). Self-regulation skills also allow children to have positive social interactions and help establish constructive patterns of behaviour that will be useful to them throughout their lives (Ponitz et al., 2009).

Research has shown that the ability to self-regulate is essential to the development of learning skills and work habits (Baumeister & Vohs, 2011), which are critically important to student success throughout the grades. The foundations for those skills and habits, identified in *Growing Success* (Ontario Ministry of Education, 2010, pp. 9–14), are rooted in early childhood and are supported through the Kindergarten program.

Dr. Stuart Shanker (2013b, p. xiii) identifies the following as six critical elements required for “optimal self-regulation”:

- when one is feeling calmly focused and alert, the ability *to know* that one is calm and alert
- when one is stressed, the ability to recognize what is causing that stress
- the ability to recognize stressors both within and outside the classroom
- the desire to deal with those stressors
- the ability to develop strategies for dealing with those stressors
- the ability to recover efficiently and effectively from dealing with those stressors



READ: Dr. Stuart Shanker, *Calm, Alert and Happy* (2013)

VIEW: Video clip – “What strategies and practices are educator teams repeating, rethinking and removing to support children’s self-regulation? What does self-regulation look like and sound like?”

Domains of Self-Regulation

Dr. Shanker discusses the development of self-regulation in five domains: biological, emotional, cognitive, social, and prosocial.¹² The following overview is adapted from Shanker’s *Calm, Alert and Learning: Classroom Strategies for Self-Regulation* (2013b, pp. xii–xvi) and his “The Development of Self-Regulation” (2010).

Biological: “Biological (or physiological) self-regulation” refers to the ability to manage responses that are governed by the nervous system and affect level of energy or “stage of arousal”, on a continuum from sleep or drowsiness, through being calmly focused and alert, to being overstimulated or “flooded”. Self-regulation in this domain can be described as the ability to “attain, maintain and change one’s level of energy to match the demands of a task or situation” (Shanker, 2013b, p. xiii, citing Baumeister & Vohs, 2011). Responses that affect level of energy vary widely from person to person and from situation to situation. For example, some children may be overwhelmed by a level of sensory input, be it auditory, visual, or related to touch or the proximity of others, that would not disturb most other children. Some children may be extremely sensitive to noise (e.g., buzzers or bells); others may find it difficult to sit for longer than a

12. Note that the domains of self-regulation listed here are related but not identical to the domains of development discussed later in this chapter and elsewhere in this document.

few minutes. Behaviours such as humming or chewing things, fidgeting (e.g., tapping, jiggling), or constantly moving may indicate that the child is trying to remain or become calm, alert, and focused – in other words, that the child is attempting to self-regulate.

Emotional: “Emotional self-regulation” refers to the ability to monitor and modify intense emotional responses, feelings, and moods. For example, children self-regulate when they are able to recover from feelings of embarrassment, disappointment, hurt, anger, or frustration and carry on with confidence and a positive disposition.

Cognitive: “Cognitive self-regulation” refers to the ability to monitor and modify behaviour related to mental processes such as memory, attention, the acquisition and retention of information, and problem solving. For example, children self-regulate when they are able to focus, sustain, and then switch their attention; sequence their thoughts; and ignore distractions.

Social: “Social self-regulation” refers to the ability to recognize, understand, assess, and act on social cues – in other words, to engage in and sustain social interactions. For example, children demonstrate social self-regulation when they respond appropriately to cues communicated through facial expression or tone of voice and when they play cooperatively with others.

Prosocial: “Prosocial self-regulation” refers to the ability to empathize with others and to demonstrate behaviours that lead “*toward* positive social activities” (Bronson, 2000, p. 86), including making friends and helping others. Prosocial self-regulation involves an ability to self-regulate in the other four domains. For example, a child who attends to another child who has fallen and hurt himself demonstrates *cognitive* self-regulation (in recognizing the urgency of, and shifting attention

to, an external event); *biological* and *emotional* self-regulation (in remaining calm enough to attend to the hurt child); and *social* self-regulation (in recognizing and understanding that a friend needs help and comfort), in addition to *prosocial* self-regulation (in acting on feelings of empathy and the desire to help a friend).

Biological, emotional, cognitive, social, and prosocial self-regulation and the ability to communicate with others are foundational to all forms of learning and have been shown to be best developed in play-based environments.

SUPPORTING THE DEVELOPMENT OF SELF-REGULATION

It has been shown that children’s ability to self-regulate is not enhanced by “compliance with external authorities”. According to researchers in the field,

it is about establishing one’s own internal motivation for adapting to, and understanding, emotional and social demands. In fact, for many children, requiring compliance undermines their own abilities to self-regulate.

(Pascal, 2009a, p. 4)

Self-regulation is a deep, internal mechanism that enables children as well as adults to engage in mindful, intentional, and thoughtful behaviours.

(Bodrova & Leong, 2008, p. 1)

 **VIEW:** Video clip – “Self-regulation is not about compliance with external authority”

Every child responds to incoming sensory stimulation and various challenges in his or her own way, and learns to manage these responses on an individual timetable. Being attuned to individual differences in children’s development of self-regulation – in the way each child manages sensory stimulation and responds to challenges – enables educators to establish the kind of nurturing relationships that strengthen children’s capacity for learning (see Chapter 2.1, “Thinking about Belonging and Contributing”).

The abilities of children to regulate their own emotions, behaviours, and attention increase over time with maturation, experience, and responsive relationships. Supporting self-regulation is a central focus of early development because self-regulation skills lead to physical, social, emotional, behavioural, and cognitive competence.

(Ontario Ministry of Education, 2014b, p. 2; emphasis added)

Some children will have begun to develop self-regulation skills before coming to Kindergarten, but many will not. Through their interactions with peers and adults in connection-building relationships in the classroom, however, children will begin – or will continue – to develop self-awareness and a stronger sense of self. As part of this process, they will monitor and adapt their own emotions and behaviour, and become aware of and accommodate the thinking and feelings of others. In order to effectively support the development of self-regulation, it is important for educators to observe each child’s development and to encourage and support the child in individualized ways. To do this, educators need to understand what self-regulation looks and sounds like. For example, children may look away in the midst of an interaction, or they may become distracted from what they are doing, but they will often return their attention to the interaction at hand in a short time. Intervening too soon to draw the child back into the moment may interfere with, rather than support, the child’s progress towards self-regulation. Educators who understand this are able to give the child a little time.

In an inquiry stance, the educator observes and listens, and supports the child's development by noticing and naming when the child is demonstrating self-regulation – for example, by saying, “I noticed that you refocused. How did that help you?” Educators report the benefits of waiting before they intervene to help children manage behaviour and emotions – they have seen that “stepping back” makes room for the gradual emergence and consolidation of children's ability to self-regulate. When educators notice that a child's inability to focus or to manage emotions persists over time, they consult the parents and, where appropriate, the school's special education support team, to determine whether a physical issue, such as an auditory processing problem, may be involved.

 **VIEW:** Video clips – “Rethinking and repeating supporting self-regulation – one educator team's reflection”

“Listening in on children sharing their inquiry”

READ: Dr. David Tranter and Dr. Donald Kerr, “Understanding Self-Regulation: Why Stressed Students Struggle to Learn”, *What Works? Research into Practice* (February 2016)



EDUCATOR TEAM REFLECTIONS

Previously, we spent much of our day regulating and managing the children's behaviour. We felt that some learning was happening, but it wasn't rich. The children were not revealing their ideas or wonderings. We didn't have a chance to talk with them or get to know what they were thinking. It was a situation where the educator owned the choices and the learning. Now, we provide the children with choice, and they are so much more engaged – we are not managing their behaviours. *Choice* is so important to their self-regulation, and we can see that their learning is much richer now.

In our classroom today, we hear the children's voices much more than our own. We are using more open-ended activities that spark children's thinking. More of our discussions and questions are led by the children. At first, it is scary to let go and step back. When you

do step back, though, you can see how engaged the children are in what they are doing. When you see how much *authentic learning* is going on, it gives you the confidence to step back more often.

X MISCONCEPTIONS about Self-Regulation

- That children are able to self-regulate when they enter Kindergarten
- That children are self-regulating when they are sitting still with their legs crossed
- That when children look away, an adult needs to remind them to keep focused
- That self-regulation is the same as compliance
- That the role of the educator is to manage children's behaviour

THE LEARNING ENVIRONMENT AND SELF-REGULATION

A regimented classroom climate, in which all children are required to do the same thing at the same time in the same way, reduces feelings of control and discourages self-regulation.

(Bronson, 2000, p. 234)

Providing children with choice in the learning environment is a key to supporting their emerging ability to self-regulate. When children have access to a variety of materials, tools, and spaces in the classroom, they gradually learn to select the ones that provide stimulation or a calming effect, as needed.

In addition, an environment of caring, kindness, and cooperation in the classroom supports the development of social and prosocial self-regulation in children. Initially modelled by the educators, practices such as making time for conversation, checking in with one another, helping out, and solving problems with friends become part of the culture of the classroom and of the accepted behaviour of the children.



EDUCATOR TEAM REFLECTION

We noticed that the children were getting to know the classroom and make it theirs. They were choosing what they needed when they needed it! We realized that this was happening regularly when we reviewed our notes over the last month and found these:

- Devi was tired so she went to the quiet space to have a nap.
- Michael wanted help to focus at circle time so he selected a squishy ball to bring with him.
- Zheng felt overwhelmed so she put on noise-cancelling headphones and read a book.
- Luca was upset so he got the pinwheel and blew on it until he felt better.
- It was circle time, and Ahmed took a few deep breaths to ready himself.



QUESTIONS FOR REFLECTION: HOW DOES THE LEARNING ENVIRONMENT SUPPORT THE DEVELOPMENT OF SELF-REGULATION?

- In what ways can the learning environment foster the development of self-regulation?
- What supporting materials (e.g., exercise balls, exercise mats, squishy balls, pinwheels, noise-cancelling headphones), strategies (e.g., visual schedule, yoga, breathing exercises), and options in terms of the physical environment (e.g., flexible lighting, a calming space or quiet space, a space for movement, a sensory space) are available to help children achieve and maintain a calm, alert, and focused state?
- Are the children able to make choices about the materials they use? About the learning areas they will visit? About when they have their snack or whether or not they need to rest or, conversely, to be stimulated?

- Is a visual schedule provided in the classroom to allow children to prepare themselves for what comes next in their day?
- What do we observe in individual children that helps them stay calm and alert?
- How do individual children regain a calm and alert state after experiencing a stressor or having an intense emotional response?
- What kinds of experiences in the classroom tend to promote a state of calm, alertness, and focus in a child? What kinds of experiences tend to detract from this state?
- How does the learning environment promote the development of empathy?

WELL-BEING: WHAT ARE WE LEARNING FROM RESEARCH?

Research suggests that children who experience a greater sense of well-being are more able to learn and assimilate information in effective ways; more likely to engage in healthy and fulfilling social behaviours; more likely to invest in their own and others' well-being and in the sustainability of the planet as they take up their social, professional and leadership roles in adulthood.

(Awartani, Whitman, & Gordon, 2008, p. 54)

Well-being addresses the importance of physical and mental health and wellness. It incorporates capacities such as self-care, sense of self, and self-regulation skills.

(Ontario Ministry of Education, 2014c, p. 7)

Promoting the healthy development of all children, as well as enabling all children to reach their full potential, is a priority for educators across Ontario. Children's health and well-being contribute to their ability to learn, and their learning in turn contributes to their overall well-being.

Educators play an important role in promoting children’s well-being by creating, fostering, and sustaining a learning environment that is healthy, caring, safe, inclusive, and accepting. A learning environment of this kind supports not only children’s cognitive, emotional, social, and physical development but also their mental health, their resilience, and their overall state of well-being. All this helps children focus on learning and achieve their full potential in school and in life.

Determinants of Health

The World Health Organization (WHO) declared in the preamble to its constitution, which came into force in 1948, that health is “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity”. Today, Health Canada includes the following, among other factors, in its list of “determinants of health” – that is, factors and conditions that can have a significant influence on a person’s health:¹³

- family income and social status
- education and literacy
- physical and social environment
- culture (customs and traditions) and beliefs
- personal (family) health practices and coping skills
- availability and quality of health services
- gender

Together, such factors affect an individual’s overall well-being. They influence not only whether a person stays healthy or becomes ill but also the extent to which the person possesses the physical, social, and personal resources needed to identify and achieve personal aspirations, satisfy needs, and cope with the environment. These factors also have an impact on learning at all ages, and

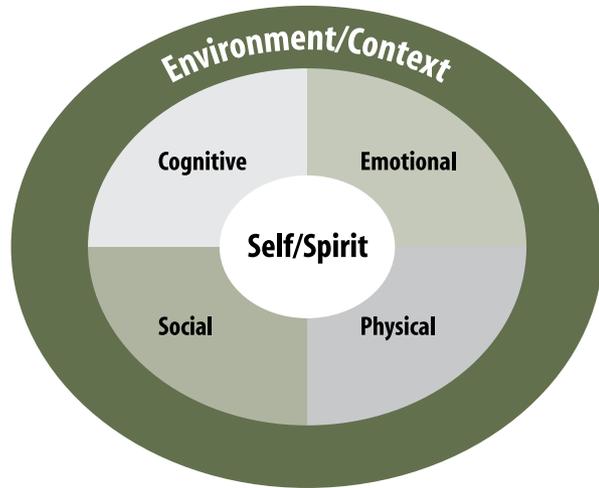
13. For detailed current information on determinants of health, see the website of the Public Health Agency of Canada, at www.publichealth.gc.ca.

particularly at early stages of development. Although children have little or no control over these factors, it is important to be aware of them as contributing elements in a child’s development and ability to learn. It is also important to recognize the value of personal strategies that can be learned and practised, starting early in life, to foster well-being in the face of stressful and challenging life circumstances.

DEVELOPMENTAL DOMAINS AS COMPONENTS OF OVERALL WELL-BEING

An educator’s awareness of and responsiveness to children’s cognitive, emotional, social, and physical development is critical to children’s overall well-being and ability to learn. A number of research-based frameworks, including those described in *Early Learning for Every Child Today: A Framework for Ontario Early Childhood Settings* (Best Start Expert Panel on Early Learning, 2007) and *Stepping Stones: A Resource on Youth Development* (Ontario Ministry of Children and Youth Services, 2012), identify developmental stages that are common to the majority of children from Kindergarten to Grade 12. At the same time, these frameworks recognize that individual differences, as well as differences in life experiences and exposure to opportunities, can affect development, and that developmental events are not specifically age-dependent.

The framework described in *Stepping Stones* is based on a model that illustrates the complexity of human development. Its components – the cognitive, emotional, physical, and social domains – are interrelated and interdependent, and all are subject to the influence of a person’s environment or context. At the centre is an “enduring (yet changing) core” – a sense of self, or spirit – that connects the different aspects of development and experience (p. 17).



Source: Ontario Ministry of Children and Youth Services, 2012, p. 17

Educators who have an awareness of a child's development take each component into account as part of the whole, with an understanding of and focus on the following elements:

- **cognitive development** – brain development, processing and reasoning skills, use of strategies for learning
- **emotional development** – emotional regulation, empathy, motivation
- **social development** – self-development (self-concept, self-efficacy, self-esteem); identity formation (social group identity, gender identity, spiritual identity); relationships (peer, family)
- **physical development** – physical activity, sleep patterns, changes that come with growth, body image, nutritional requirements

SUPPORTING DEVELOPMENT TO ENHANCE OVERALL WELL-BEING

Developing child and student well-being means supporting the whole child – not only the child's academic achievement but also his or her cognitive, emotional, social, and physical well-being.

(Ontario Ministry of Education, 2014a, p. 14)

In the knowledge that developmental domains are interrelated and interdependent and that overall well-being depends on healthy development in each one, educators recognize the importance of holistically supporting children's cognitive, emotional, social, and physical development in a variety of ways.

Cognitive development is enhanced when educators provide opportunities for children to:

- co-construct their learning, based on their questions and needs and things that pique their interest;
- contribute ideas and identify interests;
- experiment to find answers to their questions, try new things, and take risks;
- make their thinking and learning visible in a variety of ways.



VIEW: Video clip – “How does listening inform learning and make it visible? How do children co-construct the learning?”

Educators support children’s **emotional** development by providing them with opportunities to:

- identify feelings and emotions in themselves and others, explain why they might be feeling that way, and use words to identify the meaning of their own and others’ expressive language (e.g., body language, facial expression);
- practise kindness towards other people and all living things, show concern for their well-being, act with empathy and sympathy towards them, and practise including others;
- use strategies to help them manage strong emotions and regulate the way in which they express those emotions;
- develop a positive self-concept and sense of self-esteem;
- develop a “growth mindset” about learning (e.g., believe that they can develop their abilities if they work hard and persevere).

Children’s **social** development is supported when school boards, schools, and educators create and sustain a warm and supportive environment in which:

- children’s thinking and learning are valued;
- cooperation with others is modelled and promoted;
- open communication is modelled and encouraged;
- thoughtful decisions and the use of respectful words are valued;
- all children are given equal opportunities;
- bullying, harassment, violence, and physical punishment are discouraged, and when instances do occur, they are addressed;
- the diverse backgrounds and cultures of the children are respected (e.g., children’s first languages are brought into the classroom);
- strong and respectful relationships are nurtured and developed;
- children have opportunities to collaborate with peers and educators in various ways and in various contexts throughout the day.



READ: Dr. Jean M. Clinton, *The Power of Positive Adult-Child Relationships: Connection Is the Key* (2013)

VIEW: Video clips – “Quality of Interactions”

“Connecting vs. Directing”

“Growth Mindsets”

“Impact of Our View of the Child”

Physical development is promoted in children when they:

- reap the benefits of healthy schools (i.e., schools that promote healthy choices related to physical activity, healthy eating, learning in the outdoors, and other aspects of everyday living);
- are encouraged to take increasing responsibility for their own health and physical well-being (knowing when to eat, rest, and increase or decrease their level of activity);
- are given frequent opportunities to demonstrate and apply their knowledge and skills related to healthy eating and safety, and to share their learning about establishing and maintaining safe practices with their peers, family, and community;
- are safe from harm in the school and classroom environments, including the school grounds (e.g., when bullying-prevention strategies are in place; when materials and equipment used by children and educators are reliable and safe);
- can get to and from school safely (e.g., when the community is engaged in helping to ensure their safety).



VIEW: Video clip – “Another FDELK team’s visual flow. Thinking about self-regulation and a quiet time in the day”

READ: “Healthy Schools: Foundations for a Healthy School”

Children and students who have strong relationships and a positive sense of self – and who can understand and manage their own health and emotions – are in a better position to reach their full potential in the future. Their sense of well-being supports their learning because it makes them more resilient and better able to overcome challenges.

(Ontario Ministry of Education, 2014a, p. 14)

WHAT ARE THE SIGNS OF WELL-BEING AND A DEVELOPING SENSE OF SELF?

Overall health and well-being and a developing sense of self are evident in children who:

- are physically active and feel confident in their growing abilities;
- are increasingly aware of and able to make healthy choices to meet their basic needs (e.g., for food, sleep, physical activity, self-care);
- experience a sense of competence, autonomy, and agency as they participate, at their own pace, in various experiences and interactions throughout the day;
- are increasingly able to identify, monitor, and manage stress levels and engage in strategies for self-regulation (e.g., of emotions, attention, and behaviour);
- are increasingly able to take initiative, tackle challenges with enthusiasm and persistence, and cope with and adapt to changes, frustrations, and the unexpected in everyday living;
- are developing the ability to value their own unique identity;
- are increasingly able to recognize, value, and respect the unique identity and perspectives of others.

(Adapted from Ontario Ministry of Education, 2014c, pp. 32–33)

THE ROLE OF MENTAL HEALTH

Mental health touches all components of development. Mental health is much more than the absence of mental illness. Well-being is influenced not only by the absence of problems and risks but by the presence of factors, at the individual, family, and community level, that contribute to healthy growth and development. Educators help promote positive mental health in the classroom by providing children with opportunities to learn adaptive, management, and coping skills; communication skills; and relationship and social skills – the personal and interpersonal skills they need to develop resilience, a secure identity, and a strong sense of self. In the process, educators may also be able to identify children who need additional support and connect them with the appropriate services.

 **READ:** Ontario Ministry of Education, *Supporting Minds: An Educator's Guide to Promoting Students' Mental Health and Well-being* (2013).

What happens at school can have a significant influence on a child's well-being. With a broader awareness of mental health, educators can adopt instructional strategies that contribute to a supportive classroom climate for learning, build awareness of mental health, and reduce the stigma associated with mental illness. When educators take children's well-being, including their mental health, into account when considering instructional approaches, they help to ensure a strong foundation for learning. For example, when educators allow children to self-regulate – to cope with stressors, and recover – they are enabling them to develop resilience, a powerful protective factor with respect to positive mental health and emotional well-being.



EDUCATOR TEAM REFLECTIONS

If we focus on living skills and interpersonal skills with the children now, they will have better coping skills later in life ... We want them to be able to feel, and to know themselves. I think that's such a key piece in mental well-being.

Supporting the children as they develop coping skills – co-constructing the skills with them – is really important, because that way, they are using approaches that are authentic to them, that have meaning for them. And then, when they are feeling stressed, they will know what works for them, what they can do to help themselves.



VIEW: Video clip – “Supportive Learning Environment”



QUESTIONS FOR REFLECTION: IN WHAT WAYS DO WE SUPPORT CHILDREN AND THEIR FAMILIES IN FURTHERING THEIR OWN AND OTHERS' WELL-BEING?

- What are some of the characteristics and behaviours that indicate resilience in children (e.g., the ability to recover after experiencing difficulty or change)?
- In what ways do we accommodate children’s unique physical and emotional needs (e.g., the need for additional time and space for physical movement)? Are we providing a range of materials and using a range of strategies to meet children’s needs?
- Are we able to quickly access additional support within the school to respond to a child who is in need?
- Are we drawing on community support, as needed, to ensure children’s well-being?

- Are we promoting a “growth mindset” in the classroom? In what ways do we communicate to children that they can succeed if they persevere?
- In what ways are the children’s cultures, languages, and traditions being brought into the classroom?
- Are there certain aspects of well-being that call for enhanced attention because they are of particular relevance to the children in our class and/or to the students in the school community?
- Are families being consulted about ways of supporting the children’s sense of well-being and about ways of promoting their and their families’ well-being at home?

2.3 THINKING ABOUT DEMONSTRATING LITERACY AND MATHEMATICS BEHAVIOURS

DESCRIPTION OF THE FRAME

This frame encompasses children’s learning and development with respect to:

- communicating thoughts and feelings – through gestures, physical movements, words, symbols, and representations, as well as through the use of a variety of materials;
- literacy behaviours, evident in the various ways they use language, images, and materials to express and think critically about ideas and emotions, as they listen and speak, view and represent, and begin to read and write;
- mathematics behaviours, evident in the various ways they use concepts of number and pattern during play and inquiry; access, manage, create, and evaluate information; and experience an emergent understanding of mathematical relationships, concepts, skills, and processes;
- an active engagement in learning and a developing love of learning, which can instil the habit of learning for life.

What children learn in connection with this frame develops their capacity to think critically, to understand and respect many different perspectives, and to process various kinds of information.

➡ For a wide range of practical examples of how children and educators interact to make thinking and learning about literacy and mathematics visible, in connection with related overall and specific expectations in the Kindergarten program, see the expectation charts for this frame in Chapter 4.5.

See also the section “The Role of the Arts in Kindergarten” in Chapter 3.1 for important information related to this frame.

LITERACY BEHAVIOURS: WHAT ARE WE LEARNING FROM RESEARCH?

In the knowledge economy, memorization of facts and procedures is not enough for success. Educated workers need a conceptual understanding of complex concepts, and the ability to work with them creatively to generate new ideas, new theories, new products, and new knowledge. They need to be able critically to evaluate what they read, be able to express themselves clearly both verbally and in writing, and understand scientific and mathematical thinking. They need to learn integrated and usable knowledge, rather than the sets of compartmentalised and de-contextualised facts. They need to be able to take responsibility for their own continuing, life-long learning.

(OECD/CERI, 2008, p. 1)

“Literacies” is a broad term used to describe the development of the physical, emotional, social, creative, linguistic and intellectual means of communication among young children.

(British Columbia Ministry of Education, 2009, p. 29)

We know more about the capabilities of young children than ever before. There is much evidence demonstrating that children are becoming literate in a wide variety of ways (Wien, 2005; Luke, 2007; Dickinson & Neuman, 2005; Sulzby & Teale, 1991). Thinking about literacy in the broadest possible way is therefore critical to helping children develop their ability to understand and

communicate – for example, the ability to understand verbal and non-verbal aspects of communication (including emotional, social, and physical cues); to think critically about what they see, hear, and read; and to express themselves by using language in a variety of creative ventures. The development of this broad literacy in young children provides them with a strong basis for successful learning throughout their lives.

Literacy behaviours are evident in virtually everything we do, say, and represent. According to literacy scholar and educator Allan Luke, the challenge for today's students is that they are being asked to read not just the text, but “the world”. “Children need to [shape] and [master] a repertoire of capabilities” (Luke & Freebody, 1999, p. 2) to enable them to move beyond basic comprehension skills to understanding and using texts on several levels for a range of purposes in a range of technologies. To help meet this challenge, it is important for educators to give children many opportunities to use and develop literacy behaviours – for example, to use language to describe, to give reasons, to ask questions, or to negotiate – in a wide variety of contexts. It is equally important for educators to learn to use many “languages” both expressively and receptively, to broaden their understanding of what it means to be “literate”.

 **VIEW:** Video “Allan Luke: The New Literacies” (2007)



QUESTION FOR REFLECTION: HOW DOES THE LEARNING ENVIRONMENT ENHANCE CHILDREN'S ABILITY TO COMMUNICATE?

How does our learning environment extend the development of literacy learning beyond mastering the basics to include a repertoire of practices for engaging in literacy of all kinds?

CHILDREN'S PRIOR ENGAGEMENT WITH LITERACY OUTSIDE THE SCHOOL

The foundations of language development, literacy, and the capacity for relationship begin to be established at birth. Infants just a few hours old communicate by using facial expressions and responding to adult facial expressions and by using cries and other sounds that vary with context and need. Children continue to develop their ability to communicate, both non-verbally and verbally, through interaction with adults and children at home, in child care, and in the community before they go to school, and they do so in a wide variety of ways.

Children beginning school may demonstrate a prior knowledge of literacy from their daily experiences by, for example:

- asking questions and expressing their thoughts, feelings, and opinions;
- retelling or dramatizing familiar events or stories;
- saying “I knew it said ‘spider’ because I used the picture”, or “It’s a ‘T’, because it starts just like my name”;
- noticing and naming non-verbal communications (e.g., “I saw by her face that she was angry”).

In addition, before they begin Kindergarten many children may also be able to:

- talk about stories that they have read with a family member (e.g., provide predictions in answer to a parent’s questions, such as “Where do you think they might be going on the bus?” or “What do you think they will do when they get to the park?”);
- read a wide variety of materials such as environmental print (e.g., traffic signs, stop signs, street signs, logos, signs in stores and restaurants and on the subway or bus), children’s books and magazines, instructions, and labels on boxes and cans in the grocery store;

- write for a variety of purposes (e.g., shopping lists, notes to others, labels, recipes, instructions);
- use non-verbal communication to share thoughts, feelings, and emotions.

In any case, it is essential for Kindergarten programs to build on the knowledge and experiences that children already have when they come to school. It is also essential to keep in mind that children come to school with vastly different experiences and kinds of exposure to literacy. All young children need learning experiences that help them understand the world around them and enable them to develop their ability to communicate. It is therefore important for children to have rich and engaging learning experiences that are relevant to their lives and that provide opportunities for them to develop their capacity to listen, observe, and think and their ability to express themselves.

To help maintain reciprocal relationships between home and school, educators can encourage parents and other family members to continue to engage their children in literacy opportunities at home, and to share those experiences with the educators. Educators can communicate with children's families in various ways (for example, through telephone calls or e-mail, or through translators) about the importance of support from adults or siblings who listen and respond to what young children say, who read to them frequently, who have discussions with them, and who model reading and writing in any language. Listening to someone reading stories and other kinds of texts enables children to learn new words; to become familiar with the patterns, rhythms, and structures of a language; and to extend their experiences.

SUPPORTING THE DEVELOPMENT OF LITERACY BEHAVIOURS

Literacy is essential to enable a child to succeed in school and in later life. The educators should become familiar with the stages in the process of learning to read and write, and should use this knowledge when thinking about possible literacy experiences for young children and when observing and assessing their learning to help them continually acquire literacy skills.

All children can benefit from classroom experiences that focus on literacy development. To maintain high expectations for all children, it is important for the educators to build on a child's strengths and focus on what the child is already able to do – that is, to see all children through an “asset lens”. It is also important for the team to make adjustments to learning opportunities on the basis of ongoing observation, conversations, documentation, and analysis of their observations in order to maintain a zone of proximal development for the child.

Literacy behaviours are evident in virtually every aspect of human behaviour. Young children may demonstrate literacy behaviours by, for example:

- sharing their ideas, feelings, interests, and experiences;
- looking at name tags to figure out who class visitors may be;
- asking and responding to questions;
- noticing letters and words no matter where they appear;
- showing an interest in print;
- initiating, responding to, and engaging in both verbal and non-verbal communication with others.

In the earliest stages of literacy development, children:

- ask simple “what” and “where” questions;
- mimic the reading process;
- begin to understand what reading is and how it works;
- learn that what they say can be written down;
- use simple vocabulary to describe things;
- engage in pretend play that includes language;
- listen to stories.

As they assimilate this understanding, children:

- learn to pay attention to the way print and books work;
- learn that printed letters and words represent the sounds and words of oral language;
- listen to each other with attention and engage in give-and-take conversations (turn taking);
- become aware that some words rhyme or start or end in the same way, and thus begin to develop phonological awareness;
- begin to share their ideas and responses to texts in a variety of ways;
- learn that writing can communicate a message;
- begin to explore different purposes for writing;
- represent their thinking graphically by drawing, painting, dramatizing, sculpting, building, and gesturing;
- express their thoughts and ideas with increasingly extensive and specialized vocabulary;
- ask and respond to questions that demonstrate and require predicting, making inferences, connecting, and critiquing.



VIEW: Video “Strategies to support oral language development”

READ: Dr. Shelley Stagg Peterson, “Supporting Students’ Vocabulary Development through Play”, *What Works? Research into Practice* (February 2016)

In their written representations children demonstrate literacy behaviours by, for example:

- including pictures and symbols;
- matching spoken words to written words;
- using familiar or high-frequency words;
- using approximate spellings of words, based on their ability to hear, identify, and manipulate sounds (phonological and phonemic awareness) and on their knowledge of letter-sound correspondence (phonics);
- leaving spaces between words, thus showing an understanding of the concept of words;
- revealing a developing sense of “voice”.

When thinking about possible learning experiences, educators consider children’s cognitive, communication/language, physical, social, and emotional development. The most successful learning takes place when the educators provide literacy experiences that are based on an understanding of the child’s total development. For example, the child may become frustrated and discouraged if the literacy learning is beyond his or her cognitive ability or if the demands of the learning call for greater social or emotional maturity. It may be necessary to scaffold some aspects of the learning experience to make it suitable for particular children. The educators therefore need to document the strategies used for communication by and among children, determine a learning opportunity that is appropriate for the child, and decide when and how to intervene to make thinking and learning visible to both the child and the educator.

Children need to experience language and literacy concepts in depth through repeated investigations over a long period of time. Such concepts include the following:

- Letters are used in different ways (e.g., to make words; to create patterns; to label things; to identify something in combination with numbers, such as an apartment number [Apt. 2A]).
- Letters that appear in personal names appear also in other words. They may be pronounced in the same way or in a different way.
- Vocabulary used in conversation may differ from vocabulary used in books.
- Readers use the words, the illustrations, and their prior experience to make sense of text.
- Readers use different strategies (e.g., look at the picture, look for a little word in a bigger word, use letter-sound recognition, think about the context) to decode words.
- Some words that are used frequently in speaking, reading, and writing are words that everyone has to know from memory.
- What a person thinks and says can be written down for other people to read.
- Writers use different sources to support their writing (e.g., word walls; environmental print; help from a friend; their own knowledge of letters, sounds, and words they have in their own memory).
- Speaking and listening involve respect and reciprocity in order to be satisfactory for each person involved.

It is important that learning experiences in language and literacy allow children to see themselves as individuals who talk, listen, read, write, and view media texts, whether the experiences are intended for small groups or individual children or for use in the classroom or the outdoors. Children need to understand that all forms of communication help them to make sense of their world.



EDUCATOR TEAM REFLECTION

We noticed that, when we taught a whole class about phonological and phonemic awareness, we were not really meeting anyone's needs. The children who were capable readers didn't require this level of support, and the children who needed more help with hearing sounds in words were not engaged in the whole-group experiences. We wondered if they were learning what we thought we were teaching.

So we rethought our approach. We began to say different things to the children. We would draw their attention to the sounds in words, pausing to say, "I am listening to the sound in that word here in the middle" (pointing to the word). Rather than creating a series of tasks, we used think-alouds to model the process of figuring out the sounds in words.

This different approach gave us the opportunity to work with children either individually or in a small group that needed this level of support with phonological and phonemic awareness. We worked with children by using their names and magnetic letters in small groups, and were able to see a shift in their thinking and growth in their ability to hear and identify sounds in words. We agreed to continue to monitor one of the children who had had a number of ear infections and to maintain close contact with the family.



QUESTIONS FOR REFLECTION: DECISION POINTS

- Why have we chosen this learning for this child at this time in this context?
- What is the impact of our action(s) on the child's learning?
- How will we document the impact of our decision on the child's learning?



READ: Dr. Janette Pelletier, "Supporting Early Language and Literacy", *What Works? Research into Practice* (October 2011)

Understanding the Importance of First Languages

The language worlds of young immigrant children are rich and varied. They do not enter the classroom as blank language slates. ... [T]hey arrive in the classroom as active language learners and users.

(Chumak-Horbatsch, 2012, pp. 3, 24)

It is important for educators and children's families to work together to support the continued development of a child's first language. Educators can encourage families to continue to use their own language at home as a foundation for language and literacy development in English – for example, family members can tell or read stories to their children in their own language. It is also important to find opportunities to bring children's first languages, including sign language, into the classroom – for example, by reading dual-language books in class or inviting family members or other speakers of the language in the community to act as resources. Knowing about one's heritage and culture reinforces not only the value of maintaining the first language but also the development of a positive cultural identity and an increased sense of self-esteem and security.

The following are some additional reasons for children to continue to develop proficiency in their first language:

- Continued use of the first language allows children to develop age-appropriate vocabulary related to their knowledge of the world around them without having to wait until they have learned enough English to engage with such topics.
- A rich store of knowledge gained in the first language will transfer readily into the second; for example, it is much easier for children to learn vocabulary connected with the ways in which certain objects “match” if they already know the vocabulary in their first language.
- Reading and storytelling in the first language – including languages with non-alphabetic writing systems – strengthen children's understanding of fundamental and universal literacy processes. For example, children learn

that thoughts and ideas can be written down, and that when they are written down they can be read by others. When listening to storytellers, children absorb the structure of the language, and this knowledge can then help them to make sense of unfamiliar written texts.

- Children who see their previously developed skills acknowledged in school are more likely to feel confident and take the risks involved in learning in their new environment.
- Children can see English as an addition to their first language, rather than as a substitute for it.
- Children who know another language have already learned the important lesson that words are not the things or actions themselves but represent those things or actions. Knowing this results in mental flexibility and makes it easier for children to acquire further languages.
- All children who continue to develop a strong foundation in their first language as they learn other languages are well prepared for participating in a global society.

Using Critical Literacy to Develop Children's Critical Thinking

Preparing young children to be literate in their fast-paced, technological and multiple text world requires educators to reflect upon and challenge their own beliefs of literacy. The learning of functional literacy skills is important, but it cannot overshadow the opportunities presented from incorporating critical literacy pedagogy.

(Harwood, 2008, p. 9)

In recent years, critical literacy has increasingly been seen as a skill that will enable children to navigate a text- and media-saturated world in order to meet the challenges of an ever-more-complex society. Critical literacy involves looking beyond the literal meaning of a text in order to analyse and evaluate the text's complete meaning and the author's intent. It is considered an essential skill based on the awareness that language, including literacy, is a key means through which we construct, understand, and express our world

view – that is, our view of ourselves and of others (Luke & Freebody, 1997). It cannot, therefore, be seen as “a piece of knowledge” but must become a central approach, or a stance or “culture of thinking” (Hadjioannou & Fu, 2007, p. 47), in early years classrooms.

Proponents of critical literacy embrace the notion that children need both basic literacy and critical literacy to help them come to terms with the many forms and types of text that surround them. For this to happen, children must see their classroom as a place where they can safely ask questions, examine their own and others’ viewpoints, clarify their thinking, and take a stand on the issues and relationships that are important to them and their future. A learning environment that is respectful and that is co-created with the children promotes the development of skills such as risk taking and inquiry that are fundamental to critical literacy and critical thinking.

 **VIEW:** Video “Co-constructing and negotiating the learning environment – including the children’s voices and ideas”

Young children have proven time and time again that they are capable and competent in discussions. They have shown themselves to be willing to participate in conversations about topics that are meaningful to them and that have an impact on their lives. It is sometimes the adults who feel challenged when approaching “difficult” issues with young children, perhaps because they feel uncertain about how to talk about such topics with young children. In a Kindergarten classroom, use of a broad range of “languages” can engage children in exploring and examining issues such as bias, point of view, fairness versus unfairness, and the related equity and social justice concepts that naturally arise, while acknowledging that some issues may be more sensitive for some children than for others.

Keeping all these considerations in mind, educators can provide multiple opportunities for children to develop critical literacy skills by:

- providing entry points for discussion of the children’s questions and wonderings;
- reading aloud with the children and asking questions to stimulate discussion;
- noticing and naming behaviours in the classroom that can provoke discussion (e.g., “We’ve noticed that more boys than girls play with the blocks. Why is that? What can we do about it?”).

For example, after reading about a social issue that is important to the children, the educators may ask questions to focus and scaffold discussion, such as, “Someone wrote this story. Who do you think it’s written for?”; “Let’s look at it from the point of view of J. ...”; “Whose voice is missing?”; “How could the story be told differently?” By engaging children in such discussions, and encouraging them to ask questions, educators provide them with opportunities to question their understanding of issues that arise in the classroom, in a storybook, or among their classmates. Such discussions can take place not only during a read-aloud or shared or guided reading but also in other contexts where similar issues arise, such as in the blocks area or at the sand table.

 **READ:** Vivian Vasquez, “Using the Everyday to Engage in Critical Literacy with Young Children”, *New England Reading Association Journal*, 43 (2) (2007), 6–11

VIEW: Video “Jerome Harste and Vivian Vasquez. Critical Literacy”

LITERACY LEARNING THROUGHOUT THE DAY

The development of literacy through literacy behaviours is not limited to a particular time in the day. Literacy learning is incorporated throughout the day – it can be made visible, or explicit, to the children in any context, and can be observed by the educators at any time.

By focusing on literacy behaviours, educators can find many experiences throughout the day that can be used to develop children's literacy. The literacy behaviours of using language to describe, to give reasons, to ask questions, and to negotiate are observable in multiple contexts – for example, negotiating during a block construction, discussing plans at a sand table, describing intentions while painting, asking questions during a conversation, giving reasons for moving an object to another table, modelling behaviour during a read-aloud, or discussing options during interactive writing with a small group.

The educator team members play a critical role in engaging children in literacy behaviours throughout the day by creating a supportive environment (including varied contexts and materials) for using language throughout the learning areas in the classroom. The following are some examples of ways in which the educators can engage the children:

- providing frequent opportunities to listen to poems, songs, and rhymes and to read stories and non-fiction texts together by noticing and naming specific literacy behaviours (e.g., “Isabel, I notice that you put periods at the end of your sentences. That is what good writers do.”)
- asking the children questions that elicit descriptions or explanations of their thinking processes (e.g., “Why do you think that ...?”; “What should we do next ...?”)
- asking questions that help the children make connections between what they already know and what they are seeing, reading, or learning at the moment
- encouraging the children to talk about what they notice or give reasons for what they prefer

- asking questions that encourage discussion and/or negotiation between the children (e.g., discussion of reasons why a block tower fell, negotiation about taking turns reading a picture book)
- inviting children to pose their own questions and/or to investigate the ideas that they are proposing
- modelling beginning reading and writing strategies by “thinking aloud” in all areas of the classroom; for example, at the sand table or in the blocks area, or during read-alouds, shared or guided reading experiences, or interactive writing experiences
- showing the connection between talking and writing in practical examples that arise from inquiries that the children are pursuing (e.g., turning a list of items they are discussing into a written list)
- incorporating literacy materials in all areas of the classroom to help the children see that reading and writing, and talking about them, are all meaningful aspects of their daily lives
- including the children in negotiations about choosing literacy materials that are interesting to them
- giving the children time to explore their experience of language throughout the day rather than at a specific time in the day

In order to provide meaningful literacy experiences for the children, the educator team members also do the following:

- discuss and reflect on the impact of their teaching approaches throughout the day
- observe the children's literacy behaviours, document them, and analyse the documentation
- regularly review the pedagogical documentation (e.g., watch videos to check for progress)
- determine where to go next in the learning on the basis of observations of the children's interests, strengths, and areas for improvement (assessment *for* learning)

Children will represent their thinking in various ways – for example, by writing or drawing on paper, by using materials such as blocks or sand, or by using electronic media such as applications on tablets where they can take photos and add their own text to accompany them.

Generic language activities – for example, having children complete worksheets – should be avoided: they are rarely effective because their focus is narrow and they provide only limited assessment information about the child’s level of understanding.

 **VIEW:** Video clips – “Literacy as a whole class community – Creating a community of thinkers and readers; Examples of gradual release of responsibility; Making connections between oral language, reading, and writing”

“Rethinking the learning environment to support literacy – Co-constructing the learning environment with the children”

READ: “The Third Teacher: Designing the Learning Environment for Mathematics and Literacy, K–8”, *Capacity Building Series* (July 2012)

Making Decisions on Level of Support

In order to make thinking and learning more visible to the child and to others, educators have shifted away from considering that “gradual release of responsibility” for learning takes place at a specific time in the day; instead, educators have moved towards thinking about the “level of support” that the child or group of children requires, and then finding an appropriate context in which to offer the support. For example, in the case of literacy learning, the

responsibility for learning about an aspect of literacy could be gradually released to children at any time in the day, such as when the children are playing with blocks or engaged in an inquiry about worms. In other words, modelled, shared, guided, or independent learning opportunities are provided according to the level of support that the learner needs, regardless of the context in which the learning is taking place.

The provision of appropriate levels of support does not always unfold in a linear way from modelled through to independent learning contexts – for example, educators may use a shared learning context to give support to children who bring a significant level of prior knowledge to their learning. In the case of literacy learning, the educators can determine the level of support needed by the children by observing what the children already know. The educators can then use a variety of levels of support throughout the day for individual children, small groups, or large groups, and in learning areas inside the classroom or in the outdoors.

Educators make decisions about the provision of appropriate levels of support many times throughout the day. The analysis of the pedagogical documentation is critical to the decision-making process. Educators collaborate with each other and with the children to analyse their observations, and then negotiate the context and timing of learning opportunities with the children. Often, as a result, the same child may receive different levels of support in different contexts.

Decisions on the level of support needed are also based on the level of development of each child. The goal is to offer support within the zone of proximal development for that child – at a level that makes the task neither too challenging nor too easy – and to provide the scaffolding that will enable the child eventually to demonstrate the learning independently.

 **VIEW:** Video clips – “Literacy as a whole class community – Creating a community of thinkers and readers; Examples of gradual release of responsibility; Making connections between oral language, reading, and writing”

“How are educator teams analyzing their observation and documentation to inform learning in play?”

 For more information about pedagogical documentation, see Chapter 1.4: “Assessment and Learning in Kindergarten”.

 **QUESTIONS FOR REFLECTION: DECISION POINTS**

- Why have we chosen this learning for this child at this time in this context?
- How will we revisit the documentation with the child, and include him or her in decisions about where to go next in the learning?

 **READ:** “Pedagogical Documentation”, *Capacity Building Series, K–2* (October 2012) “Observation, Documentation and Interpretation”, Early Learning web page

Educators use their professional judgement when selecting appropriate tools to help in decision making about next steps and level of support for children. Developmental continua and learning trajectories are common observational tools used by educators. For example, to help make decisions about how much support to provide in reading, educators can gain insights into children’s reading by using an observational tool that places emphasis on the process, since the

process can be as important as the result, particularly for children who have gained some experience in reading (Clay, 2000).

 **EDUCATOR TEAM REFLECTION**

We had participated in a professional learning session where we were trained to use an observational tool to take notes on children’s reading behaviours. Initially we took these notes and then filed them away without much analysis. But once we started analysing them in some depth, we began to understand the value of the information and insights that this tool could provide, and we started using the tool on an ongoing basis for decision making. For example, from the information revealed in our notes, we discovered more about how the children were using such strategies as rereading and cross-checking to help them understand a text. We were then better able to notice and name the strategies that the children were using and to use that information to scaffold strategy use in the children’s other reading experiences.

LITERACY AND THE LEARNING ENVIRONMENT

Educators and children co-create a responsive literacy learning environment in all learning areas. Together they pose questions, share theories, communicate ideas, and reflect on their observations throughout the day. An effective literacy learning environment in Kindergarten is responsive to the needs, interests, and wonderings of the children, builds on their strengths and preferences, and provides opportunities for them to share their thinking in many different ways. When educators are aware of and able to understand and respond to the many “languages” children use to communicate, they give every child a “voice”.

In Kindergarten, literacy learning thrives in an environment that:

- fosters positive attitudes and beliefs (a “growth mindset”) about learning and literacy development;
- involves co-construction of a safe place for expressing opinions, questioning, taking risks, innovating, and establishing agreed-upon ways of learning together so that every voice is heard;
- ensures that all learners see themselves – their interests, values, cultures, and perspectives – represented in the learning environment;
- provides a variety of ways for children to communicate their thinking and learning;
- includes spaces where children can talk, listen, read, and write;
- makes materials for communicating accessible to the various learning areas.

➡ See Chapter 1.3, “The Learning Environment”.



QUESTIONS FOR REFLECTION: HOW CAN/DOES THE LEARNING ENVIRONMENT CONTRIBUTE TO CHILDREN’S LITERACY?

Educators can ask themselves whether and in what ways the learning environment is an encouraging place for children to learn about literacy. Questions such as the following can help focus reflection and discussion.

- How can we connect literacy to real-life, relevant contexts?
- How does the environment foster a sense of wonder in children and encourage inquiry into literacy and communication?
- How do we make children’s literacy and language thinking visible for revisiting?

- Are appropriate materials placed throughout the classroom (e.g., manipulatives; found materials; magnetic letters and words from the name wall; materials to represent their thinking such as writing and drawing tools, various kinds of paper, and large pieces of paper for representing thinking in the blocks and dramatic play areas)? Are the materials organized to provide easy access for all children?
- Do we provide appropriate space and organization of time to help facilitate optimal literacy learning?
- Do we provide appropriate provocation and documentation to enable the children to engage more deeply with literacy learning?



QUESTIONS FOR REFLECTION: HOW CAN WE USE THE OUTDOORS TO ENHANCE LITERACY LEARNING?

In what ways can we:

- extend the learning environment beyond the classroom – into the outdoors, as well as to the rest of the school and to the community beyond the school? How can connections with these settings then be brought back into the classroom to promote literacy learning? For example, the educators can invite the children to engage in imaginative play by co-creating a story about a squirrel’s adventures.
- build outdoor learning into the flow of the day? For example, as part of their inquiry regarding the outdoor environment of the school, children can use hoops from the gym and hand lenses to explore a small area of ground and then record what they see.
- reflect the natural environment within the classroom? For example, the team can go beyond displaying natural items (e.g., leaves) that the children bring into the classroom by inviting questions and wonderings that the children have about the items and recording them for further investigation.

MATHEMATICS BEHAVIOURS: WHAT ARE WE LEARNING FROM RESEARCH?

High quality instruction in mathematics and high quality free play need not compete for time in the classroom. Engaging in both makes each richer, and children benefit in every way.

(Sarama & Clements, 2009a, p. 331)

Research supports the understanding that mathematics experiences occur naturally as children play. During play, young children spontaneously measure, sort, classify, estimate, pattern, count, and more (Ginsberg, 2006; Sarama & Clements, 2008; Seo & Ginsberg, 2004; Hunting 2010). However, the presence alone of mathematics in play is insufficient for rich learning to occur. Intentional, purposeful teacher interactions are necessary to ensure that mathematical learning is maximized during play (Baroody, Lai, & Mix, 2006; deVries, Thomas, & Warren, 2007; Balfanz, 1999; Ginsburg, Lee, & Boyd, 2008).

Research indicates that supporting the development of young children's mathematical knowledge plays a crucial role in their long-term success in school. In 2007, it was found that mathematics skills among children in Kindergarten were the best predictor of later school achievement, regardless of gender or socio-economic status (Duncan et al., 2007). Further studies confirm this finding (Claessens, Duncan, & Engel, 2009; Claessens & Engel, 2011), and additional work regarding the specific skills needed to be successful indicates that spatial thinking skills and geometric reasoning play a critical role in the development of problem-solving skills, mathematical learning, and reading comprehension (Clements & Sarama, 2011; Wheatley, Brown, & Solano, 1994; Casey et al., 2008).

Numeracy and mathematics share an inherent relationship. On the one hand, such skills as critical thinking and problem solving, applying technology, and understanding the use of data require “a solid grounding in mathematical concepts and procedures. On the other hand, knowledge of mathematical

concepts and procedures alone is not enough to guarantee numeracy” (State of Victoria Department of Education and Early Childhood Development, 2009, p. 6). Some researchers suggest that it is helpful to think of mathematics as “a well-established discipline” and numeracy as “necessarily inter-disciplinary”. Steen suggests that “numeracy, like writing, must permeate the curriculum”. When it does, “it will enhance [children’s] understanding of all subjects and their capacity to lead informed lives” (Steen, 2001, p. 115).

It has also been found that intentionally introducing ideas and materials connected with mathematics in the classroom – or “mathematizing” the learning environment – can create a wide variety of opportunities for children to learn about mathematics (Clements & Sarama, 2013, p. 136).



READ: “Supporting Numeracy”, *Capacity Building Series, K–12* (August 2012)



EDUCATOR TEAM REFLECTION

When we began the full-day Kindergarten program, we established a time in our day in which the children explored mathematics. As we learned more about what it meant to be numerate, we began to question the effectiveness of this practice. We started to look for opportunities throughout the day in which we could make explicit links to mathematics in various contexts – or “mathematize” the contexts.

For example, we started with the routine of taking attendance. We used to just have the children find their name card in the basket and place it in the pocket chart and then look at the cards that were left in the basket to help us determine who was away. We decided that we could “mathematize” this daily routine by asking the children how we could find out how many children were at school and how many were away. We were intentional in our use of mathematics vocabulary, such as “Are more children away than are at school?”, and in being explicit that we were using mathematics to figure out the answer. We continue to look for opportunities to integrate mathematics into the daily routines.

CHILDREN'S PRIOR ENGAGEMENT WITH MATHEMATICS OUTSIDE THE SCHOOL

Before the onset of formal schooling, young children do not only memorize ... and they do not only employ mechanical skills. They deal spontaneously and sometimes joyfully with mathematical ideas. This is what real mathematicians do.

(Ginsburg & Ertle, 2008, p. 55)

Young children come to school already knowing a great deal about mathematics. Children bring with them an intuitive knowledge of mathematics that they have developed through curiosity about their physical world and through real-life experiences. It could also be said that, upon entering school, most children are interested in learning to persist, to try something new, and generally to engage in problem solving. Educators play a critical role in fostering a positive attitude towards mathematics by valuing a child's early attempts at problem solving, by sharing and celebrating the child's learning, and by encouraging in each child a love of mathematics.

The following are some examples of ways in which children bring to school their conceptual understanding of mathematics from their daily experiences:

- manipulating objects (e.g., fitting different sizes and shapes of a construction toy together, fitting toys onto a shelf, sorting household items and clothing)
- making comparisons (e.g., "I'm taller than you"; "I'm older than my baby brother"; "I live on the fourth floor and he lives on number ten")
- making observations (e.g., "This bag is really heavy"; "There are so many rocks"; "I have ten fingers"; "There is a square on my building")

- asking questions (e.g., "Who is taller?"; "Who has more cookies?"; "How big is it?")
- solving problems (e.g., "We can make all of these toys fit in this basket"; "Let's see how many steps we have")

It is essential for Kindergarten programs to build on the prior knowledge and experiences of children. Also, to help maintain the continuity between home and school, educators can encourage parents and other family members to continue to engage their children in similar experiences connected with mathematical thinking at home. Educators can:

- consider including the mathematics involved in the daily school lunch or milk programs in children's exploration of numbers;
- invite children's families to discuss the kinds of mathematics that their children engage in both at school and outside school;
- set up "family math" nights for which children across the school not only plan the mathematics content but also design the program schedule as a mathematics problem-solving task;
- post children's inquiries on the class website or blog, or on a classroom wall or window, and invite parents to respond;
- invite parents to attend a "math circle" at the school;
- create a blog asking a mathematics "question of the week", such as, "Did you know your children are learning math when they ...?"

SUPPORTING THE DEVELOPMENT OF MATHEMATICS BEHAVIOURS

Mathematics in the Kindergarten program builds on children's desire to make sense of their world, and helps them develop and demonstrate their mathematical understanding. Young children use mathematics intuitively

and develop their understanding of mathematics through their individual approaches to learning, as well as through their prior experience of their linguistic, family, cultural, and community backgrounds. It is therefore important for children’s existing conceptual understanding of mathematics to be valued and for children to be introduced to mathematical concepts in an appropriate manner and at an appropriate time in their development. Children also need to be given learning experiences that are within the range of things they can do with and without guidance, that is, in their zone of proximal development.

When designing learning experiences, educators should consider the children’s cognitive, communication/language, physical, social, and emotional development. The most successful learning takes place when the educators provide mathematical experiences that are based on an understanding of the child’s total development. The child needs to:

- have the cognitive ability to do the mathematics;
- be able to understand the language of instruction, including the mathematical vocabulary;
- have sufficient fine-motor control to manipulate the materials;
- be emotionally mature enough to deal with the demands of the learning experience so that frustration does not set in.¹⁴

Since all children will demonstrate a developmental progression in the understanding of foundational mathematical concepts, the educators need to ask themselves, “Why have we chosen this learning for this child at this time in this context?”, observe each child, and use their observations to gain insights to negotiate and plan the learning.

14. Adapted from ideas in C. Sophian (2004), “A Prospective Developmental Perspective on Early Mathematics Instruction”; also cited (from proofs) in Ontario Ministry of Education, *Early Math Strategy: The Report of the Expert Panel on Early Math in Ontario, 2003*, p. 8.

The following chart contains some examples of developmental progression in children’s understanding of mathematics. Under “Initially”, the examples indicate what a child might say or do at the beginning of the learning process. Under “Eventually”, the examples indicate a more complex understanding of the concept or skill that develops with time and experience.

Some Developmental Aspects of Learning Mathematics: What Children Might Be Saying, Doing, and Representing

Initially	Eventually
“This is getting bigger.” “Every time I add a block, my building gets taller.”	“We need three more blocks to finish the base.”
“I think it will take three scoops to fill up the pail. ... It took six.”	“I know that is not a hundred. A hundred is a lot and this is only a little bit.” “I think there are more than five buttons because they wouldn’t all fit on a five frame.”
“I’m five years old.”	(pointing to numbers in a book and reading them aloud to a classmate) “Five. There are five frogs on the log.”
A child may show smaller quantities using anchors of five and ten, such as his or her fingers or manipulatives.	A child may show quantities to ten, using such tools as five and ten frames and manipulatives.

(continued)

Initially	Eventually
To represent the quantity of eight, a child may first count from one to eight using his or her fingers. Later, a child may put up one hand, count from one to five using each finger, pause, and then continue to count to eight using three more fingers.	A child may put up all five fingers of one hand at once and simply say “Five”, then count on, using three more fingers and saying “Six, seven, eight. There are eight.”
A child may sort objects into piles or collections on the basis of a common attribute.	A child may describe the rule he or she used to sort, classify, or compare.

When children demonstrate knowledge or skills related to such developmental aspects of learning mathematics, they are demonstrating understanding of the seven fundamental mathematical processes. The mathematical processes are described in the following chart (and illustrated with examples in the chart for overall expectation 20 in Chapter 4.5). They can be seen as the processes through which children acquire and apply mathematical knowledge and skills. The processes are interconnected and are integrated with both the overall and specific expectations in the Kindergarten program. The need to highlight these processes arose from the recognition that children should be actively engaged in applying them *throughout* the program rather than only in connection with particular groups of expectations (e.g., expectations for number sense and numeration, measurement, or geometry and spatial sense). The mathematical processes provide the foundation for mathematical thinking in the Kindergarten program and beyond.

The Mathematical Processes for Early Learners

The Processes	Suggestions for Educators
<p>Problem Solving</p> <p>Children develop and apply problem-solving strategies, and persevere when solving problems and conducting mathematical investigations.</p>	<p>Educators can provide models for problem solving. As children investigate possible solutions, they begin to develop an understanding that there is often more than one way to solve a problem and that problems can be solved in collaboration with others. Educators provide opportunities for children to highlight and describe the various ways they solved the problem.</p>
<p>Reasoning and Proving</p> <p>Children develop reasoning skills (e.g., pattern recognition, classification) to create, investigate, and test possibilities and conjectures (e.g., through talk and through models provided by the teacher and sometimes by other children).</p>	<p>Educators can observe each child’s own mathematical strategies and pose questions that reveal the child’s thinking (e.g., “How did you decide to ...?”; “How did you know what came next in the pattern?”; “What do you think will happen? How can you show me?”; “Does anyone else have an idea?”). Educators use their observations to plan and adapt instruction.</p>

The Processes	Suggestions for Educators
<p>Reflecting</p> <p>Children reflect on and monitor their thinking to help clarify their understanding and, if necessary, revise their thinking, as they conduct an investigation or solve a problem (e.g., explain to others how they solved their problem).</p>	<p>Educators provide models of reflective statements and questions to help the children deepen their understanding (e.g., “How many different ways did we ...?”; “How many more do you think we need now?”; “You have a good start with this pattern. Is there another way you could ...?”; “Would looking at Nancy’s pattern help?”; “What could you do to ...?”).</p>
<p>Selecting Tools and Strategies</p> <p>Children select and use a variety of concrete, visual, and digital/virtual learning tools and appropriate strategies to investigate mathematical ideas and to solve problems.</p>	<p>Educators observe how children select and use materials so that they can plan and adapt instruction. Teachers provide the children with models of different ways to use a variety of tools and strategies (e.g., strategies for counting). Educators provide children with opportunities to share the different ways they use tools and strategies.</p>

The Processes	Suggestions for Educators
<p>Connecting</p> <p>Children make connections among mathematical concepts and notice examples of mathematics in their everyday life.</p>	<p>The mathematical experiences for young children build largely upon the natural relationships between play and learning in their daily experiences, questions, and interests. Educators facilitate mathematical thinking in various ways (e.g., <i>in the dramatic play area</i>: “How many people will be at your lunch? How many plates will you need?”; <i>in the blocks area</i>: “How is your building big – is it tall or is it wide?”; <i>in the outdoors</i>: “What patterns do you see?”).</p>
<p>Representing</p> <p>Children create representations of mathematical ideas (e.g., use concrete materials; physical actions, such as hopping or clapping; pictures; numbers; diagrams; dramatization; invented symbols), make connections among them, and apply them to solve problems.</p>	<p>Educators make explicit to children that there are many ways to represent mathematical ideas, in order to help the children develop flexibility in thinking about ways of representing ideas. Educators can do so by providing models, thinking aloud (e.g., “I can’t draw this many people. How else could we keep track of them?”), and describing children’s representations (e.g., “You used two cubes on this plate and three cubes on that plate to make five cubes”).</p>

(continued)

The Processes	Suggestions for Educators
<p>Communicating</p> <p>Children communicate mathematical thinking orally and visually, using everyday language, an emerging mathematical vocabulary, and a variety of representations (e.g., constructions, pictures, dramatizations).</p>	<p>Educators provide models for using mathematical language, questioning, extending thinking, clarifying processes, and building vocabulary (e.g., “How did you know that this plate has more carrots?”; “Can you show me how you figured that out?”; “How can you prove that?”; “What shapes did you use to paint your picture?”).</p>

It is important to understand that children are highly capable of complex thinking. In order to avoid limiting the children’s thinking, and to help them extend their learning, educators provide challenges that are at the “edge” of the children’s learning. See the example to the right.

This thinking process is not described as an actual expectation for Kindergarten children, but it is a complex example involving understanding of concepts of whole-part relationships, of composing and decomposing quantities, and of interpreting and drawing conclusions from data. It is therefore important to be attuned to children’s mathematical thinking – that is, to regard young children as being capable of potentially complex thinking. Keeping in mind the question “Why have we chosen this learning for this child at this time in this context?” will help educators provide differentiated ways of supporting children’s learning.

Two children, Jason and Juvon, took a survey of some children and the educator team in the Kindergarten class. The question they asked was “Would you rather have one of the educators read a story to the class or Jason and Juvon?” They created a T-chart and invited the children surveyed to “vote” by recording their names in the appropriate column. The following is a replica of their T-chart.

Mrs. Smith and Mr. Singh	Jason and Juvon
Manny	Mr. Singh
Jessica	Mrs. Smith
	Noel
	Michael
	Cody
	Anthony
	Ahmed
	Phoenix
	Dakota
	Hope

After the survey was done, one of the educators asked Jason and Juvon, “What did you find out when you did your survey?” Jason stated, “More kids want us to read to the class.” The educator then asked, “How did you figure that out from the survey results?” Juvon slid his finger across the first two names, showing an equivalent number on both sides of the centre line, and said, “I could see there were two here. I counted on and found ten. Then I know ten is eight more than two.”

Understanding the Importance of Connecting Mathematics to Relevant Contexts

Problem solving and reasoning that involve conceptual understandings of mathematics are the foundations of mathematics in Kindergarten classrooms. Rich and relevant mathematical problems involve important mathematical ideas and arise out of real-life situations, and can be approached in a variety of ways so that all children can be involved in exploring solutions. Solving such mathematical problems requires persistence, flexibility in thinking, and multiple perspectives, since there may not be a single, easy-to-find, correct answer. Through mathematics investigations in a wide variety of contexts, children develop their ability to use mathematics as a way of making sense out of their daily experiences. Through these investigations, they also develop increasing confidence along with the knowledge, skills, and attitudes needed to be numerate. Some examples of contexts for investigations are the following:

- in the blocks, sand, or water areas
- at a computer or tablet
- in a small or large group
- during transitions or routines
- in the outdoors



EDUCATOR TEAM REFLECTION

We used to think that “using a real-life context” meant “trying to make mathematics more appealing to children”. That assumption led us almost always to come up with fantastic, faraway, imaginary scenarios rather than simply focusing on the materials, contexts, and everyday mathematics that are in the learning environment.

When the story problems we created began to feel too contrived or even distracting, we began to reflect on other approaches. Sometimes, for example, the story problems ended up distracting attention from the mathematics so that some children thought they were learning about a magic kingdom instead of thinking about geometric properties and attributes.

Now, even during daily transitions such as tidying up, instead of singing a tidying-up song each time, we notice and name the mathematics problem involved: for example, “Will all the blocks fit on the shelf?”; “How many boots will fit in the little cupboard? Do we need to use additional space?”

Children can bring more of their current thinking and learning to mathematics materials, questions, and problems when the contexts are relevant and meaningful to them. Attempting to solve problems engages children in posing their own questions and finding a variety of solutions. Throughout the day children should have opportunities to explore and engage in mathematical investigations and to communicate in meaningful ways with the educators and with their peers. When the mathematical problems children are exploring are shown to be connected and relevant to their daily life, the problems provide a vehicle for the children both to apply what they know and to develop new strategies.



EDUCATOR TEAM REFLECTION

We began to reflect on our past experiences of provoking mathematical thinking by providing opportunities for children to plant and care for bean seeds. Although the children who took part enjoyed the experience of planting, we wondered whether we were merely making an assumption that they actually knew they were using mathematical concepts and thinking mathematically when they measured the amount of water they used and recorded the weekly growth of their plant.

When we slowed down, listened to the children’s conversation, and observed their behaviours throughout the process, we became better at noticing the mathematics concepts they were using. We carefully entered into the children’s conversations to name the mathematical ideas in such a way as to not interrupt their learning, and we began to observe that the children were using more mathematical language, posing more questions, and making more connections.

A learning opportunity such as the one described above can be thought of as an opportunity for children to engage in a mathematical inquiry if:

- a provocation (e.g., a collection of different kinds of seeds) is provided to engage children's thinking;
- children's questions and theories about the provocation are considered in determining the direction in which their learning will go;
- prompts that continually encourage observation and inquiry are used, such as "What do you notice?"; "What do you think will happen?"; "How could we test your theory?";
- prompts that encourage making connections between the real world and mathematics are used, such as "Where are other places you see plants growing?"

The learning opportunity can also make children aware of mathematical processes (see overall expectation 20) if they are asked such questions as the following:

- "How will we show what we found out about our plant's growth?" [communicating; representing; problem solving]
- "In what other ways could we show what we found out?" [communicating; representing; selecting tools and strategies]
- "What did you expect would happen? Why do you think it didn't happen that way?" [reflecting; reasoning and proving; problem solving]
- "How did using mathematics help you learn about the plant?" [connecting; reflecting]

Reading books aloud and in shared reading contexts provides real links between literature and mathematical ideas, since some stories use mathematical terminology and/or contain illustrations of mathematical concepts. Reading can also give children a sense of how mathematics is connected with other

aspects of life, such as science and the arts. Because mathematics is potentially relevant and connected to so many areas of inquiry, children should be given many opportunities to demonstrate their understanding in a variety of ways – for example, by constructing concrete models, by describing their understanding in their first language, and/or by making drawings to illustrate a mathematical concept.

The educators can connect mathematics to authentic contexts by:

- developing learning experiences that build on children's intuitive knowledge of mathematics and making use of authentic and culturally and linguistically relevant contexts (e.g., thinking about the role that "number" or "quantity" plays in their lives, such as the number of floors indicated on their apartment building elevator, the number of steps at the front door of the school, the numbers on houses);
- thinking aloud with the children about the mathematical ideas involved when they are putting two blocks together to make one block, making two sides of a painting equivalent, or thinking about how many books will fit on a shelf and why;
- connecting mathematical ideas to literacy, such as patterns in songs, stories, and cumulative texts;
- identifying, exploring, and discussing mathematics in books that they read, in situations that occur in the classroom (e.g., finding ways of making sure that all children have a place to put their boots), and in situations outside the classroom (e.g., comparing sizes of insects found during a schoolyard exploration);
- modelling daily the formulation of mathematical problems, posing questions, and providing opportunities for children to pose questions, and then providing time for investigating possible answers and solutions;

- introducing mathematics into the learning environment – for example, by displaying number lines and hundreds charts; including measuring cups, rulers, measuring tapes, scales, play money, and magnetic numbers; and making explicit connections between using them and doing mathematics.

MATHEMATICS LEARNING THROUGHOUT THE DAY

The development of understanding of mathematical concepts is not limited to a particular time in the day. Mathematics learning is incorporated throughout the day – it can be made visible, or explicit, to the children in any context, and can be observed by the educators at any time.

 **VIEW:** Video clips – “What do early learning environments look like and sound like? How are educator teams rethinking the learning environment? Rethinking the learning environment and the impact on learning”

“How are educator teams rethinking the multiple opportunities to make mathematics thinking and learning visible? Numeracy as a whole class community”

“Co-constructing Learning”

Young children have the curiosity and the capability to engage in complex mathematical thinking and learning. Children need to experience mathematics concepts in depth through revisiting and repeating investigations over a long period of time (e.g., the idea of “five” can be represented by the numeral “5” [numerality] to indicate the number of items [quantity] or the fifth person in a line [ordinality]). Enabling children to revisit and think about mathematics in multiple contexts allows their current thinking to be demonstrated and new thinking and learning to be revealed and made visible.

To become proficient, [children] need to spend sustained periods of time doing mathematics – solving problems, reasoning, developing understanding, practicing skills – and building connections between their previous knowledge and new knowledge.

(Kilpatrick, Swafford, & Findell, 2001, p. 135)



EDUCATOR TEAM REFLECTION

We had been building knowledge about “fiveness” and the importance of “five” as a concept. We used to worry about children who didn’t seem to describe their thinking immediately. We are rethinking our expectation that consolidation of a concept has to happen at a particular time, and are now taking a more open approach, or stance, to listening for indications of children’s understanding of a concept. As a result, we often see and hear children applying their mathematical understanding in multiple contexts – for example, in their play, their conversations, and ongoing mathematical discussions. We notice and name the mathematics so that their learning is made explicit to them.

Educator team members play a critical role in engaging children in mathematics behaviours throughout the day, revealing their thinking and consolidating their learning. The following are some examples of ways in which the educators can engage the children:

- noticing and naming specific mathematics behaviours as they occur (e.g., “Zain, I notice that you used a lot of different shapes to build your structure. How did you decide what shapes to use?”)
- asking the children questions that elicit explanations of their mathematical thinking processes in various contexts
- inviting the children to suggest and negotiate approaches to solving a problem

- encouraging the children to rethink a structure (e.g., offering suggestions for removing or adding materials to make a block tower more secure)
- asking the children to demonstrate, describe, and/or explain their solution to a problem
- helping the children to make connections between what they already know about mathematics and what they are learning at the moment
- identifying mathematical relationships with the children (e.g., two of their small blocks make one large one; different shapes can be combined to make a more complex pattern)
- reviewing children’s learning using pedagogical documentation (e.g., watching videos to observe progress), discussing it with the children, and negotiating with the children further opportunities that interest them

Since mathematical concepts are interconnected, learning about relationships between concepts and applications of concepts can take place in multiple contexts. For example, in several expectations related to number sense and numeration (see OE15, and SEs 15.1 to 15.10), key concepts of counting are introduced either as the focus for the expectation (“a number’s position in the counting sequence determines its magnitude”, “one-to-one correspondence”, “stable order”, and “order irrelevance”) or in examples (“conservation”, “cardinality”, and “abstraction”). The key concepts of counting are interrelated, and are not necessarily developed in a linear fashion – for example, a child might learn some aspects of one concept, move on to another concept, and then return to work on other aspects of the first concept. Children demonstrate their understanding of these counting concepts in all five areas of mathematics – for example, a child might demonstrate his or her understanding of one-to-one correspondence while analysing data on a graph made by the class.

Children will represent their mathematical understandings in ways that are meaningful to them – for example, by writing or drawing on paper, by using pictures and/or numbers and some words, by using materials such as blocks or sand, or by using electronic media such as applications on tablets.

Generic activities – for example, having children complete worksheets – should be avoided: they are rarely effective because their focus is narrow and they provide only limited assessment information about the child’s level of understanding.

Throughout the day, the educators can create an effective environment to support young children’s learning of mathematics by providing mathematics experiences that focus on particular mathematical concepts and by identifying and embedding significant mathematics learning experiences in play, daily routines, and classroom experiences.

It is important for the educators to use the following approaches when providing learning experiences in mathematics – whether for a large or small group of children or in a classroom learning area or the outdoors. These approaches are interconnected and related to each other, and they are an ongoing part of the educators’ interaction with the children. They are not “stand alone” processes nor should they be used in a timed way (i.e., 30 minutes = 10 minutes for each element) or in a linear fashion.

- **Observing how children apply their prior knowledge**

Educators observe and listen for ways in which children use their prior knowledge to solve a problem, use and manipulate materials, and communicate both verbally and non-verbally. By observing how the children proceed, the educators gain insight into what the children already know, so that they can provide learning opportunities that are challenging but not too challenging (to assess *for* learning) to ensure that

the children will have the necessary tools to develop an understanding of the concept being investigated. Young children reveal their prior knowledge in multiple ways and at different times – not only during an initial encounter with a material or concept. Often children’s prior knowledge is revealed in their play and through their actions and conversations, and this unfolding takes place over time and is connected to the learning experience at hand. Educators need to be flexible and to observe continually in order to detect children’s prior knowledge and understand how they are applying it in a new context.

- **Engaging the children in mathematics**

Learning experiences should reflect the children’s questions and interests and be embedded in a developmentally appropriate context. For example, with regard to the counting concept that a number’s position in a counting sequence determines its magnitude, when a child says “I am four now and I am going to be five”, educators might ask the child, “Are you going to be older or younger on your next birthday?” The learning experiences should also support children in making connections between their ideas/questions/wonderings and the conceptual understandings in the overall expectations. Children need to be able to explore and investigate materials and concepts in concrete ways. By providing opportunities that are interesting to the children, the educators can invite them to engage in such complex explorations as reasoning, investigating mathematical ideas, extending their understanding, reflecting, and making generalizations. Individual learning is supported and extended by both the educators and the children’s peers.¹⁵

- **Reflecting on the process of children’s learning**

Reflecting on the process of children’s learning creates a mathematics “community” for building understanding of mathematical concepts and thinking about how and where mathematics occurs in our world. “The community provides an environment in which individual mathematical ideas

15. Adapted from ideas in C. Sophian, “A Prospective Developmental Perspective on Early Mathematics Instruction”, cited in Ontario Ministry of Education, *Early Math Strategy: The Report of the Expert Panel on Early Math in Ontario, 2003*, p. 9.

can be expressed and tested against others’ ideas. ... This enables learners to become clearer and more confident about what they know and understand” (Fosnot, 2005a, p. 10). In such a context, educators think flexibly about when, where, with whom, and why to reflect on mathematics. For example, they are attuned to the children’s development and think about whether a particular time or place is appropriate for intervention in a child’s learning.



VIEW: Video “Thinking about numeracy throughout the day”

MATHEMATICS AND THE LEARNING ENVIRONMENT

Mathematically literate students demonstrate the capacity to “formulate, employ and interpret mathematics” (Brochu et al., 2013, p. 15). They view themselves as mathematicians, knowing that mathematics can be used to understand important issues and to solve meaningful problems, not just in school but also in life. By extension, the physical environment for mathematics learning should include spaces and places for mathematics learning throughout the classroom.



QUESTIONS FOR REFLECTION: HOW CAN/DOES THE LEARNING ENVIRONMENT CONTRIBUTE TO CHILDREN’S LEARNING IN MATHEMATICS?

Educators can ask themselves whether and in what ways the learning environment is an encouraging place for children to explore mathematics. Questions such as the following can help focus reflection and discussion:

- How can we connect mathematics to real-life relevant contexts?
- How does the environment foster a sense of wonder in children and encourage inquiry into mathematics?

(continued)

- How is children’s mathematical thinking made visible for revisiting?
- Are mathematics materials – such as manipulatives, found materials for sorting (e.g., shells, buttons), blocks, tools for measuring, materials to represent their thinking – placed in easily accessible locations throughout the classroom?
- Do we provide appropriate space and organization of time to help facilitate optimal mathematics learning?
- Do we provide appropriate provocation and documentation to enable the children to engage more deeply with mathematics?
- How can we make daily routines richer by introducing mathematics?

 **READ:** “The Third Teacher: Designing the Learning Environment for Mathematics and Literacy, K–8”, *Capacity Building Series* (July 2012)

2.4 THINKING ABOUT PROBLEM SOLVING AND INNOVATING

DESCRIPTION OF THE FRAME

This frame encompasses children’s learning and development with respect to:

- exploring the world through natural curiosity, in ways that engage the mind, the senses, and the body;
- making meaning of their world by asking questions, testing theories, solving problems, and engaging in creative and analytical thinking;
- the innovative ways of thinking about and doing things that naturally arise with an active curiosity, and applying those ideas in relationships with others, with materials, and with the environment.

The learning encompassed by this frame supports collaborative problem solving and bringing innovative ideas to relationships with others.

In connection with this frame, it is important for educators to consider the importance of problem solving in *all* contexts – not only in the context of mathematics – so that children will develop the habit of applying creative, analytical, and critical-thinking skills in all aspects of their lives.

➡ For a wide range of practical examples of how children and educators interact to make thinking and learning about problem solving and innovating visible, in connection with related overall and specific expectations in the Kindergarten program, see the expectation charts for this frame in Chapter 4.6.

PROBLEM SOLVING AND INNOVATING: WHAT ARE WE LEARNING FROM RESEARCH?

Play ... is the genesis of innovation, and allows us to deal with an ever-changing world.

(Brown, 2009, p. 199)

We don't have to teach [children] to ask "why?" because inside each human being is the need to understand the reasons, the meaning of the world around us and the meaning of our life. ... But children not only ask "why?" They are also able to find the answers to their whys, to create their own theories. ... Observe and listen to children because when they ask "why?" they are not simply asking for the answer from you. They are requesting the courage to find a collection of possible answers.

(Rinaldi, 2004, p. 2)

Researchers acknowledge that the need to engage in problem solving and critical and creative thinking has “always been at the core of learning and innovation” (Trilling & Fadel, 2009, p. 50). Children in Kindergarten are growing up in a competitive, globally connected, and technologically intensive world. Educators need to provide opportunities, explicitly and intentionally, for children to develop the knowledge, skills, and attitudes they will need for solving a wide variety of problems. It is therefore essential for children to develop the skills required for problem solving, creative and critical thinking, and innovating; confidence, curiosity, and the willingness to take risks and to see mistakes as opportunities for learning; and the ability to collaborate and to build and maintain relationships. Through the exploration and inquiry that are part of play, young children develop these skills. For example, every time children ask “why” questions, look for a tool that will help them with their task, ask

questions about how something works, or create a game and explain how to play it to their friends, they are showing an essentially creative approach to the world around them.

Children entering Kindergarten bring with them the capacity to wonder and imagine and the ability to discover and experiment as means of finding answers. When children are able to explore the world around them with their natural curiosity and exuberance, they are fully engaged and see themselves as contributing members of their world. This creative approach is a central aspect of both problem solving and innovating.

 **VIEW:** Video “It Starts with Student Curiosity”

Children’s Engagement with Problem Solving

Children develop problem-solving strategies from first-hand explorations and from exchanging ideas with other children and with adults, all of which can help them to see things from different points of view. Children develop “working theories” as answers to their questions by observing and listening, and by exploring, discussing, and representing. Their theories become increasingly useful for making sense of the world and for giving them some control over the problem-solving process.

Children’s innate capacity to ask questions and recognize problems may in fact encourage them to make connections that lead to innovative thinking and solutions that are meaningful and relevant to them. Their resilience and initiative develop as they persevere through many attempts at solving a problem. “As children gain greater experience, knowledge, and skills, the theories they develop become more widely applicable and have more connecting links between them” (New Zealand Ministry of Education, 1996, p. 44). They

approach problems with the optimistic attitude that a solution is possible and with the confidence that they are able to create that solution.

Children’s Engagement with Innovating

Education, for most people, means trying to lead the child to resemble the typical adult of his society. ... But for me, education means making creators. ... You have to make inventors, innovators, not conformists.

(Bringuier, 1980, p. 132, citing Piaget)

Making things and then making those things better is at the core of humanity. Ever since early man started his first fire or clubbed his first seal, humans have been tinkerers. ... Throughout history there has been an acceptance of the intuitive sense that peak learning results from direct experience.

(Libow Martinez & Stager, 2013, p. 11)

Innovating may be described as creating, or improving upon, a product or a process. For example, innovation may result in the following:

- a product that is more efficient, compact, interesting, or aesthetically pleasing; safer; or less fragile
- a process that is easier to understand, more accessible, safer, more environmentally responsible, or more accurate

Kindergarten children are engaging in innovative thinking when they do any of the following:

- ask or respond to “what if ...?” and “what would happen if ...?” questions
- take the risk to try something they have never done before
- try a different approach to solving a problem after making a mistake or finding that something does not work

- use materials or tools from one play area for a different purpose in another area
- modify a structure or building procedure to meet their needs better or make it safer
- test a structure such as a marble run and make changes to improve how it works
- explain their thinking regarding a change or adaptation
- make changes to materials or resources in the classroom to meet their needs (e.g., move chairs, recreate a name wall when writing in the dramatic play area)
- design and make a tool for a specific purpose
- create music, visual art work, or dances, and make improvements to them
- design and create items to use in their dramatic play, and create unique names for unusual shapes or imaginary animals
- test their theories, and persevere in their attempts to solve a problem
- use a variety of attributes when sorting or patterning, or re-sort items using a different attribute
- transfer skills learned in one context to another
- collaborate with peers to create and modify things, using their own ideas and building on the ideas of others
- consider someone else's perspective when making adaptations

 **VIEW:** Video "Improvable Ideas in the Classroom"

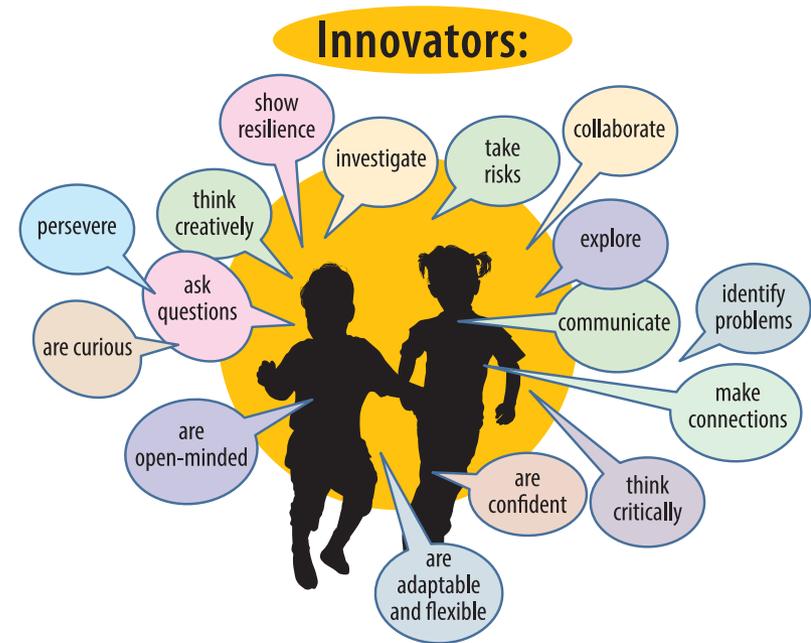


Figure 5. This illustration shows “what innovators do” and the traits they possess. Children who are encouraged to innovate develop habits of mind and characteristics that serve them throughout their lives.

SUPPORTING CHILDREN'S DEVELOPMENT IN PROBLEM SOLVING AND INNOVATING

Teaching shifts from focusing on covering all required content to focusing on the learning process, developing students' ability to lead their own learning and to do things with their learning. [Educators] ... are partners with students in deep learning tasks characterised by exploration, connectedness and broader, real-world purposes.

(Fullan & Langworthy, 2014, p. 7)

Educators who are in an inquiry stance recognize that learning occurs in social contexts and that interactions and conversations are vitally important for learning. They also actively support children's learning by providing opportunities for children to engage in hands-on investigations that are relevant to the children. They use strategies such as modelling and conjecturing, and engage in shared thinking with the children so that the children can learn to identify problems and propose innovative solutions (ADEEWR, 2009, p. 15).

When educators take a purposefully curious approach to new experiences and ideas rather than acting as the experts, children are more likely to engage in creative problem solving and more complex play and inquiry (Gopnik, 2011). Posing questions such as the following can provoke children to ask additional questions, to think logically when solving the problem, and to use both language and non-verbal means to represent their thinking:

- “How can we make the building stronger?”
- “How can we attract more birds and butterflies to our school garden?”
- “How can we explain what snow is to someone who lives in a hot part of the world?”
- “How can we help someone who doesn't speak English understand what happened in the story?”
- “Why does our modelling clay keep drying out?”
- “How can we arrange our picture books so that you can look at them more often?”
- “How can we keep the dramatic play area from getting so messy all the time?”

Similarly, explicitly identifying innovations in the world around them will enable children to recognize the impact of others' innovations on their own environment and experiences. For example, educators can ask such questions

as the following to provoke children to consider the value of creativity in a range of areas:

- “How do you suppose people got a drink of water at school before the water fountain was invented?”
- “What do you think the artist was trying to do when she created this sculpture?”
- “I wonder what winter coats were like before zippers were used.”
- “I used to send a letter to your parents on paper, but now I send them an e-mail. Why do you think I made that change?”

Innovation requires the ability *to look at* something in a new and interesting way. Innovation in Kindergarten may not result in a new and unique product or process, but it is an important experience for the children to see that *they* can create something new and different. Educators can support and encourage Kindergarten children in innovative thinking in such ways as the following:

- begin with the curiosity, questions, wonderings, and interests of the children
- engage children by asking questions, such as “I wonder why ...?” or “What if ...?”
- provide an open and flexible learning environment where children can apply their skills to improve some aspect of their immediate world
- encourage children to take creative risks during play
- model the use of language associated with problem solving and innovating
- listen to children's hypotheses and make their thinking visible through conversation
- encourage children to use language and non-verbal means, such as drawing diagrams, to explain their hypotheses to others
- scaffold children's learning intentionally throughout an exploration project
- support the use of multiple attempts to solve a problem

- provide opportunities for children to become aware of the creative significance of the innovation process (e.g., the process of mixing paints to create a new colour, or of exploring the design and possible adaptation of a stable structure)
- emphasize the importance of perseverance, and encourage children to see “failures” and “mistakes” as rich learning opportunities



QUESTIONS FOR REFLECTION: HOW DOES THE LEARNING ENVIRONMENT SUPPORT THE DEVELOPMENT OF CHILDREN'S PROBLEM-SOLVING AND INNOVATING CAPACITIES?

- How can we ensure that the ways in which we provoke and extend children's problem-solving and innovating capacities reflect our view of children as “capable, competent, curious, and rich in potential and experience”?
- How can we ensure that our program and learning environment enable children to initiate purposeful problem solving?
- In what ways can we encourage children to use their imagination and their prior knowledge to find solutions and test whether they work?
- How can we encourage children to take risks and to persevere despite unsuccessful attempts to find a solution?
- In what ways can we demonstrate that “not knowing” is a necessary attitude with which to approach solving problems in a creative way?

THE ROLE OF PLAY IN INQUIRY, PROBLEM SOLVING, AND INNOVATING

Our [Full-Day Kindergarten] program promotes the development of self-regulation, social-emotional learning, inquiry skills, and play-based learning that fosters creativity, imagination and problem solving.

(Fullan, 2013, p. 11)

Play is a vehicle for learning and lies at the core of innovation and creativity. When playing, children for generations have used their abundant imagination to create new and different uses for such things as a stick, a rock, or a box. Children engaged in play begin to wonder and experiment as they interact with materials, the learning environment, and their peers. During play, they test initial ideas, ask more questions, and retest their new thinking. Their theories are validated or challenged all through this process. The educators observe and wonder along with the children, and ask further questions to help the children clarify and test their theories.

However, educators are also aware that an over-reliance on questions can create a context of “interrogation”, where children have to stop what they are doing and verbalize. Educators know that many times, if they observe in silence and document their observations, their questions will be answered through the children's actions. They use this silent time to consider which questions (probably only one or two) are most relevant in order to deepen children's engagement, and often wait to offer these questions to the children when revisiting the documentation.

In response to a child's play, questions, and representations of thinking and learning, educators may ask open-ended and probing questions such as the following:

In the blocks area:

- “What is your goal for this structure? What do you want it to do?”
- “What isn't working? What do you need to make it work?”
- “What are you investigating?”
- “What materials are you thinking of using?”
- “Which tools will you need?”
- “What are you predicting will happen?”
- “I noticed that you Why did you do that? What was your plan?”

- “Did things turn out the way you thought they would? Why? Were there any surprises?”
- “What would happen if ...? Why?”
- “Who else could help you with this?”

In the dramatic play area:

- “How did your friend show you what she was feeling without using words?”
- “What did you use to create the shelves for your market stand?”
- “How will people know who is the chef in the bakery and who is going to take their orders?”
- “What kind of voice would you use if you were sad? How would you change your voice if you were angry?”

In the visual arts area:

- “What gave you the idea for this picture?”
- “What changes have you made to improve it?”
- “What was your first idea? How has it changed? Why has it changed?”

 See Chapter 1.2, “Play-Based Learning in a Culture of Inquiry”.

This whole creative process also presents abundant opportunities to document children’s learning as it takes place. The educators and the learners are researchers in the inquiry in which they are involved. The educators record the child’s attempts at solving a problem, including changes or adaptations the child has made. Together they interpret and reinterpret theories and events and, in doing so, they make the learning visible. The educators and the child can reflect together on the learning.

 See Chapter 1.4, “Assessment and Learning in Kindergarten”.



EDUCATOR TEAM REFLECTION

One of the things we were excited about as we observed children engaged in play and exploration was the potential for teachable moments. We loved hearing children ask questions that allowed us to answer them and extend their vocabulary or knowledge about something.

After a while, we realized that every time we provided a quick answer to a question or pondering, their interest in it diminished. After reflecting on this, we began to respond to a question from a child with another question from us. We kept in mind the notion that it is better to ask than to tell, whenever possible. This kept us in an inquiry stance more often.

We were amazed at the innovative ideas that emerged when we stopped answering questions and stayed in the inquiry stance and simply asked more questions, demonstrating our interest and curiosity along with the children. We have really enjoyed our journey as co-learners with our young learners.

THE ROLE OF LEARNING IN THE OUTDOORS IN PROBLEM SOLVING AND INNOVATING

Outdoor play also supports children’s problem-solving skills and nurtures their creativity, as well as providing rich opportunities for their developing imagination, inventiveness and resourcefulness.

(Council for Learning outside the Classroom, 2009, p. 1)

A rich integrated curriculum, the kind that needs the reality of the outdoors, serves children well. When we serve children well, we predicate a better future.

(Rivkin, 1995, p. 81)

 See “Laying the Foundations for Citizenship and Environmental Stewardship” in Chapter 2.1, “Thinking about Belonging and Contributing”.

The outdoor world offers an abundance of resources and materials for supporting problem solving and innovating. Educators and children can interact in a variety of learning environments, including the schoolyard, fields, and trails in the school neighbourhood. Plants and animals (e.g., an insect) that are found in the outdoors can give rise to many wonderings and discoveries. For example, the opportunity to observe the changes in the seasons from the perspective of a tree can lead to rich questions, discussion, and further learning. Children’s imaginations are activated as they try to use natural materials for various purposes and to explore and care for the natural environment.

Learning in the outdoors provides opportunities for exploration through play. Dymont and Bell (2006) reported that there was a significant increase in children’s engagement in learning opportunities such as investigating insects,

exploring rocks, and looking at plants after their asphalt and turf-based playgrounds were modified with more diverse landscaping and design features. In addition, play and interactions in nature develop the capacity for creativity, problem solving, and intellectual development in children (Kellert, 2005).

Educators can pose questions such as the following to assist children in their inquiries in the outdoors:

- “How do you think a tree knows it is spring?”
- “What are your thoughts about why a tree loses its leaves in the fall?”
- “What do you think a tree needs to grow big and strong?”
- “In your view, what can we do to help and protect our tree?”
- “If you could have a conversation with a tree, what would you like to ask it?”

PART 3: THE PROGRAM IN CONTEXT



Part 3 focuses on important considerations that educators in Kindergarten take into account as they build their programs, and on the connections and relationships that are necessary to ensure a successful Kindergarten program that benefits all children.

3.1 CONSIDERATIONS FOR PROGRAM PLANNING

A FLEXIBLE APPROACH TO LEARNING: THE FLOW OF THE DAY

Providing children with a full day of learning in Kindergarten gives educators time to support and enhance the children’s learning, and allows children time to become absorbed more deeply in what they are exploring and investigating.

The “flow of the day” refers to a *flexible and fluid plan* that includes a variety of contexts for learning and a minimum of transitions, resulting in a more integrated and connected day for the children. The flow of the day can also be adapted to meet the changing needs of the children in the class.

The flow of the day is based on a schedule for the days of the week, which the educators develop together, with a focus on meeting the needs of the children in the best way possible. While the schedule has to accommodate various administrative and practical needs and functions, it must also be designed to allow for the large blocks of time for play that are necessary for deep learning, and to minimize transitions for the children. Educators reflect on the flow of the day at all times, and make adjustments to the schedule as necessary to ensure that it effectively responds to children’s needs and makes the best use of the knowledge, skills, and experience of the Kindergarten educators, as well as of planning-time teachers and the volunteers in the classroom. The flow of the day may change to suit the season – for instance, the task of putting on coats and boots in winter becomes a feature of the day for which time has to be allowed.

The following are some important criteria to consider when creating an effective Kindergarten schedule:

- Large uninterrupted blocks of time are devoted to play- and inquiry-based learning in indoor and outdoor settings, and the children and educators

negotiate and co-construct the learning that happens during these blocks of time. Transitions are kept to a minimum – for example, consideration should be given to how many times during the day children are asked to “stop and tidy up”.

- Learning related to *all four frames* is fully integrated throughout the day. This integrated learning means, for example, that literacy development and mathematics learning occur throughout play and inquiry, and not within isolated blocks of time.
- When the whole class is brought together, the meeting has a specific focus and lasts for a minimum amount of time.
- Educators provide opportunities for children to engage in individual and small-group learning during play (e.g., to address particular needs or interests; to review documentation; to co-construct a learning area) and use various learning and teaching strategies (e.g., shared reading, interactive writing, explicit instruction in mathematics) as opportunities arise from play.

It is essential that the flow of the day be flexible, to allow the children to:

- have a rest or some quiet time or a snack when they need it;
- become deeply absorbed in an inquiry and extend their explorations as their engagement requires;
- sit or stand in a way or location that best allows them to focus on what is happening.

Educators often co-create visual schedules with the children, which the children can consult throughout the day. The visual schedule may consist of detachable segments, which can be moved around if the group co-constructs an alternative flow of the day.



QUESTIONS FOR REFLECTION

- How can we reduce the number of transitions in the day? For example, can we eliminate a transition by planning for outdoor play first thing in the morning, at the same time reducing the number of times children have to put on and take off their coats?
- How can we make the best use of two educators to maximize the time allowed in our schedule for children to be engaged in learning? For example, can we plan for one educator to focus on entry routines while the other interacts with the children who are already in the classroom?
- What can we do to enable children to revisit, over time, inquiries or projects in which they are deeply engaged, in order to extend the learning?
- How can we create opportunities to provide explicit instruction at the moments when it is most likely to move children forward in their learning?
- What opportunities does a child have, in the course of the day, to retire to a space for quiet and rest? Does the flow of our day allow for children to rest when they feel tired?
- How often is large-group learning needed for *all* the children?
- When in the day do we find ourselves engaging more in “direction and correction” than in negotiating and co-learning with the children? How might we adjust our flow of the day to reduce the frequency of this sort of interaction?
- How can we make the best use of the planning-time teacher so that there is minimal interruption in the children’s learning?
- What local considerations do we need to take into account in order to create an effective flow of the day (e.g., considerations/constraints related to access to outdoor areas, access to washrooms)? How can we most effectively manage these factors?

- What challenges that have an impact on the flow of the day could we discuss with the principal? For example, is there a way to reduce the number of different educators that the children interact with in the course of a day or a week (e.g., the number of different educators assigned for planning time; librarians; lunchtime supervisors)?

SUPPORTING TRANSITIONS

[T]ransitions are milestone events for children ... They are times of exciting change ... and times of new opportunities and growth for every child. They can also be times of uncertainty where surroundings are not the same, expectations and procedures different and faces as yet unfamiliar. ... Transition should be viewed as a process rather than an event that involves children, [educators] and parents together. Transition has been described as an ongoing journey rather than a destination.

(Early Years Matters, 2016)

By the time they come to Kindergarten, many children will have experienced such transitions as the following:

- from being an only child to being a sibling
- from one home to another home
- from home to a child care setting
- from one aspect of daily life to another (e.g., from playing inside to playing outdoors)
- from a preschool program to Kindergarten

Fundamental to a smooth transition are relationships that serve as a bridge between the family and school and provide continuity from preschool to kindergarten. These relationships can be found among parents, teachers, family workers, other school staff, and the child's peers.

(Kraft-Sayre & Pianta, 2000, p. 2)

In their relationships with families, educators play an essential role in facilitating the transitions that children face. They plan for ways to support smooth transitions in such circumstances as the following:

- across early years settings (e.g., between child care and Kindergarten)
- between the home and Kindergarten
- from one learning experience or daily routine to another in Kindergarten

Because children enter Kindergarten with a diverse range of experiences, abilities, and needs, the rate at which children adapt to the school environment will vary. To facilitate this adaptation, educators collaborate with families and other significant partners, such as school and community resource teams, to ensure the best possible transition to the school environment.

As part of making children's transition to Kindergarten easier, educators endeavour to maintain a sense of calm in the classroom and provide large blocks of time to engage children's attention in sustained, complex play and inquiry. Educators also strive to cultivate authentic, caring relationships and connections and a sense of belonging among children, adults, and the world around them. "When a child is involved in and surrounded by supportive relationships, the transition to Kindergarten occurs more smoothly" (Kraft-Sayre & Pianta, 2000, p. 2).

For more information on making transitions from early childhood programs to Kindergarten smoother for children, see the following:

Ontario Early Years Policy Framework (2013)

How Does Learning Happen? (2014)

The Early Learning Framework website

For information on supporting transitions for children and families who speak a language other than English, see the following:

Supporting English Language Learners in Kindergarten:

A Practical Guide for Ontario Educators (2007), pp. 33–38

 "English Language Learners", in this chapter



 For information on transition planning for children with special education needs, see the following section.



CHILDREN WITH SPECIAL EDUCATION NEEDS

Kindergarten educators are the key educators of children with special education needs. They have a responsibility to help all children learn, and they work collaboratively with special education teachers, where appropriate, to achieve this goal. They commit to assisting every child to prepare for living with the highest degree of independence possible.

Learning for All: A Guide to Effective Assessment and Instruction for All Students, Kindergarten to Grade 12 (2013) describes a set of beliefs, based on evidence from research, that guide program planning for integrated assessment and

instruction for children with special education needs. Educators pay particular attention to these beliefs, which are as follows:

- All children¹⁶ can succeed.
- Each child has his or her own unique patterns of learning.
- Successful instructional practices are founded on evidence-based research, tempered by experience.
- Universal design¹⁷ and differentiated instruction¹⁸ are effective and interconnected means of meeting the learning or productivity needs of any group of children.
- Classroom educators are the key educators for a child’s literacy and numeracy development.
- Classroom educators need the support of the larger community to create a learning environment that supports children with special education needs.
- Fairness is not sameness.

16. Ontario Ministry of Education, *Learning for All: A Guide to Effective Assessment and Instruction for All Students, Kindergarten to Grade 12* (2013), p. 7. For the purposes of this document, the word “student” in this list has been replaced with “child”.

17. The goal of Universal Design for Learning (UDL) is to create a learning environment that is open and accessible to all students, regardless of age, skills, or situation. Instruction based on principles of universal design is flexible and supportive, can be adjusted to meet different needs of children, and enables all children to have the fullest possible access to the curriculum.

18. Differentiated instruction is effective instruction that shapes each student’s learning experience in response to his or her particular learning preferences, interests, and readiness to learn. See *Learning for All*, p. 31.

These beliefs are also aligned with the principle that children are “competent, curious, capable of complex thinking, and rich in potential and experience”.

 See “Fundamental Principles of Play-Based Learning”, in Chapter 1.1, “Introduction”.

In any given classroom, children may demonstrate a wide range of strengths and needs. Kindergarten educators plan programs that recognize this diversity and design tasks and challenges that respect the children’s particular abilities so that every child can derive the greatest possible benefit from the learning process. Integrated assessment and instruction that are suited to the characteristics of a diverse group of children but are also precisely tailored to the unique strengths and needs of each child can be achieved using the principles of Universal Design for Learning, differentiated instruction, and a tiered approach.

In planning Kindergarten programs for children with special education needs, educators begin by examining both the program expectations and the individual child’s strengths and learning needs to determine which of the following options is appropriate for the child:

- no accommodations¹⁹ or modified expectations;
- accommodations only;
- modified expectations, with the possibility of accommodations;
- alternative expectations, which are not derived from the program expectations.

19. “Accommodations” refers to individualized teaching and assessment strategies, human supports, and/or individualized equipment.

If the child requires accommodations and/or modified or alternative expectations, the relevant information, as described in the following paragraphs, must be recorded in his or her Individual Education Plan (IEP). More detailed information about developing and implementing IEPs for children with special education needs can be found in *The Individual Education Plan (IEP): A Resource Guide, 2004* (referred to hereafter as the *IEP Resource Guide, 2004*). A detailed discussion of the ministry's requirements for IEPs is provided in *Individual Education Plans: Standards for Development, Program Planning, and Implementation, 2000* (referred to hereafter as *IEP Standards, 2000*).

Children Requiring Accommodations Only

Providing accommodations to children with special education needs should be the first option considered in program planning. Accommodations allow the child with special education needs to access the program without any changes to the expectations. Many children with special education needs are able, with certain accommodations, to participate in the Kindergarten program and to demonstrate learning independently. The accommodations required to facilitate the child's learning must be identified in his or her IEP (*IEP Standards, 2000*, p. 11). A child's IEP is likely to reflect the same accommodations for many, or all, frames.

There are three types of accommodations:

- *Instructional accommodations* are changes in teaching strategies, including styles of presentation, methods of organization, or use of technology and multimedia. Some examples include the use of large print, Braille, or sensory toys or equipment.
- *Environmental accommodations* are changes that the child may require in the classroom and/or school environment, such as special lighting, individual quiet space, or a visual schedule.
- *Assessment accommodations* are changes in assessment procedures that enable the child to demonstrate his or her learning, such as the use of speech-to-text software.

If a child requires "accommodations only" to support learning, the IEP box on the Kindergarten Communication of Learning: Initial Observations report and on the Kindergarten Communication of Learning report will *not* be checked. Reporting provided under Key Learning, Growth in Learning, and Next Steps in Learning in both reports will be based on the expectations in this document.

Children Requiring Modified or Alternative Expectations

Modified expectations for most Kindergarten children with special education needs will be based on the Kindergarten program expectations, with changes in the number and/or complexity of the expectations. Modified expectations must represent specific, realistic, observable, and measurable learning, and must describe specific knowledge and/or skills that the child can demonstrate independently, given the appropriate assessment accommodations.

Modified expectations must indicate the knowledge and/or skills that the child is expected to demonstrate independently and that will be assessed in each reporting period (*IEP Standards, 2000*, pp. 10 and 11). Modified expectations should be expressed in such a way that the child and parents can understand not only the key learning the child is expected to demonstrate independently but also the basis on which his or her performance will be evaluated, resulting in comments that are recorded on the reports. The learning expectations for the child must be reviewed in relation to the child's progress at least once every reporting period, and must be updated as necessary (*IEP Standards, 2000*, p. 11).

If a child requires modified expectations, assessment and evaluation of his or her key learning will be based on the learning expectations identified in the IEP. On the Kindergarten Communication of Learning reports, the IEP box must be checked for any frame in which the child requires modified expectations, and the following statement must be inserted: "*Program expectations have been modified to meet the needs of the child.*" The educators' comments should include relevant information on the key learning and on the child's demonstrated growth in learning related to the modified expectations, as well as next steps for the child's learning.

For the majority of children, alternative expectations would be additional to modified or regular Kindergarten program expectations. If a child requires alternative expectations, assessment and evaluation of his or her key learning will be based on the learning expectations identified in the IEP. On the Kindergarten Communication of Learning reports, the IEP box must be checked for any frame in which the child requires alternative expectations, and the following statement must be inserted: *“Key learning, growth in learning, and next steps in learning are based on alternative learning expectations in the IEP.”*

Transition Plans for Children with Special Education Needs

For children with special education needs, transition planning is critical for a smooth and successful entry to school. A transition plan must be developed for a child who has an IEP, and may also be developed for a child who is receiving special education programs and/or services but does not have an IEP.

The transition plan should be responsive to the child’s physical, emotional, and learning needs, and should be developed in collaboration with parents and members of the school’s special education team, community agencies, and other professionals, as required, to determine the nature and extent of the transition support that the child requires. The plan must identify specific transition goals, the actions required to achieve the goals, the kind of support needed, roles and responsibilities, and timelines for the implementation and/or completion of each of the identified actions.

For further information about transition planning, see “Policy/Program Memorandum No. 156: Supporting Transitions for Students with Special Education Needs” (2013).

ENGLISH LANGUAGE LEARNERS

Ontario schools have some of the most multilingual student populations in the world. Among them are many English language learners – students whose first language is a language other than English, or is a variety of English that is significantly different from the variety used for instruction in Ontario’s English-language schools, and who may require focused educational supports to assist them in attaining proficiency in English. English language learners may be Canadian-born or recently arrived from other countries. They come from diverse backgrounds and school experiences, and have a wide variety of strengths and needs.

Children who are English language learners may require additional supports as they make the transition to Kindergarten. Educators consider the instruction that might be necessary in their play- and inquiry-based learning environments that will maximize English-language acquisition.

Canadian-Born English Language Learners

Many English language learners were born in Canada and raised in families or communities in which languages other than English are spoken. They may include, for example:

- First Nations, Métis, or Inuit children whose first language is a language other than English;
- children who were born in communities that have maintained a distinct cultural and linguistic tradition and who have a first language that is not English;
- children who were born in immigrant communities in which languages other than English are primarily spoken.

Newcomers from Other Countries

Newcomers arrive from countries around the world at various stages in their educational careers. Young children may arrive in their preschool years or at the age when they can begin Kindergarten. They may arrive at the beginning of the school year or at any time during the school year. Depending on their age and country of origin, they may have had some educational experiences prior to their arrival in Canada (e.g., preschool, private school). Newcomers from other countries may include:

- children who have arrived in Canada with their families as part of a voluntary, planned immigration process, some of whom may have some knowledge of English as a foreign language;
- children who have arrived in Canada as a result of a war or other crisis in their home country, and who may have left their homeland under conditions of extreme urgency. These children have often suffered traumatic experiences, and may also be separated from family members.

Children Who Require Modified Expectations

When a child's learning and growth in learning are based on expectations modified from the expectations in *The Kindergarten Program* to support English language learning needs, educators will check the “ESL” box for the frame.

Educators will *not* check the “ESL” box to indicate only:

- that the child is an English language learner; or
- that accommodations have been provided to support learning.

For more information, see: *English Language Learners – ESL and ELD Programs and Services: Policies and Procedures for Ontario Elementary and Secondary Schools, Kindergarten to Grade 12, 2007.*

EQUITY AND INCLUSIVE EDUCATION IN KINDERGARTEN

The Ontario Equity and Inclusive Education strategy focuses on respecting diversity, promoting inclusive education, and identifying and eliminating the discriminatory biases, systemic barriers, and power dynamics that limit the ability of children to learn, grow, and contribute to society. Antidiscrimination education continues to be an important and integral component of the strategy.

In an environment based on the principles of inclusive education, all children in Kindergarten, their parents, other family members, and other members of the school community – regardless of ancestry, culture, ethnicity, sex, physical or intellectual ability, race, religion, gender identity, sexual orientation, socio-economic status, or other similar factors – are welcomed, included, treated fairly, and respected. Diversity is valued, and all members of the school community feel safe, comfortable, and accepted.

Every child in Kindergarten is supported and inspired to succeed in a culture of high expectations for learning. In an inclusive education system, all children see themselves reflected in the program, their physical surroundings, and the broader environment, so that they can feel engaged in and empowered by their learning experiences.

The implementation of antidiscrimination principles in education influences all aspects of school life. It promotes a school climate that encourages all children to work to high levels of achievement, affirms the worth of all children, and helps all children strengthen their sense of identity and develop a positive self-image. It encourages staff and children alike to value and show respect for diversity in the school and the broader society. Antidiscrimination education promotes fairness, healthy relationships, and active, responsible citizenship.

Early childhood settings can be pro-active in identifying strategies that will respect families' diverse linguistic, cultural, ethnic and religious backgrounds and value this diversity as an asset that enriches the environment for everyone. ... Preconceived notions about children's ethno-cultural backgrounds, gender, abilities or socioeconomic circumstances create barriers that reduce engagement and equitable outcomes (Bernhard, Freire, & Mulligan, 2004). Addressing prejudices increases the involvement of all children. Early childhood practitioners can take actions to avoid prejudice and to counteract bias when it occurs in early childhood settings.

(ELECT, 2007, p. 12)

Children bring to school traditional practices, values, and the beliefs and experiences of their families and communities. Ontario is a province of many cultures and languages, and Kindergarten programs strive to reflect those differences. Environments that promote attitudes and beliefs that support equity, diversity, and democracy, and that are inclusive of children with special needs, help children develop empathy and a strong sense of self in relation to others.

Educators can give children a variety of opportunities to learn about diversity and diverse perspectives. They can enable children from a wide range of backgrounds to see themselves reflected in the program by drawing attention to the perspectives of various ethnocultural, religious, and racial communities, the contributions of women, and the beliefs and practices of First Nations, Métis, and Inuit peoples. By doing so, they also give children the opportunity to learn about the diversity of people and perspectives in their local community. It is essential that learning opportunities and materials used to support the Kindergarten program reflect the diversity of Ontario society.

Kindergarten programs, including assessment practices, should take into account the wide variety of backgrounds and experiences, interests, aptitudes, and learning needs of all children. Learning experiences, resources, and materials used in Kindergarten must be free from bias and stereotyping so that children can make meaningful connections between what they are learning and their own backgrounds, experiences, and learning styles. Books should include fairy tales, stories from mythology, and tales about children and adults from diverse social, cultural, spiritual, and family contexts. Books in children's first language, or in the language they speak at home, should also be available, so that family members at home can see what the children are learning, and can participate in their learning.

School-community interactions should reflect the diversity of both the local community and the broader society. A variety of strategies can be used to communicate with and engage parents and community members from diverse communities, and to encourage their participation in and support for school activities, programs, and events. Schools may consider offering assistance with child care or making alternative scheduling arrangements in order to help caregivers participate. Children can also help by encouraging and accompanying their families, who may be unfamiliar with the Ontario school system. Special outreach strategies and encouragement may be needed to draw in the parents of English language learners and First Nations, Métis, or Inuit children, and to make them feel more comfortable in their interactions with the school.

HEALTHY RELATIONSHIPS AND KINDERGARTEN

Every child is entitled to learn in a safe, caring environment, free from violence and harassment. Research has shown that children learn and achieve better in such environments. A safe and supportive social environment in a school is founded on healthy relationships – the relationships between children, between

children and adults, and between adults. Healthy relationships are based on respect, caring, empathy, trust, and dignity, and thrive in an environment in which diversity is honoured and accepted. Healthy relationships do not tolerate abusive, controlling, violent, bullying/harassing, or other inappropriate behaviours. To experience themselves as valued and connected members of an inclusive social environment, children need to be involved in healthy relationships with their peers, educators, and other members of the school community.

Several provincial policies, programs, and initiatives, including Foundations for a Healthy School, the Equity and Inclusive Education strategy, and the Safe Schools strategy, are designed to foster caring and safe learning environments in the context of healthy and inclusive schools. These policies and initiatives promote positive learning and teaching environments that support the development of healthy relationships, encourage academic achievement, and help all children to reach their full potential.

In its 2008 report, *Shaping a Culture of Respect in Our Schools: Promoting Safe and Healthy Relationships*, the Safe Schools Action Team confirmed “that the most effective way to enable all students to learn about healthy and respectful relationships is through the school curriculum” (p. 11). Educators can promote this learning in a variety of ways. For example, by giving children opportunities to apply critical thinking and problem-solving strategies and to address issues through group discussions, role play, and other means, they can help them develop and practise the skills they need for building healthy relationships. Educators can also have a positive influence on children by modelling the behaviours, values, and skills that are needed to develop and sustain healthy relationships, and by addressing immediate relationship issues that may arise among children.

An emphasis on developing the skills that are needed to build and support healthy relationships can be found throughout the Kindergarten program.

For example, expectations that focus on belonging and contributing introduce children, in age-appropriate ways, to the knowledge and skills they will need to maintain healthy relationships throughout their lives.

ENVIRONMENTAL EDUCATION

Ontario’s education system will prepare students with the knowledge, skills, perspectives, and practices they need to be environmentally responsible citizens. Students will understand our fundamental connections to each other and to the world around us through our relationship to food, water, energy, air, and land, and our interaction with all living things. The education system will provide opportunities within the classroom and the community for students to engage in actions that deepen this understanding.

(Ontario Ministry of Education, *Acting Today, Shaping Tomorrow*, 2009, p. 6)

Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools (cited above) outlines an approach to environmental education that recognizes the needs of all Ontario learners and promotes environmental responsibility in the operations of all levels of the education system.

The three goals outlined in *Acting Today, Shaping Tomorrow* are organized around the themes of teaching and learning, student engagement and community connections, and environmental leadership. The first goal is to promote learning about environmental issues and solutions. The second is to engage children in practising and promoting environmental stewardship, both at school and in the community. The third stresses the importance of providing leadership by implementing and promoting responsible environmental practices throughout the education system so that staff, parents, community members, and children become dedicated to living more sustainably.

The Kindergarten program offers many opportunities for accomplishing these goals. The learning environment includes the outdoors – the schoolyard, fields and trails in the vicinity of the school, and various other outdoor venues. Helping children develop appreciation and respect for the environment is an integral part of providing learning opportunities in these spaces. Experiences that allow children to appreciate and understand the value of fresh air and outdoor spaces, the environmental benefits of active transportation (e.g., walking and biking), the environmental implications of various food choices, the impact of using trails, and the health risks associated with exposure to direct sunlight and air pollution are all components of environmental education that can be integrated with learning in the Kindergarten program. To facilitate these connections, educators are encouraged to make the outdoors an integral part of their learning environment in order to help children observe, explore, and appreciate nature.

As children learn more about themselves through the development of personal and social skills, learn to work effectively and respectfully with others through the development of self-regulation skills, and acquire the capacity for systems thinking through the development of critical and creative thinking skills, they increase their capacity to make connections with the world around them and to become environmentally responsible citizens.

➡ See “Laying the Foundations for Citizenship and Environmental Stewardship” in Chapter 2.1, “Thinking about Belonging and Contributing”.

THE ROLE OF THE ARTS IN KINDERGARTEN

The exciting “brain” news is that participating in art, music, movement, and storytelling ... not only develops language, mathematics, science, and social skills, but also strengthen[s] the synapses between brain cells. Research shows that these synapses grow stronger through active participation in the arts.

(Booth Church, n.d.)

Experiences in the arts foster creative thinking in a variety of areas, not only within the arts themselves. When the learning environment provides opportunities for children to create art in any form, communication between various parts of the brain is stimulated.

Along with the development of skills in the arts, participation in the arts provides children with opportunities to experience the satisfaction of contributing something of their own within their social sphere, which helps them develop a sense of belonging. For that reason, the arts-related learning expectations are included in the Belonging and Contributing frame of the Kindergarten program.

➡ See “Developing a Sense of Belonging and Contributing through the Arts” in Chapter 2.1, “Thinking about Belonging and Contributing”.

Engagement in learning through the arts also supports the development of children’s self-regulation skills. As children observe the art works of others, work independently on their own creations, or take the risk to try something new with an idea, they are learning to self-regulate. As they share their ideas and listen to the diverse views and opinions of others, they are also developing respect for others and the ability to collaborate. In addition, their ability to deal with stressors is increased.

By being actively engaged in arts activities, students become motivated and can develop the ability to be persistent in tasks; through their successes, they develop self-confidence. In addition, participation in the arts gives them opportunities to develop social skills, such as skills in conflict resolution, self-control, and collaboration, as well as social tolerance and empathy. They can also learn to take creative risks in a safe environment.

(The Ontario Curriculum, Grades 1–8: The Arts, 2009, p. 50)

The arts provide children with a vehicle to explore and express their thoughts and feelings. Communication happens through creative expression. When children manipulate materials, explore music and movement, create symbols, and engage in imaginative expression (e.g., visual art, storytelling), and dramatic play, they are communicating. Creating and designing fuse together the cognitive, emotional, and physical domains – thinking, feeling, and doing. The creative expression of ideas, feelings, and interpretations using a variety of materials also helps consolidate children’s learning; enhances their creative, problem-solving, and critical-thinking skills; and strengthens their memory and sense of identity.

In addition to providing opportunities for literacy development, the arts program also builds on, reinforces, and enhances mathematical literacy. For example, clear, concise communication often involves the use of diagrams, charts, tables, and graphs, and many components of the arts curriculum emphasize students’ ability to interpret and use symbols and graphic texts.

(The Ontario Curriculum, Grades 1–8: The Arts, 2009, p. 52)

There are many types of patterns, rhythms, and relationships in the world around us, and the human brain inherently finds enjoyment in seeing or hearing them (Dartnell, n.d.). The development of an understanding of pattern in the arts not only supports children’s appreciation of visual arts, music, and dance and drama, but also enhances their understanding of various types of patterns and relationships in the context of mathematics.



VIEW: Video “Leaders in Educational Thought: Mathematics K–12: The Art of Math”

READ: Lewis Dartnell, “Maths and Art: The Whistlestop Tour”, *Plus*

Educators who see children as capable and competent provoke children’s awareness of their own innate creativity and that of others in a wide variety of ways in order to stimulate their imagination further. Educators provide a variety of tools, materials, and opportunities to enable the children to give expression to their ideas and feelings as they make use of their prior knowledge and experiences and take creative risks to develop new ideas in every aspect of their learning.

THE ROLE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

Information and communications technology (ICT) provides a range of tools that can significantly extend and enrich the educators’ instructional strategies and support children’s learning. ICT tools include multimedia resources, databases, the Internet, digital cameras, and an extensive array of specialized software. ICT can also be used to connect children to other schools, at home and abroad, and to bring the global community into the local classroom.

The integration of information and communications technology into the Kindergarten program represents a natural extension of the learning expectations, as does the use of other technological devices. Whenever appropriate, therefore, children should be encouraged to use ICT to support and communicate their learning. Current technologies are useful both as research tools and as creative media. Educators should be critical consumers of educational software to ensure that the software offers opportunities for higher-level thinking. Programs that promote only rote repetition of facts and information should be avoided.

Although the Internet is a powerful learning tool, all children must be made aware of issues of privacy, safety, and responsible use, as well as of the potential for abuse of this technology, particularly when it is used to promote hatred.

THE ROLE OF THE SCHOOL LIBRARY IN KINDERGARTEN PROGRAMS

The school library program can help to build and transform children's knowledge to support a lifetime of learning in an information- and knowledge-based society. The school library program supports success by encouraging children to read and use many forms of text for understanding and enjoyment, and by helping them to gather and use information effectively. The school library program enables children to:

- develop a love of reading for learning and for pleasure;
- begin to acquire an understanding of the richness and diversity of artistic and informational texts produced in Canada and around the world;
- begin to appreciate and value the role of public library systems as a resource for lifelong learning.

The school library program plays a key role in the development of information literacy and research skills. In collaboration with educators, teacher-librarians design, teach, and provide children with authentic information and research tasks that foster learning, including the ability to:

- access, select, gather, process, critically evaluate, create, and communicate information;
- use the information obtained to explore and investigate issues, solve problems, make decisions, build knowledge, create personal meaning, and enrich their lives;
- communicate their findings for different audiences, using a variety of formats and technologies;

- use information and research with understanding, responsibility, and imagination.

In addition, teacher-librarians can work with educators to help children to:

- develop literacy in using non-print forms, such as the Internet, CDs, DVDs, and videos;
- design inquiry questions;
- document and reflect on their learning;
- create and produce single-medium or multimedia presentations.

HEALTH AND SAFETY IN KINDERGARTEN

Educators are responsible for ensuring the safety of the children, both in and out of doors. Educators also strive to develop in children an awareness of the importance of staying healthy and safe. In Kindergarten, children begin to develop a sense of responsibility for their health, well-being, and safety. They learn about the importance of playing, exploring, and investigating in safe ways to prevent injury to themselves and others.

Children learn by observing the practice of adults and other children. Educators must therefore model safe practices at all times and communicate safety requirements to children in accordance with school and school board policies. Children must be made aware that health and safety are everyone's responsibility – at home, at school, and in the outdoors.

To ensure the safety of children, learning areas need to be equipped with appropriate materials and resources – for example, art materials need to be non-toxic, and educators need to be aware of any possible danger that could arise from inappropriate use.

Routines provide opportunities for children to learn about health and safety. Children must be aware of any required safety drills and of ways of interacting with one another to ensure that they are not putting themselves or their peers in danger.

In a safe learning environment, the educators will:

- be aware of up-to-date safety information and follow board policies and guidelines related to health and safety;
- discuss health and safety issues with the children;
- plan the learning environment with safety as a primary consideration, and involve the children in devising ways to make the environment safe for all;
- observe children to ensure that safe practices are being followed;
- have plans in place in case of an emergency.

Health and safety issues not usually associated with Kindergarten may be important when the learning involves field trips. A field trip can provide an exciting and authentic dimension to children's learning experiences, but it also takes the educators and children out of the predictable classroom environment and into an unfamiliar setting. Educators must preview and plan these experiences carefully to protect children's health and safety. For example, for field trips in the outdoors, educators need to determine whether appropriate protection is required (e.g., sunscreen, hats, rain gear) and assess risks related to plants and animals (e.g., poison ivy, mosquitoes).

The school principal must ensure that parents have informed the school of any medical conditions that might affect their children, either in the regular classroom or during field trips. Educators must take children's medical conditions into consideration when planning learning opportunities both inside and outside the classroom.

3.2 BUILDING PARTNERSHIPS: LEARNING AND WORKING TOGETHER

Children's relationships influence their well-being, development, and learning. Trusting, loving, two-way relationships with adults and other children in their families and in the community are essential to early learning and to the sharing of knowledge from one generation to the next. Consistent, secure, responsive, and respectful relationships with caring adults are vital to children's well-being.

(British Columbia Ministry of Education, 2008, p. 15)

Since young children's learning and development take place in the context of social relationships, responsive relationships are of central importance in their early learning experiences. Young children make sense of the world around them through interactions with other children, their parents and other family members, educators, and members of the community in which they live. All of the relationships in which children engage affect their learning and, in particular, their sense of belonging and well-being. Positive, respectful, and reciprocal relationships therefore provide children with a strong foundation for their continued development.

Collaboration at all levels is also of central importance in children's learning. In the Kindergarten program, collaborative inquiry is carried out by all involved – children, educators, parents and other family members, and members of the community who have an interest in children's learning. Educators – for example, the principal, special education resource teachers, the school librarian, and the Kindergarten educators – collaborate in various ways to ensure that all children receive the support they need. Kindergarten educators also collaborate continually with one another, engaging in critical reflection and inquiry, testing theories, and discussing and questioning approaches.

CHILDREN

Children's responsibilities with respect to their own learning develop gradually and increase over time as they progress through Kindergarten and elementary and secondary school. With appropriate instruction and through experience, children come to see how an applied effort can enhance learning and improve achievement and well-being. Over time and with ongoing practice, children develop the dispositions, strategies, and skills that support learning. As they mature and as they develop the ability to persist, to manage their behaviour and impulses, to take responsible risks, and to listen with understanding, children become better able to take more responsibility for their learning and progress. There are some children, however, who are less able to take responsibility for their learning because of unique challenges they face. The attention, patience, and encouragement of educators can be extremely important to the success of these children. Learning to take responsibility for their achievement and improvement is an important part of every child's education, regardless of his or her circumstances.

To help children develop their capacity for learning, the educators create a warm and accepting learning environment that supports creative and complex thinking, while also giving the children opportunities "to extend their ideas and actions through sensitive, informed, well-judged interventions and support" (New Zealand Ministry of Education, 1996, p. 43). Through play-based inquiry, children learn about themselves and the world around them. Interactions with other children, with the educators, and with other adults provide a rich social world for children, where they will have varied

opportunities to learn through responsive relationships and to experience points of view that differ from their own. In this learning environment, educators support the children in their interactions and inquiries by:

- focusing on the children’s strengths to help them develop a sense of their capabilities and potential (a “growth mindset”);
- providing opportunities to develop the skills, strategies, and attitudes connected with the Kindergarten program;
- encouraging children to try new activities;
- co-constructing learning and acting as co-learners with the children;
- scaffolding learning for the children;
- supporting children’s inquiries by providing materials (including cultural materials representing the classroom community) that change as the children’s needs and wonderings change;
- co-constructing the learning environment with the children.

PARENTS AND FAMILIES

Allowing parents to make choices about what is best for their children is a powerful method of building a good working partnership with families. ... A strength-based approach considers the skills, knowledge and resources that parents and families already have and builds upon them.

(Best Start Resource Centre, 2010, p. 6)

Parents play an important role in their children’s learning. Studies show that children perform better in school if their parents are involved in their education. By becoming familiar with the Kindergarten program, parents can better appreciate the value of play-based learning and learn about the attitudes, skills, and strategies that their children are developing. This awareness will enhance parents’ ability to discuss their children’s learning with them, to communicate with educators, and to ask relevant questions about their children’s development. Knowledge of the program will also help parents

understand their children’s growth in learning and will enhance their ability to work with educators to improve their children’s learning and development.

Parents are the first and most powerful influence on their children’s learning, development, health, and well-being. Parents bring diverse social, cultural, and linguistic perspectives and are their children’s first role models with respect to learning about values, appropriate behaviour, and ethnocultural, spiritual, and personal beliefs and traditions. It is therefore important for schools and parents to work together to ensure that home and school provide a mutually supportive framework for children’s education.

Parents offer learning opportunities that are based on the deep knowledge they have of their children. Children’s learning and development occur within the context of their daily lives in families and communities. Parents and other caregivers nurture and teach children at home and in the community, supporting the dynamic process of early learning.

Parents are an integral part of the Kindergarten program, and are often present in the school and classroom. Knowing their child as well as they do, parents are able to provide educators with important information that allows the educators to meet the child’s individual learning needs better. At the same time, parents can “learn by watching and listening to educators working with their children – responding to the preferences and observed development of individual children, guiding care routines, negotiating conflicts, extending play opportunities, using teachable moments, and encouraging emerging literacy, informal mathematical thinking and inquiry skills” (Pascal, 2009a, p. 14).

Families bring with them rich knowledge and varied viewpoints about child-rearing practices, childhood, and development. When they are encouraged to share that knowledge, as well as their understanding of their child, with educators, they are often more supportive of their child’s learning (Pascal, 2009a, p. 5). Mutual respect and reciprocal learning between parents and educators can only benefit the children in the program.

It is important to understand that families' level of comfort with the school develops over time. While the goal is to engage parents and family members in the life of the school, it needs to be recognized that some families may be reluctant to engage for various reasons – for example, their own past experience or cultural beliefs may make them see schools as an authority. Families should be able to expect that educators will be culturally aware and sensitive to the school-community relationship and that they will support family involvement in school life. The starting point is a welcoming environment for all parents in all families – “raising their comfort level is a prerequisite to involving them in the program” (Pascal, 2009a, p. 14).

Educators and administrators can nurture family and community involvement by maintaining a warm, friendly, and welcoming atmosphere, one in which the customs, languages, and teachings of the cultures of people within the school community are respected and reflected. When parents and other family members feel comfortable about sharing their children's home and community experiences and understand the value of their input, they come to view the school more positively and are eager to sustain the high quality of the Kindergarten program.

The principles of ELECT, as well as findings from recent research, highlight the importance of strong, respectful, and reciprocal relationships with families. Creating an environment that welcomes families into the space, inviting their perspectives and providing opportunities for families to participate in meaningful ways (that they are most comfortable with) on an ongoing basis, supports their sense of belonging.

(Ontario Ministry of Education, 2014c, p. 18)

INVITING PARENT AND FAMILY INVOLVEMENT

- Assist parents in helping their children to make a smooth transition to school, in the following ways:
 - Meet with child care providers and/or staff at Ontario Early Years Child and Family Centres to gather relevant information on the children.
 - Meet with parents to provide information about the program. Prepare a set of rich questions that will help them to share pertinent information about their children that will improve understanding of their child as a learner (e.g., the child's strengths, interests, challenges; how the child interacts with others).
 - Ensure that the school and classroom environment is welcoming for all cultures in the school community.
- Continue to talk with parents informally on the playground and in the hallway – for example, when they pick up and drop off their children – and in the classroom. These informal conversations will help to strengthen the partnerships established in initial meetings.
- Provide opportunities for parents and families to learn more about what happens in Kindergarten. For example, organize a play date and invite children and their families to an informal meal beforehand. Invite families to engage in play with their children in a variety of contexts around the school and playground. Provide information to help parents see what their child is learning through play in each of these contexts.
- Encourage parents to serve on the School Council.
- Establish a parent network for newcomers at the school.

- Provide many and varied opportunities for parents and families to be part of the learning and teaching process. For example:
 - Invite parents, other family members, or members of the community (e.g., Elders, grandparents, retired volunteers) to come to the classroom to tell or read stories in their first language, or to help create dual-language books for the children.
 - Invite parents or community members to contribute to children’s inquiries in the classroom by sharing their expertise (e.g., by participating in a small-group cooking experience or helping to plant a Kindergarten garden) or by providing relevant materials or artefacts.
 - Invite parents or other family members to join the class on visits to areas of interest in the community. For example, on a visit to the local market, they can help to record children’s observations in photographs or on video and bring back various kinds of produce to use in vocabulary development.
 - Ask parents to contribute objects from home in their first language for classroom use, such as food containers, boxes, and newspapers or magazines.
 - Invite parents to come to the class to observe the children at play. Provide a brief list of things to look for when children are playing, as well as questions they can ask to further the children’s inquiries. Consider how to make this information accessible to all parents (e.g., by using their first language; by sending an e-mail).
 - Provide a list of prompts for parents, to help them talk with their children about their learning at school. Include ways in which parents and families can extend the learning at home.

- Send parents brief descriptions of their children’s investigations in the classroom in hard copy or electronically, and invite parents and families to converse with their children about their inquiries. Provide a place for the parents to write both the children’s ideas and their own thoughts and reflections on the children’s work, and ask them to send the comments back to school.
- Invite parents to share information about available community resources (e.g., cultural centres) that might be of interest to others.

The following resources can provide support for educators when they are talking with parents about their children in Kindergarten.

 **VIEW:** 8 videos for educators *Note:* The videos are not intended for viewing by parents in isolation from a discussion with an educator, since many of the terms may be new to parents (e.g., *scaffolding*, *co-constructing*). The viewing guides for this video series contain guiding questions to facilitate discussion when using the videos with parents.

Video clip: “Parent Engagement: How to Encourage It”

The following resources may be of interest to parents and are available in a variety of languages.

 **READ:** Ontario Ministry of Education, *Doing Mathematics with Your Child, Kindergarten to Grade 6: A Parent Guide* (undated)

Ontario Ministry of Education, *Reading and Writing with Your Child, Kindergarten to Grade 6: A Parent Guide* (undated)

Information for parents on what they can do to help their children once school starts can be found on the ministry website and other related sites.

 **READ:** Ontario Ministry of Education, “How can I prepare my child?” (“Once school starts”)

Parent Information Sheets

Ontario Ministry of Education, *A Parent Engagement Policy for Ontario Schools* (2010)

EDUCATORS

Educators are the key to children’s growth in learning at school. Educators are knowledgeable, caring, reflective, and resourceful professionals who bring diverse social, cultural, and linguistic perspectives to their understanding of children’s development within the Kindergarten program. Educators support children and families in high-quality, intentional, play-based learning environments, using varied learning and teaching strategies and assessment approaches to address individual children’s needs and ensure meaningful learning opportunities for every child.

In Kindergarten classrooms that have an educator team, with a teacher and an early childhood educator, the team members have the benefit of a collaborative and reflective partnership. Educator team members have complementary skills that enable them to create a nurturing and stimulating learning environment that supports the unique needs of each child. While an educator team will reflect the uniqueness of its members, the hallmark of all successful partnerships is an atmosphere of mutual respect, trust, and open communication.

Teachers and early childhood educators work together²⁰ to plan and implement the program and to maintain a healthy physical, emotional, and social learning environment. They collaborate in observing, monitoring, and assessing the progress and development of the children in Kindergarten and in communicating with families. The teacher ensures that the appropriate Kindergarten Communication of Learning templates are fully and properly completed and processed (Ontario Ministry of Education, 2016, p. 13).

In all Kindergarten classrooms, educators provide numerous and varied opportunities for children to develop and refine their learning strategies, attitudes, skills, and knowledge. They continually engage the children in critical reflection and inquiry, in testing theories, and in discussing and questioning approaches. They use a variety of instructional, assessment, and evaluation strategies to meet the needs of individual children. The learning experiences they provide enable children to make meaningful connections between what they already know and can do and their new learning. Educators reflect on the impact of the learning opportunities they provide to determine next steps in the learning, so that every child can reach his or her full potential.

Strong connections between the home and the school support children’s learning and overall sense of well-being. As a part of good practice, educators communicate with parents about what their children are learning, through ongoing formal and informal conversations, special events, and other means of regular communication (see the previous section, “Parents and Families”). Communication enables parents to work in partnership with the school, promoting discussion, follow-up at home, and learning in a family context.

20. See s. 264.1 of the Education Act for requirements pertaining to the teacher and the designated early childhood educator in Kindergarten.

Kindergarten educators provide children with frequent opportunities to communicate their understanding, practise their skills, and apply new learning. Through ongoing assessment, they give children the specific, descriptive feedback they need in order to further develop and refine their learning. By creating a learning environment that promotes the development of collaborative skills and critical and creative thinking skills, educators also help children become thoughtful problem solvers and effective communicators. Opportunities to relate what they know and can do in Kindergarten to contexts beyond the classroom and the school motivate children to learn and to become lifelong learners.

Reflective educators constantly test traditional views and accepted routines or approaches and consider new ways of thinking about their work. In the same way that children learn by questioning and testing their theories, educators engage in research to explore and test new ideas and adjust their practice to best meet the needs of children and families. In this way, educators engage in both formal and informal collaborative inquiry. Information on the critical function of the educator as researcher can be found in the resource given below.



READ: "Collaborative Teacher Inquiry", *Capacity Building Series* (September 2010).

PRINCIPALS

The principal works in partnership with educators and parents to ensure that each child has access to the best possible educational experience. The principal is a community builder who plays an important role in creating and sustaining a positive school environment that is welcoming to all, and who ensures that all members of the school community are kept well informed.

The principal is an integral part of the Kindergarten team, working in partnership with the educators, families, and caregivers to ensure that every child has access to the best possible early learning experiences. The principal

ensures that the Kindergarten program is being properly implemented in all classrooms and learning environments, and that teaching approaches align with the research-informed, pedagogically sound, and developmentally appropriate practices outlined in this document. The principal also ensures that appropriate resources are made available for educators and children.

Principals play an important role in building a collaborative school environment. They facilitate educators' participation in professional learning communities and other professional learning opportunities that promote partnerships, reflection, and growth, and that enhance continuity of learning and teaching in all areas of early learning programs from Kindergarten to Grade 2.



VIEW: "Professional Collaborative Inquiry That Makes a Difference"

Principals are also responsible for ensuring that every child who has an Individual Education Plan (IEP) is receiving the modifications and/or accommodations described in his or her plan – in other words, for ensuring that the IEP is properly developed, implemented, and monitored.

Principals support and value the development, implementation, and evaluation of coherent programs, and provide leadership in developing a vision and philosophy to guide pedagogy. They create a positive school climate by implementing school-wide policies and practices that respect all educators and children and their families. Principals also ensure that the work environment throughout the school is one in which the practice of both Kindergarten teachers and early childhood educators is valued and supported, and that the benefits of play-based learning and learning through inquiry are recognized and supported.

Working together with the Kindergarten educators, the principal should ensure that open lines of communication exist between the school, families of children in the program, child care providers, and the community. Ongoing

communication between all education partners will help to ensure that families see themselves as valued members of the school community and will encourage them to participate in their children's education.

 **READ:** "Documentation in Full-Day Kindergarten (FDK)", *Principals Want to Know* (February 2012)

"Supporting Educator Teams in Full-Day Kindergarten (FDK)", *Principals Want to Know* (February 2012)

"Intentional, Play-Based Learning in Full-Day Kindergarten (FDK)", *Principals Want to Know* (February 2012)

THE LOCAL COMMUNITY

Community partners are an important resource for a school's Kindergarten program. Relationships with community organizations that provide high-quality child care and early years programs for children and families can provide valuable support and enrichment for learning. These organizations can provide expertise, skills, materials, and programs that are not available through the school or that supplement those that are.

Partnerships with such organizations benefit not only the children and their families but also the life of the community. For example, children and families can develop a sense of belonging to the larger community through engagement

with members of the local community, and the community can be enriched through learning about the young children and their families who live in the neighbourhood. Community support for children's engagement with the outdoors in their local environment contributes to the children's ability to value the natural world.

Schools and school boards can play a role by coordinating efforts with community partners. They can involve community volunteers in supporting and promoting a focus on play and inquiry-based learning both inside and outside the school. For example, community partners can be included in events held at the school, such as meetings or programs to help ensure children's smooth transition to Kindergarten. Educators may also find opportunities for children to participate in community events, such as programs offered in public libraries, community centres, museums, and provincial parks and conservation areas. Such opportunities are especially beneficial when they support children's learning in the Kindergarten program, are designed for educational purposes, and provide descriptive feedback to the children. In choosing community partners, schools should build on existing links with their local communities and create new partnerships in conjunction with ministry and school board policies.

PART 4: THE LEARNING EXPECTATIONS

Part 4 sets out the learning expectations for the Kindergarten program. The overall expectations are listed, by frame, in Chapter 4.2. All of the expectations – overall and specific – are set out in the expectation charts for each frame in Chapters 4.3 through 4.6. Chapter 4.1 contains explanations of all of the elements of the expectation charts.

Although it is natural for educators to turn first to the section in a program document that outlines what the children are expected to know and be able to do, it is strongly recommended that educators review the information in Parts 1 to 3 *before* delving into Part 4. Parts 1 to 3 provide the information and ideas underpinning the approach illustrated in Part 4. Parts 1 to 3 serve as the “provocation” for the professional reflection and collaborative inquiry that will enable educators to support play-based learning effectively.

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4.1 USING THE ELEMENTS OF THE EXPECTATION CHARTS

Children’s learning in the Kindergarten program is described in terms of the following elements, which are key components of the expectation charts:

- ***the overall and specific expectations*** that relate to each of the four frames (see Chapters 4.3, 4.4, 4.5, and 4.6)
- ***the conceptual understandings***, which are associated with the overall expectations
- ***examples of ways in which thinking and learning are made visible***

The sections that follow explain how each of the above elements can be used to support professional learning. In addition, examples of educators’ ***professional learning conversations*** and ***reflections*** are interspersed throughout the expectation charts, and are important elements intended as further support for educators.

THE LEARNING EXPECTATIONS

Two sets of expectations – *overall expectations* and *specific expectations* – describe children’s learning in the Kindergarten program. Each expectation is associated with one or more of the frames, or broad areas of learning, of the program. All program expectations must be accounted for in instruction and assessment (see *Growing Success – The Kindergarten Addendum*, 2016 p. 10).

Children’s growth in learning over the two years of the Kindergarten program is assessed in relation to the knowledge and skills described, in general terms, in the overall expectations (OEs) in each frame. Educators focus on the overall expectations when co-constructing learning with the children. They also develop

learning goals and success criteria with the children in relation to the overall expectations and conceptual understandings (see “Noticing and Naming the Learning: The Link to Learning Goals and Success Criteria” in Chapter 1.4, “Assessment and Learning in Kindergarten”).

While the overall expectations are broad in nature, the specific expectations (SEs) describe in greater detail the knowledge and skills related to the overall expectations. The specific expectations identify a range of ways in which children might reveal and apply learning. The specific expectations are intended to assist educators in observing and describing the range of behaviours, knowledge, understanding of concepts, skills, and strategies that children demonstrate as they make progress in their learning in relation to the overall expectations. In addition, as stated in *Growing Success – The Kindergarten Addendum* (2016, p. 10), “Educators will use their professional judgement, supported by information provided in *The Kindergarten Program*, to determine which specific expectations will be used to evaluate growth and learning in relation to the overall expectations within each frame, and which ones will be accounted for in instruction and assessment but not necessarily evaluated.”

CONCEPTUAL UNDERSTANDINGS

Conceptual understandings are statements of essential ideas that accompany each of the overall expectations. Conceptual understandings include concepts, skills, attitudes, and habits of mind.

Children discover information and learn concepts, skills, strategies, and processes as they think, learn, and inquire in a play-based environment. They also make connections and construct meaning as they engage in play-based explorations and inquiries. For some children this learning process happens slowly, and for others more quickly, but all children are capable of understanding a wide range of concepts. Knowledge of a variety of broad concepts helps children make sense of what they learn and helps them apply it in new contexts. Educators play a critical role in making this thinking and learning visible to the children, the children's families, and colleagues in the school system.

The conceptual understandings are presented in a variety of styles to allow educators the flexibility to adapt them for use in their classrooms and with families. Some are expressed as learning goals, some are ideas that could be integrated with other conceptual understandings, and some are expressed from the children's point of view (e.g., "I can use language ... to express thoughts" [OE3]).

Educators can use conceptual understandings by, for example:

- focusing on specific concepts in response to children's observations, ideas, theories, and wonderings;
- asking the children related questions as they co-construct learning with them (e.g., "Where are all the places you see people reading?" [OE9]; "Where can we find numbers?" [OE15]);
- using relevant concepts as focal points when discussing children's learning with parents or other family members;
- engaging in discussion with other educators about the meaning or significance of children's observations and explorations (e.g., the complexity of thinking that a child's wonderings or observations suggest).

PROFESSIONAL LEARNING CONVERSATIONS AND REFLECTIONS

Reflective practitioners *integrate theoretical frameworks, research findings and their own daily experiences to guide their interactions with young children and their families. Reflective practitioners figure out how the children in their program think, learn and make sense of the world.*

(Ontario Ministry of Education, 2014b, p. 13)

Educators are responsible for implementing a program that is thoughtfully planned, challenging, engaging, integrated, developmentally appropriate, and culturally and linguistically responsive, and that promotes positive outcomes for all children. Examples of professional learning conversations provided in the expectation charts in Chapters 4.3 to 4.6 illustrate the kinds of conversations that enable educators to accomplish these goals. The conversations are drawn from Ontario educators' collaborative professional learning sessions. These examples are models of the kinds of discussions that educators might have as they focus on particular challenges that arise during a day. They illustrate the insights and innovations that collaborative reflection can provide to support children's learning and encourage families' involvement. They are intended only to serve as a guide, not to limit the scope of the professional learning conversations in which educators engage.

All professional learning conversations appear at the end of the expectation chart to which they relate. Conversations that relate broadly to both an overall expectation and its related specific expectations are referenced after the overall expectation (see, for example, OE29 in Chapter 4.3, "Belonging and Contributing"). Those that relate to a specific expectation are referenced after that expectation (see, for example, SE11.8 in Chapter 4.5, "Demonstrating Literacy and Mathematics Behaviours").

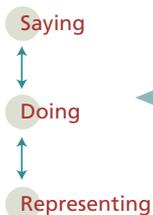
The examples of reflections ("Inside the Classroom") are likewise intended as guides that educators might find helpful in thinking about issues.

WAYS IN WHICH THINKING AND LEARNING ARE MADE VISIBLE

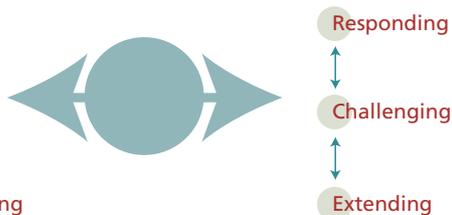
The expectation charts in Chapters 4.3 to 4.6 are designed to provide concrete examples of the pedagogy that has been outlined in Parts 1 and 2 of this document. The examples show how educators make thinking and learning visible in practice, as they interact with children to co-construct learning.

The columns in the expectation charts entitled “Ways in Which Children Might Demonstrate Their Learning” and “The Educators’ Intentional Interactions” provide illustrations of the multiple learning connections that occur in an effective Kindergarten program. The examples illustrate in a variety of contexts how children show what they are thinking and learning, how children learn from and with each other, how educators can respond to children’s thinking, and how educators can challenge the children and extend their learning. The examples also indicate relationships between the children and the learning materials. The contents of the two columns are described in more detail in the following sections. The diagram below shows various types of interactions.

Ways Children Demonstrate Their Learning



The Team’s Intentional Interactions



Ways in Which Children Might Demonstrate Their Learning

The material in this column provides examples of ways in which children make their thinking and learning visible to themselves and others – saying, doing,

and representing – within various contexts and relationships. *Children are not required to demonstrate their learning in all three ways.* While the examples given within each frame under “Saying” and “Doing” happen within the school day, there are some examples under “Representing” of ways in which learning may be demonstrated at home and shared with the educators by parents and other family members. When parents and families are invited to share stories about their children’s learning at home, they become more active and engaged partners in their children’s learning.

Saying

These are examples of what a child might say when engaged in learning alone or with others. They illustrate ways in which children might articulate observations or explain their thinking related to the knowledge and skills outlined in the expectation. The examples emphasize that there are multiple ways in which children demonstrate what they know and can do, what they wonder about, and what their working theories are.

These examples emphasize the importance of encouraging children to communicate their learning, and they provide some guidance for educators on how to model language use and the processes of thinking and reasoning for the children. As a result, the examples given may not always reflect the language actually used by the children.

Educators record examples of children’s talk as part of their ongoing pedagogical documentation process. In addition, they use examples of children’s talk to report to parents. It is essential that the children’s home language is valued and encouraged.

Doing

Four- and five-year-old children learn through active engagement, building on prior experiences, observations, experimentation, and social interaction. The

social and physical environment invites their active participation and provides concrete challenges to think deeply about and problems to solve. These examples illustrate how learning happens for young children in a differentiated learning environment. Children's learning can be observed in very nuanced movements and non-verbal communication (e.g., gestures, positions, facial expressions, proximation). It is important to value these expressions of learning – that is, to see children as capable of complex thinking that can be revealed in unique ways (see Chapter 1.4, “Assessment and Learning in Kindergarten”).

Representing

Children are engaged in multiple inquiries in the Kindergarten program. They are naturally curious and try to make sense of their world through an inherently inquiring mindset. Their learning often involves formulating questions and trying to devise and communicate their working theories or solutions. Representation involves describing phenomena to oneself or communicating descriptions or ideas to others. When young children are engaged in their inquiries, they inevitably develop skills and understanding of concepts that are associated with more than one frame, or learning area. The examples provided illustrate how children represent their thinking in different contexts and in different ways (e.g., painting, talking, creating a structure, writing).

The Educators' Intentional Interactions

The material in this column provides examples that illustrate how educators engage with children's learning and develop their own professional capabilities as researchers into children's learning.

Responding

In the sample responses provided, the educators purposefully consider possible avenues of exploration for the children, basing them on analysis of assessment information gleaned from observations. They often adjust their practice

moment by moment in response to immediate events or conversations in their classrooms, following up on something a child has said or done to help the child make connections to prior knowledge. For example, the educators may respond by:

- adding or taking away a material, after negotiating with the children;
- asking a probing or clarifying question of the child;
- saying something to the child such as “I notice that you ...”;
- gathering and recording assessment information.

In addition, the sample responses provide examples of children's actions and contexts for learning that principals and family members can look for and carefully observe.

Challenging

The planning of children's learning is based on professional inquiry. Educators challenge individual children in order to support not only their development but also the development of all of the children in the class. As they respond to the children and develop further learning experiences, educators closely observe and document each child's progress. The examples under “Challenging” illustrate how educators use this information to scaffold the children's learning either by presenting new learning opportunities or by adding another element to the learning. For example, educators might do the following:

- ask a question that involves critical thinking, such as “How did you figure that out?”
- add a new material and observe and document its effect on the children's learning
- invite the children to explain or share their learning with others

Extending

Educators play a critical role in extending the children's learning. They meet the children "at the edge" of their learning and support them in gradually applying their thinking in different contexts. For example, they provide opportunities for children to extend their learning at a different learning area, in a different group, with a different text, with different children, or in multiple contexts.

The educators analyse and interpret the evidence that they have collected. They are able to assess children's developmental progress and design future contexts for learning. Parents and families also contribute to the documentation by sharing their understanding of learning that happens at home.

Educators continually gauge children's progress and make connections that recognize and expand children's learning. If a child is struggling, educators who understand child development are able to identify specific strategies or seek out other resources and supports.

4.2 THE OVERALL EXPECTATIONS IN THE KINDERGARTEN PROGRAM, BY FRAME

THE EXPECTATIONS AND THE FRAMES

The overall expectations (OEs) in the Kindergarten program are listed in the following chart, and the frame or frames with which each one is associated are indicated in the four right-hand columns. (See “The Four Frames of the Kindergarten Program”, in Chapter 1.1.) In some cases, an overall expectation is connected with more than one frame.

The expectations are numbered from one to thirty-one (OE1 to OE31) to allow for quick reference in professional learning conversations. The numbering does not suggest an order of learning or development, or a hierarchy of importance or priority. It is important to bear in mind that the various aspects and areas of learning are interconnected. The approach taken in the organization of overall and specific expectations in this document reflects the integrated way in which learning occurs in children’s play and inquiry in Kindergarten.

After the list of overall expectations there are four chapters (4.3 to 4.6) – one dedicated to each of the four frames – that illustrate pedagogy in connection with the overall expectations and specific expectations (SEs) that relate to the frame.²¹ Each chapter begins with a list of the OEs associated with the frame, followed by a chart for each OE and the conceptual understandings that are associated with it. Each chart provides examples illustrating how children and

21. See the appendix for a complete list of the SEs that are related to each OE. The appendix provides an expanded chart, modelled on the chart in this chapter that lists only the OEs. Educators may find the appendix chart useful for quick reference, as it shows at a glance the frame or frames with which each of the SEs related to an OE is most closely associated.

educators, as observers and inquirers, “make thinking and learning visible” in the context of the frame. (The examples are intended *only as illustrations* and as a guide for educators; they are not descriptions of required interactions.)

When an overall expectation relates to more than one frame – for example, OE1: *communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts* – it appears in *each* of the relevant frames, along with the specific expectations that relate to that frame. So, when OE1 is discussed in Chapter 4.4, “Self-Regulation and Well-Being”, the relevant specific expectations are included and the examples and discussion reflect communication *as it relates to self-regulation and well-being*; when it appears in Chapter 4.5, “Demonstrating Literacy and Mathematics Behaviours”, the specific expectations and examples included reflect communication *as it relates to literacy and mathematics behaviours*.

In the following chart, the four frames are represented by the four columns on the right, as follows:

BC – Belonging and Contributing

SRWB – Self-Regulation and Well-Being

DLMB – Demonstrating Literacy and Mathematics Behaviours

PSI – Problem Solving and Innovating

An **x** in a column indicates that the expectation is associated with that frame. An expectation may be associated with one or more frames. Clicking on an **x** takes the reader directly to the overall expectation (and its expectation chart) in the chapter for that frame (Chapter 4.3, 4.4, 4.5, or 4.6).

The Overall Expectations in the Kindergarten Program, by Frame

<i>As children progress through the Kindergarten program they:</i>	BC	SRWB	DLMB	PSI
1. communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts	X	X	X	X
2. demonstrate independence, self-regulation, and a willingness to take responsibility in learning and other endeavours		X		
3. identify and use social skills in play and other contexts	X	X		
4. demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts	X	X		X
5. demonstrate an understanding of the diversity among individuals and families and within schools and the wider community	X			
6. demonstrate an awareness of their own health and well-being		X		X
7. participate actively and regularly in a variety of activities that require the application of movement concepts		X		
8. develop movement skills and concepts as they use their growing bodies to move in a variety of ways and in a variety of contexts		X		

<i>As children progress through the Kindergarten program they:</i>	BC	SRWB	DLMB	PSI
9. demonstrate literacy behaviours that enable beginning readers to make sense of a variety of texts			X	X
10. demonstrate literacy behaviours that enable beginning writers to communicate with others			X	X
11. demonstrate an understanding and critical awareness of a variety of written materials that are read by and with their educators			X	
12. demonstrate an understanding and critical awareness of media texts			X	
13. use the processes and skills of an inquiry stance (i.e., questioning, planning, predicting, observing, and communicating)				X
14. demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings			X	X
15. demonstrate an understanding of numbers, using concrete materials to explore and investigate counting, quantity, and number relationships			X	

<i>As children progress through the Kindergarten program they:</i>	BC	SRWB	DLMB	PSI
16. measure, using non-standard units of the same size, and compare objects, materials, and spaces in terms of their length, mass, capacity, area, and temperature, and explore ways of measuring the passage of time, through inquiry and play-based learning			X	
17. describe, sort, classify, build, and compare two-dimensional shapes and three-dimensional figures, and describe the location and movement of objects, through investigation			X	
18. recognize, explore, describe, and compare patterns, and extend, translate, and create them, using the core of a pattern and predicting what comes next			X	
19. collect, organize, display, and interpret data to solve problems and to communicate information, and explore the concept of probability in everyday contexts			X	
20. apply the mathematical processes to support the development of mathematical thinking, to demonstrate understanding, and to communicate thinking and learning in mathematics, while engaged in play-based learning and in other contexts			X	X

<i>As children progress through the Kindergarten program they:</i>	BC	SRWB	DLMB	PSI
21. express their responses to a variety of forms of drama, dance, music, and visual arts from various cultures and communities			X	
22. communicate their thoughts and feelings, and their theories and ideas, through various art forms	X	X	X	X
23. use problem-solving strategies, on their own and with others, when experimenting with the skills, materials, processes, and techniques used in drama, dance, music, and visual arts				X
24. use technological problem-solving skills, on their own and with others, in the process of creating and designing (i.e., questioning, planning, constructing, analysing, redesigning, and communicating)				X
25. demonstrate a sense of identity and a positive self-image	X			
26. develop an appreciation of the multiple perspectives encountered within groups, and of ways in which they themselves can contribute to groups and to group well-being	X			

(continued)

<i>As children progress through the Kindergarten program they:</i>	BC	SRWB	DLMB	PSI
27. recognize bias in ideas and develop the self-confidence to stand up for themselves and others against prejudice and discrimination	X			
28. demonstrate an awareness of their surroundings	X			
29. demonstrate an understanding of the natural world and the need to care for and respect the environment	X			
30. demonstrate an awareness of themselves as dramatists, actors, dancers, artists, and musicians through engagement in the arts	X			
31. demonstrate knowledge and skills gained through exposure to and engagement in drama, dance, music, and visual arts	X			

4.3 BELONGING AND CONTRIBUTING

The feeling of belonging, in the widest sense, contributes to inner well-being, security, and identity. Children need to know that they are accepted for who they are. They should know that what they do can make a difference and that they can explore and try out new activities. ... [The program] should recognise, acknowledge, and build on each child's special strengths and allow each to make a contribution or to "make his or her mark", acknowledging that each child has the right to active and equitable participation in the community.

(New Zealand Ministry of Education, *Te Whāriki: Early Childhood Curriculum*, 1996, pp. 54, 64)

➡ For more information about this frame, see Chapter 2.1, “Thinking about Belonging and Contributing”.

➡ For a complete list of the overall expectations in the Kindergarten program with their related specific expectations, see the appendix to this document.

OVERALL EXPECTATIONS

As children progress through the Kindergarten program, they:

1. communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts
3. identify and use social skills in play and other contexts
4. demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts
5. demonstrate an understanding of the diversity among individuals and families and within schools and the wider community
22. communicate their thoughts and feelings, and their theories and ideas, through various art forms
25. demonstrate a sense of identity and a positive self-image
26. develop an appreciation of the multiple perspectives encountered within groups, and of ways in which they themselves can contribute to groups and to group well-being
27. recognize bias in ideas and develop the self-confidence to stand up for themselves and others against prejudice and discrimination
28. demonstrate an awareness of their surroundings
29. demonstrate an understanding of the natural world and the need to care for and respect the environment
30. demonstrate an awareness of themselves as dramatists, actors, dancers, artists, and musicians through engagement in the arts
31. demonstrate knowledge and skills gained through exposure to and engagement in drama, dance, music, and visual arts

All children are viewed as competent, curious, capable of complex thinking, and rich in potential and experience.



EXPECTATION CHARTS

OE1

As children progress through the Kindergarten program, they:

communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts

Conceptual Understandings

- Communication has the power to influence and encourage change.
- We learn about the world, others, and ourselves through listening.
- The ways in which people communicate are diverse and are influenced by their background experiences.
- Knowledge is socially constructed – created by people learning, working, and investigating together – and can be shared.
- Communication includes non-verbal behaviours and gesturing. We can experiment with words to achieve intended effects.
- Oral language is the basis for literacy, thinking, and relating in all languages.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>1.2 listen and respond to others, both verbally and non-verbally (<i>e.g., using the arts, using signs, using gestures and body language</i>), for a variety of purposes (<i>e.g., to exchange ideas, express feelings, offer opinions</i>) and in a variety of contexts (<i>e.g., after read-alouds and shared reading or writing experiences; while solving a class math problem; in imaginary or exploratory play; in the learning areas; while engaged in games and outdoor play; while making scientific observations of plants and animals outdoors</i>)</p>	<p>Saying <i>"I saw Aiden add the block, and now it made it even taller."</i> <i>"I am asking Manny to teach me his language. I heard him talk to his nana."</i> <i>"We asked Sean how to use these, and he showed us how because he plays with them all the time."</i></p> <p>Doing The educators decide to document how often children physically (as a form of non-verbal</p>	<p>Responding The educators plan to observe children, giving them more time to communicate their thinking, both verbally and non-verbally. They use strategies such as waiting for the child to speak first while silently counting to a certain number before saying anything (wait time). They communicate to the children that they are trying to listen more and listen differently, and to give the children more time to communicate their thinking.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>communication) make adjustments to encourage belonging and contributing to communication. They observe children moving closer, leaving space, stopping their play and looking up, raising an eyebrow, smiling, moving away, and/or inviting children in with a hand wave.</p> <p>Representing</p> <p>A small group of children decide to document non-verbal communication through photographs. Another group of children wonder what would happen if we couldn't use language to communicate.</p>	<p>Challenging</p> <p>The educators begin to observe children in all contexts, with a focus on watching their non-verbal communication. They document (in photos) the multiple ways that children/people communicate and notice and name things like body language and gestures. To provoke further discussion, they add photos of American Sign Language (ASL) to the photos of children's non-verbal communication.</p> <p>Extending</p> <p>Over time, the educators revisit their pedagogical documentation, including their videos and photographs, talking with the children about all the different ways people communicate their thinking and learning. The evidence from their documentation of both verbal and non-verbal communication (evidence gathered to support assessment <i>for</i> learning) informs how they respond to the children.</p> <p>As the documentation is shared with the children, the children use new gestures and talk (in many cases) about what they were thinking at the time the learning was taking place. This interaction serves as assessment <i>for</i> learning. It also serves as a form of assessment <i>as</i> learning, supporting the children's metacognition (learning about their own learning) when the children and educators talk about how they are learning and what helps them to learn.</p>

OE3

As children progress through the Kindergarten program, they:
identify and use social skills in play and other contexts

Conceptual Understandings

- People develop skills to help negotiate social relationships in a variety of contexts.
- My words and actions can affect others.
- People can have differing points of view.
- I am responsible for my choices and actions.
- I can use language to negotiate and express thoughts.
- Knowledge is socially constructed – created by people learning, working, and investigating together – and can be shared.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
3.1 act and talk with peers and adults by expressing and accepting positive messages (<i>e.g., use an appropriate tone of voice and gestures; give compliments; give and accept constructive criticism</i>)	Saying <i>"Fatima helped me pick up the blocks."</i> <i>"We moved over so he could see the pictures."</i> <i>"You can help us, but this time be careful you don't knock them over."</i> <i>"That's all right, you can go first."</i> <i>"Can you help us find another way to make this?"</i> Doing One of the children finds her friend's name card in the basket and hands it to her as she arrives in the room.	Responding The educators observe that children in the blocks area are taking blocks from a structure that other children are building. The educators decide to model some strategies for the children on cooperating with others. They also decide to notice and name positive strategies used by the children (<i>e.g., "I noticed you listening to Jay's suggestions for building your tower"</i>) in order to support the building of good relationships among the children.

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>Following a session on expressing and accepting positive messages, several parents report that their children are using this skill at home with siblings and extended family members.</p>	<p>Challenging</p> <p>While reading a book aloud, an educator poses the following questions: <i>“Why is the main character in the story scared? I noticed that he was worried that he wasn’t going to have any friends if people knew he was afraid of going down the slide. Have you ever felt the way this character does? How would you feel? What did his friends do to make him feel better?”</i></p> <p>Extending</p> <p>The educators notice that the children’s relationships are becoming more cooperative and collaborative. They begin to think and reflect on their feedback and conversations with the children. After analysing their pedagogical documentation, they notice that the children are contributing to each other’s learning in various ways. Using their assessment <i>for</i> learning, they now decide that the time is right to model ways in which children can offer and accept feedback from both the educators and the other children (<i>e.g., “I like that you made the base of your tower so broad. What made you decide to do that?”</i>).</p>

OE4

As children progress through the Kindergarten program, they:

demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts

Conceptual Understandings

- We can use our problem-solving skills in social situations.
- There are many ways to solve a problem.
- I can think about and adapt my actions, depending on the context.
- We make choices and decisions when solving problems.
- Problems can provide an interesting challenge.
- Problems can have many solutions.
- There are many kinds of relationships.
- Knowledge is socially constructed – created by people learning, working, and investigating together – and can be shared.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
4.1 use a variety of strategies to solve problems, including problems arising in social situations (<i>e.g., trial and error, checking and guessing, cross-checking – looking ahead and back to find material to add or remove</i>)	Saying <i>“I wanted to help, and this time I remembered to ask first.”</i> <i>“The snack sign says, ‘Three apple slices,’ but I took four.”</i> <i>“I tried to fit them all on the shelf, but they wouldn’t fit. Then I had to start all over again, and then Sasha came to help me.”</i>	Responding An educator makes an observation note on a conversation with a child about how she could go back and try again to enter the group in order to help. Challenging The educators reflect after revisiting some of their pedagogical documentation. They begin to

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>A group of children are working with paints. One of the children accidentally splashes paint on another child. Another child asks an educator for help when that child begins to cry.</p> <p>Representing</p> <p>After listening to a story where the main character gets into all sorts of trouble, sometimes by not being honest, some of the children decide to write a letter to the character, with suggestions for what he could have done instead.</p>	<p>question the frequency and the timing of their interventions in children's social challenges. Using their pedagogical documentation as evidence, they decide to try to give children more "space" to attempt to solve daily social challenges. They believe children are competent and capable but recognize that their (the educators') practices may not always reflect this belief. As they consciously practise a more trusting approach, they immediately notice that children are using social strategies independently and in unexpected ways. The educators observe children's strategies for including others, and how they acknowledge or know about group members' contributions even if there are no words spoken. The educators share their thinking and observations with the children.</p> <p>Extending</p> <p>The educators encourage children to go to others in the class for help not only with their zippers and buttons but also with other classroom challenges, such as taking a picture with the new tablet device or opening juice boxes at the snack table. They acknowledge every child as being able to help others with something as the children's needs and abilities change from day to day.</p>

OE5

As children progress through the Kindergarten program, they:

demonstrate an understanding of the diversity among individuals and families and within schools and the wider community

Conceptual Understandings

- It is essential for us all to honour and understand diverse cultural, linguistic, and personal preferences.
- I am a member of a community. Some people in the community are the same as me and some are different from me.
- I can have many roles in the community.
- We are learning that all persons have value and that we can benefit from accepting and welcoming individual differences.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>5.1 demonstrate respect and consideration for individual differences and alternative points of view (e.g., help a friend who speaks another language; adapt behaviour to accommodate a classmate's ideas)</p>	<p>Saying "I agree with ..." "That is just like when I ..." "OK, we could try it that way." Doing With their reading buddies, the children read books about different kinds of families and show respect for and acceptance of children who identify with families that look different from their own.</p>	<p>Responding "I notice that you listened to Dana's idea about how to make your tower more stable." "I know you were upset when Karl splashed paint on your picture. How do you think Karl is feeling about what happened?" Challenging The educators observe a group of children debating about what they should build with the blocks. One</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A child sketches the steps in getting ready to go home for the day, to help a new child who is learning ASL.</p>	<p>of the educators scaffolds the children's learning by prompting their thinking and encouraging respect for each child's suggestion:</p> <p><i>"Everyone has a good suggestion about what to build with the blocks. How are you going to decide what to build?"</i></p> <p>Extending</p> <p>The educators observe the children to determine the specific contexts in which the children demonstrate consideration of other points of view. They analyse their pedagogical documentation and assess <i>for</i> learning. They also talk about the impact and importance of multiple perspectives. They then consider areas where the learning needs to be extended and plan to build <i>"name"</i>, <i>"notice"</i>, <i>"accept"</i>, and <i>"prompt"</i> into their learning plans.</p>
<p>5.2 talk about events and retell, dramatize, or represent stories or experiences that reflect their own heritage and cultural background and the heritage and cultural backgrounds of others (<i>e.g., traditions, cultural events, myths, Canadian symbols, everyday experiences</i>)</p>	<p>Saying</p> <p><i>"That is my language."</i></p> <p><i>"My family ..."</i></p> <p><i>"My mama told me ..."</i></p> <p>Doing</p> <p>In the dramatic play area, children role-play various events from their experiences.</p>	<p>Responding</p> <p>An educator invites children's family members into the classroom to share stories of important family events, and then invites the children to talk about those events.</p> <p>Challenging</p> <p>An educator observes a child writing about her family picnic. The educator supports the child by "stretching out" the words to help the child hear all the sounds in the words the child is trying to write.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A child brings in a dual-language book he borrowed from the library to show his class a story in his language.</p>	<p>An educator takes a photograph of an intricate structure with many levels, connections, and forms. The educators share the photograph with the family of the child who built the structure. The family explains that this represents the story of an eagle that the Elders tell. The educators invite an Elder to the classroom to share the story with the children.</p> <p>Extending</p> <p>An educator places books in the blocks area that illustrate homes and structures from around the world (making sure that the images do not represent stereotypes).</p>

OE22

As children progress through the Kindergarten program, they:

communicate their thoughts and feelings, and their theories and ideas, through various art forms

Conceptual Understandings

- There are many ways to communicate thinking, theories, ideas, and feelings.
- The arts provide a natural vehicle through which we can explore and express ourselves in a variety of creative ways.
- We can discover and interpret the world around us through the arts.
- We develop our ability to communicate through our engagement in imaginative and innovative thought and action.
- Knowledge is socially constructed – created by people learning, working, and investigating together – and can be shared.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>22.1 communicate their ideas about something (e.g., a book, the meaning of a word, an event or an experience, a mathematical pattern, a motion or movement) through music, drama, dance, and/or the visual arts</p>	<p>Saying <i>“That poem has a pattern in it. I can clap the pattern while you say the words.”</i> (Child shows a drawing): <i>“I drew how rainbows are made.”</i></p> <p>Doing When trying to show the motion of a kite flying, the child stands up and throws her hands in the air and says, <i>“Whooooosh”</i>.</p> <p>Representing A family member shares that one of the children sings songs learned in the classroom to his baby sister, and she falls asleep every time.</p>	<p>Responding An educator plays a song for the children and says, <i>“The song says getting together makes people happy. Does getting together make you feel happy? Why?”</i></p> <p>Challenging The educators show the children a series of paintings and keep the paintings on display for a period of time. They listen to and record the children’s conversations about the paintings.</p> <p>Extending The educators revisit the documentation of the conversations about the paintings with the children and talk about and build on each other’s thinking.</p>

OE25

As children progress through the Kindergarten program, they:
 demonstrate a sense of identity and a positive self-image

Conceptual Understandings

- It is essential for us to honour every person’s uniqueness.
- We learn about our strengths and come to understand how we belong and how we can contribute.
- We can contribute our unique knowledge when we engage with others.
- We learn adaptive, management, and coping skills, and practise communication and critical thinking skills, in order to learn how to build relationships.
- It is important to pay attention to, and share, various different perspectives.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>25.1 recognize personal interests, strengths, and accomplishments</p>	<p>Saying</p> <p><i>"I can throat sing."</i></p> <p><i>"I helped my dads set the table."</i></p> <p><i>"People know that I can help them figure out the letters because I know how to write."</i></p> <p><i>"You can find me in the blocks because that is where I always like to play."</i></p> <p>Doing</p> <p>After learning how to do up her own zipper, a child offers to help other children with the zippers on their coats.</p> <p>Representing</p> <p>After completing a drawing of her family, a child exclaims, <i>"I made a picture to put up in our [class] art gallery. It took me so long, but I wanted to make my whole family."</i></p> <p>A child shares his growing ability to make his name. He points to an older representation and says <i>"I used to make it like that."</i> Then, showing the representation he had just completed, notes, <i>"Now I can make it like this with the 'E' like this 'e'."</i></p>	<p>Responding</p> <p>An educator notices and names a child's strengths and accomplishments:</p> <p><i>"You were really thinking about how to make your structure stable."</i></p> <p><i>"You learned to do up your coat, which was so hard for you to do before."</i></p> <p><i>"You made a space for Devi to join you."</i></p> <p>Challenging</p> <p>A group of children use five cubes to see how many different number stories they can make for the number "5". An educator invites the children to share their number stories with another group of children.</p> <p>Extending</p> <p>The educator then increases the number of cubes and asks the children to create number stories for the new number.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>25.2 identify and talk about their own interests and preferences</p>	<p>Saying</p> <p><i>“On the weekend, we went to see the reptiles at the zoo. I can tell everyone what I learned about the snakes ’cause they are my favourite.”</i></p> <p><i>“I like spaghetti better than pizza. I put that on the class graph.”</i></p> <p><i>“Can you help me find some stories about bugs?”</i></p> <p>Doing</p> <p>One child decides to share what she knows about snakes by creating a slide show with the help of her reading buddy.</p> <p>Representing</p> <p>After talking and thinking about different kinds of buildings in their school community, a group of children create a replica of one building with the blocks over several days.</p>	<p>Responding</p> <p>The educators observe the children talking about the things they like, such as animals, foods, and pastimes. They document the responses for use in future planning.</p> <p>Challenging</p> <p>The educators ask the children what changes they would like to make in the dramatic play area.</p> <p>Extending</p> <p>An educator works with a few children in a small group to make a list of the materials they need in order to change the dramatic play area, and then works with another small group of children to gather and set up the new materials.</p>
<p>25.3 express their thoughts (<i>e.g., about a science discovery, about something they have made</i>) and share experiences (<i>e.g., experiences at home, cultural experiences</i>)</p>	<p>Saying</p> <p><i>“I think that ...”</i></p> <p><i>“Look what I did. I ...”</i></p> <p><i>“In my family we ...”</i></p> <p><i>“I know how many there is – there’s five. I counted them.”</i></p> <p><i>“I think that ends like my name. It makes the same sound.”</i></p>	<p>Responding</p> <p>An educator observes children engaged in an inquiry at the water table, and asks them questions such as:</p> <p><i>“What did you notice about the way the water moved?”</i></p> <p><i>“What did you notice when you changed the size of the container?”</i></p> <p><i>“How did you work together as a team on your inquiry?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>After hearing a story, a group of children retell and dramatize the story using props at the sand table. They negotiate space and materials without talking with one another. They innovate on the story by using a different ending from the one in the familiar read-aloud they have just heard.</p> <p>A group of children and an educator are looking at the front cover of a book showing a young boy drinking from a hollowed-out gourd he has used to dip water from a river. The children wonder why he isn't drinking from a tap or a fountain. This leads to further conversations and reading.</p> <p>Representing</p> <p>A group of children tell and then show the class how they predicted and then discovered how to move water between two containers by using a tube.</p>	<p>Challenging</p> <p>An educator supports children to think more deeply about their inquiries by asking questions such as:</p> <p><i>“What do you think will happen when ...?”</i></p> <p><i>“What happened before and what happened after you ...?”</i></p> <p>Extending</p> <p>The educators make a video of children in a small group talking about a book they have just read. After viewing the video and analysing the information gathered, they determine that they need to extend the children's ability to reflect on their experiences and to present events, including their role in those events, in proper sequence. They project possibilities before revisiting the documentation with the children to invite their ideas.</p>

OE26

As children progress through the Kindergarten program, they:

develop an appreciation of the multiple perspectives encountered within groups, and of ways in which they themselves can contribute to groups and to group well-being

Conceptual Understandings

- Everyone needs to have a sense of belonging.
- We all need to be heard and have a voice in the groups to which we belong.
- It is important for all of us to listen to and consider the diverse viewpoints expressed in the groups to which we belong.
- We make different contributions to groups in different contexts.
- The norms and customs that govern our behaviour may be different in different groups.

Making Thinking and Learning Visible – Where both children and educators are observers and inquirers

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>26.1 understand that everyone belongs to a group/community (e.g., a family, a class, a religious community) and that people can belong to more than one group/community at a time</p> <p>26.2 understand that different groups/communities may have different ways of being and working together</p> <p>26.3 describe, both verbally and non-verbally, ways in which they contribute to the various groups to which they belong</p>	<p>Saying</p> <p><i>“Last night we had a family meeting. Everyone got to say what they wanted to do, even me and my little sister.”</i></p> <p><i>“At home I help take care of my baby sister. At school, I like to help tidy up the blocks.”</i></p> <p><i>“On Mondays I go to gymnastics. On Tuesdays I go to Hebrew school. On Fridays my bubbe and zaydee come for dinner.”</i></p> <p><i>“At home we eat dinner together at the table. But at Grandma’s we get to eat in front of the TV.”</i></p> <p>Doing</p> <p>After talking about the family meeting that took place at a child’s home, the educators observe the child suggesting to other children that they have a “family meeting” in the dramatic play area, to solve a dilemma that arose in their play.</p>	<p>Responding</p> <p><i>“Why is it important for adults to ask children for your thoughts and ideas about things?”</i></p> <p><i>“What are some other groups to which children in our class belong?”</i></p> <p><i>“Why do you think we do things differently at school than you do at home?”</i></p> <p>Challenging</p> <p>The educators decide to discuss with the children the concept of multiple perspectives on the same idea. They use spatial reasoning in mathematics to prompt the children to explore the concept. For example, the educators show the children an arrangement of cubes that would look different from multiple perspectives (side view, front view, back view). The children describe the quantity and the arrangement they can see from their viewpoint. The educators turn the figure and</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>After performing at a children's pow-wow on the weekend, a young child draws a picture of himself in his native regalia. He asks the educator for help in printing his story about his part in the traditional event.</p>	<p>repeat the process. This begins a lengthy inquiry about point of view and multiple perspectives in groups, in space, of characters in read-alouds, and even in daily routines and transitions.</p> <p> See Chapter 4.5, OEs 16 and 17.</p> <p> See "Paying Attention to Spatial Reasoning, K–12: Support Document for Paying Attention to Mathematics Education".</p> <p> Extending</p> <p>The educators are concerned that one of the children is not offering ideas verbally, or what they describe as "participating in the class". As they revisit documentation and look at the non-verbal contributions, they see that the child's representations reflect a deep connection to classroom conversations and ideas. The educators observe that not only is the child engaging in learning, he is one of the most engaged learners in the class. They begin to have professional conversations about the difference between participation and engagement.</p> <p> See "Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day" – the clips "Revisiting Pedagogical Documentation" and "Studying Co-constructed Negotiated Learning: Spiral Story".</p>

OE27

As children progress through the Kindergarten program, they:

recognize bias in ideas and develop the self-confidence to stand up for themselves and others against prejudice and discrimination

Conceptual Understandings

- Culture and society influence our opinions, biases, and beliefs.
- Everyone has the right to feel safe, comfortable, and accepted.
- Respect, empathy, and a sense of fairness are essential to ensuring that everyone feels safe, comfortable, and accepted.
- Self-confidence develops in many ways. Trusting relationships with others, safe environments, respect, and having a healthy lifestyle all contribute to the development of self-confidence.
- It takes courage to stand up for what you believe in.

Making Thinking and Learning Visible – Where both children and educators are observers and inquirers

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>27.1 develop strategies for standing up for themselves, and demonstrate the ability to apply behaviours that enhance their personal well-being, comfort, and self-acceptance and the well-being, comfort, and self-acceptance of others (<i>e.g., speaking confidently, stating boundaries, making choices</i>)</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>“We were already doing that with the cubes, so please listen.”</i></p> <p><i>“That was mean.”</i></p> <p><i>“I like to dress up this way.”</i></p> <p><i>“I tried to tell them to stop, but they just kept saying it. Can you help me?”</i></p> <p><i>“I don’t need help now. I can do this myself.”</i></p> <p>Doing</p> <p>Children notice that only the boys are playing in the blocks area. They begin a discussion asking why only boys can play in the blocks area. One of the</p>	<p>Responding</p> <p>The educators notice and listen carefully to children’s concerns.</p> <p>The educators begin to observe and document children’s ways of being and knowing. They begin to observe children who are quiet and to document the contributions they make in multiple ways through their actions and representations.</p> <p>Challenging</p> <p>The educators have numerous conversations about honouring the histories, cultures, languages, traditions, child-rearing practices, and lifestyle choices of families. They analyse their conversations</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>boys invites girls to play and says it is okay for girls to build in the blocks area because, <i>“My mom fixes things all the time.”</i></p> <p>One of the children spends much of his time lining materials up in rows. He carefully lines up cars and blocks, and some children comment that it would upset him if they moved the cars. Other children say <i>“We were just trying to play with him.”</i> One day a child says, <i>“We figured out how to play with [Mark]. Instead of touching the cars, we play with him by circling around him and playing alongside him.”</i></p> <p>Representing</p> <p>A small group of children are listening to a CD by a children’s recording artist. One of the children notices that the words to one of the songs are about the importance of being who you are and of accepting others for who they are. With the help of the educator, the children plan to play the song for the rest of the class and to discuss what it means to accept others for who they are.</p>	<p>with the children, their observations of the children, and their pedagogical documentation. They reflect on their past practices and decide to share their documentation with the children to show all the many ways children demonstrate their acceptance of one another.</p> <p>Extending</p> <p>Several children work in small groups while one child shares her inquiry into what would happen if she put coloured transparencies over a set of flashlights. Several children begin to contribute ideas and manipulate the materials, which include scissors and tape. An educator engages briefly with the group but soon decides to leave the children to negotiate their own process.</p> <p>The following link illustrates the preceding example, showing the children’s thinking and contributions, how they navigate in the specific social situation, and how they stand up for their ideas:</p> <p> Video title: “Self-Regulation” – see the clip “Rethinking and repeating supporting self-regulation – one educator team’s reflection”.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>27.2 think critically about fair/unfair and biased behaviour towards both themselves and others, and act with compassion and kindness</p> <p>27.3 recognize discriminatory and inequitable practices and behaviours and respond appropriately</p>	<p>Saying</p> <p><i>“That’s not fair!”</i></p> <p><i>“I am not a writer, I am a boy.”</i> Another child says, <i>“That’s not true. I am a boy, and look at my writing.”</i></p> <p><i>“I get to move because it helps me feel calm to move around when we are at the carpet.”</i></p> <p><i>“How come all the people in our construction sets are boys?”</i></p> <p><i>“Jordan took my snack.” “I did not!”</i></p> <p>Doing</p> <p>One of the children in the class uses a wheelchair. Some of the children rearrange the furniture in the dramatic play area so that he can join in their play.</p> <p>Representing</p> <p>With the help of an educator, one of the children composes a letter to the construction set company to ask why the workers are all men.</p> <p>One of the children creates a structure and places a sign on the top of a long piece that reads: <i>“Be careful, don’t break this part.”</i> The next day a group of children take the long piece for their structure. The child who wrote the sign says, <i>“That is not fair.”</i> This provides the class with an opportunity, as the children who took the piece did not see the sign. It was an ethical dilemma that they could think about together as a class.</p>	<p>Responding</p> <p>The educators notice and listen carefully to children’s questions and concerns. They rethink the learning environment to ensure that they are creating an atmosphere free from bias and built on mutual respect.</p> <p>The educators engage the children in a whole-class conversation about “fairness”. By listening and asking probing questions, they try to discover the children’s perspectives on fairness/unfairness and bias. They document the discussions for further reflection.</p> <p>Challenging</p> <p><i>“What does it mean to be fair?”</i></p> <p><i>“Is it important that things are fair? Why do you think that?”</i></p> <p><i>“What can you do if you or someone else is being treated unfairly?”</i></p> <p>Extending</p> <p>Based on their documentation, the educators decide to provoke further discussion about “fairness/unfairness/bias” by introducing the concept of “stereotyping”. They decide to start with some books and pictures, along with some of the children’s comments from earlier discussions.</p>

 **Professional Learning Conversation**

Re. SE 27.1: The educator teams in the school have noticed that the children have been using the phrase “that’s not fair” a lot in various contexts both inside and outside the classroom. After documenting the contexts in which they have heard children using this phrase, they decide to share their

observations with the children and to have some whole-class discussions to explore one of their theories: that the children are aware of and trying to make meaning of “differences”. From their professional reading, they know that this is part of a developing awareness of social justice.

OE28

As children progress through the Kindergarten program, they: demonstrate an awareness of their surroundings

Conceptual Understandings

- Everything in our daily lives is connected.
- Communities support people in different ways.
- People contribute to their communities in different ways.
- All aspects of a community are connected and interrelated.
- People have the capacity to feel a sense of wonder about the world.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators’ Intentional Interactions</p>
<p>28.1 recognize people in their community and talk about what they do (<i>e.g., farmer, park ranger, police officer, nurse, Indigenous healer, store clerk, engineer, baker</i>)</p>	<p>Saying <i>“I was in the hospital to get my broken arm fixed.”</i> <i>“We made a list of all the different kinds of places kids in our class live in.”</i></p>	<p>Responding In preparing the children for a neighbourhood walk or a walk around the school building, the educators ask the children what they think they might see along the way. The predictions are recorded. The</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>28.2 recognize places and buildings within their community, both natural and human-made, and talk about their functions (<i>e.g., farm, church, hospital, mosque, sweat lodge, arena, mine, cave</i>)</p> <p>28.3 develop an awareness of ways in which people adapt to the places in which they live (<i>e.g., children in cities may live in high-rise buildings and use sidewalks and the subway; children in the country may take the bus to school</i>)</p>	<p><i>"We like to go to different parks to play."</i></p> <p><i>"I like to go to the library. I have some friends there."</i></p> <p>Doing</p> <p>Two children work with the blocks to create a bake shop. One of the children, whose uncle owns a bakery, explains what materials are needed.</p> <p>Representing</p> <p>Children in a small group use a variety of materials to construct a model of a building in their community that has significance for them.</p> <p>Some children take turns bringing their "snow machines" into the "garage" for repairs.</p>	<p>educators then invite the children to record what they actually see on the walk, using a variety of ways (<i>e.g., lists, photos, drawings</i>).</p> <p>Challenging</p> <p>After the neighbourhood walk, the educators discuss the findings with the children, using prompts such as:</p> <p><i>"Why do children at our school take a school bus to and from school each day?"</i></p> <p><i>"Some of the children in our class live with their families in high-rise apartment buildings. Do people who live in the country live in apartments? Why or why not?"</i></p> <p>Extending</p> <p>The educators use their class blog to share the children's findings with similar classes in neighbourhoods that are different from theirs. They support the children in comparing and contrasting the various neighbourhoods.</p>

OE29

As children progress through the Kindergarten program, they:
demonstrate an understanding of the natural world and the need to care for and respect the environment

 See the Professional Learning Conversation following the chart.

Conceptual Understandings

- People and the natural world are interdependent.
- Our actions can make a difference in the world.
- We have a responsibility to understand and care for the natural world.
- People have the capacity to feel a sense of wonder about the world.
- We are learning that our actions and choices can affect nature and the environment.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>29.1 identify similarities and differences between local environments (<i>e.g., between a park and a pond, between a schoolyard and a field</i>)</p> <p>29.2 describe what would happen if something in the local environment changed (<i>e.g., if trees in the park were cut down, if the pond dried up, if native flowers were planted in the school garden</i>)</p>	<p>Saying <i>“The slide at my park is different than the one here at school.”</i> <i>“We saw some dead fish at the pond. We think it is because the water is almost gone.”</i></p> <p>Doing A child from the northern part of the province draws a picture of the place she came from. On the other side she draws the city in which she now lives. She explains how the two places are different and how they are the same.</p>	<p>Responding <i>“What else is the same about your backyard and the schoolyard? What is different?”</i> <i>“I notice that you are remembering to put your orange rinds and banana peels in our class composter.”</i> <i>“We’ll be able to use the compost when the new shrubs are planted.”</i></p> <p>Challenging In order to involve the children in the school’s energy-saving initiative, an educator invites the</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>29.3 identify ways in which they can care for and show respect for the environment (<i>e.g., feeding the birds in winter, reusing and recycling, turning off unnecessary lights at home, walking to school instead of getting a ride</i>)</p> <p>29.4 participate in environmentally friendly experiences in the classroom and the schoolyard (<i>e.g., plant and tend to plants; use local products for snack time; properly sort recycling</i>)</p>	<p>A small group of children decide to try to predict what will happen to snow when it is taken inside, and share their learning with the other children: <i>"I agree – I think it is going to melt."</i> <i>"Let's take a picture of it melting."</i></p> <p>Representing</p> <p>The children, as a class, make a book to record, in pictures and text, what their schoolyard looked like before and after the school council planted trees and shrubs. Children show pictorially which shrubs, plants, and trees in the schoolyard attract birds. After thinking about the best strategy for keeping track of the number of birds, they decide to count the birds using a tally.</p>	<p>children to make signs or labels that will remind them to turn out the lights when they are the last to leave a room. <i>"What would happen if there were more ... (trees, birds, parks, etc.)?"</i></p> <p>Extending</p> <p>The children are concerned about the amount of garbage around the school. They write a letter to the school and read it over the public address system. They decide to invite the school caretaker in to make a plan about how they can work together to help the whole school keep the schoolyard free from garbage and think more about recycling and reducing the amount of trash. They decide to illustrate the effect of their initiative by creating a graph that shows the amount by which the school has reduced waste. Partnering with the caretaker not only brings new perspectives, it also keeps the children aware of health and safety matters (<i>e.g., the need to wear gloves, and to avoid touching needles or animal waste</i>) while they are making their contributions (<i>e.g., picking up trash and sorting it for the recycling bin or the garbage bin</i>).</p>


Professional Learning Conversation

Re. OE29: Noticing that the children are fascinated by the size of a tree outside their classroom window, the educators discuss how they could use this curiosity to develop the children's appreciation of nature. One suggestion is to invite a group of children to explore this tree and other trees, using

photographs, a video, and language to represent their observations and thinking about the tree. The educators decide to meet briefly each day to analyse what the children are discovering and discuss possible responses that will enhance their learning.

OE30

As children progress through the Kindergarten program, they:

demonstrate an awareness of themselves as dramatists, actors, dancers, artists, and musicians through engagement in the arts

 See the Professional Learning Conversation following the chart.

Conceptual Understandings

- In socio-dramatic play and in dance, we can imagine, represent, retell, and create.
- I can create and communicate using dance and drama, music, and drawing and painting and sculpting.
- I can use visual representation to show what I'm thinking in various ways – I can capture a memory, describe, imagine, negotiate, and show a procedure.
- Engaging in socio-dramatic play, dance, music, and visual arts fosters children's imagination, helps develop empathy, builds self-esteem, and promotes the development of relationships, all while enabling children to experience a sense of accomplishment.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>30.1 demonstrate an awareness of personal interests and a sense of accomplishment in drama and dance (e.g., <i>contribute their own ideas to role playing; create their own actions to accompany a song or chant and/or follow actions created by a classmate</i>); in music (e.g., <i>contribute their own ideas to a class song</i>); and in visual arts (e.g., <i>create a sculpture from clay</i>)</p> <p>30.2 explore a variety of tools, materials, and processes of their own choice (e.g., <i>blocks, puppets, flashlights, streamers, castanets, rhythm sticks, natural and recycled materials</i>) to create drama, dance, music, and visual art forms in familiar and new ways</p>	<p>Saying</p> <p><i>“My baby is crying. I’m going to sing her to sleep.”</i></p> <p><i>“I’m going to be an elephant. See how my trunk moves?”</i></p> <p><i>“I like how you made that bridge. Can you show me how to do it?”</i></p> <p><i>“I used to make people like that. Now I make them this way.”</i></p> <p>Doing</p> <p>The children use a flashlight and puppets and invite others to watch them perform a play in the shadow play area they have set up with the support of the educators.</p> <p>Two children work together at the computer using simple music software to create and record a song.</p> <p>Representing</p> <p>A child uses drawings to recount a class trip to the grocery store.</p> <p>Children use shakers that they have made in a learning area to keep the beat of a familiar song.</p>	<p>Responding</p> <p><i>“You were pretending to be a dad. I can see your baby likes lullabies.”</i></p> <p><i>“You were listening and watching. I could see you trying to figure out how to make your bridge open up like Jack’s.”</i></p> <p>Challenging</p> <p><i>“You have so many creative ways to make the puppets move in the shadow play area. What happens when you use your hands for puppets instead? What’s the same? What’s different? What do you think makes that happen?”</i></p> <p>Extending</p> <p>An educator works with individual children to help them select and use props to enhance their dance movements.</p>


Professional Learning Conversation

Re. OE30: The educators ordered a “workbench” for the classroom. They expected a familiar-looking workbench to arrive – one specifically designed for working with tools. Instead they received a very generic-looking product that they described as a basic wooden table. They were tempted to return the workbench, but when that was not possible, they created a space and added it to the learning environment.

They observed the children engaging in learning using the workbench. The educators’ observations caused them to rethink the kinds of materials that were the best choices for the children’s learning. They mentioned having “aha moments”. Initially, they thought: “*What will the children do with this bench? How will they know what to do with it?*” However, they observed the children becoming increasingly creative and imaginative, using the bench as a stretcher, a counter for a bake shop, and a drive-through window. The bench offered limitless possibilities for play.

OE31

As children progress through the Kindergarten program, they:
demonstrate knowledge and skills gained through exposure to and engagement in drama, dance, music, and visual arts

Conceptual Understandings

- We can convey thoughts, ideas, and feelings or emotions in many different ways – by moving our bodies, role-playing, making music, and making pictures or sculptures or other art works.
- We can create sounds in many ways, then play with different sounds and rhythms to create music.
- We can use many different materials to create visual representations, and we can communicate so many different ideas and emotions.
- Role-playing in made-up contexts or scenarios can help us understand particular situations, texts, ideas, and stories.
- Stories, actions, and symbolic representations can be created in a dance, or through movement, or in socio-dramatic play.
- Music can make us think and feel in different ways and it helps us develop our thinking and communication skills in many ways.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>31.1 explore different elements of drama (<i>e.g., character, setting, dramatic structure</i>) and dance (<i>e.g., rhythm, space, shape</i>)</p>	<p>Saying</p> <p><i>"I'll be the bus driver."</i></p> <p><i>"I can drum dance."</i></p> <p><i>"I was a leaf falling. I started up high, then I spun around, then I fell on the ground."</i></p> <p>Doing</p> <p>A group of children discuss the characters and the setting for the story: <i>"I'll be the dragon. I'll make an angry face and voice. I'll stand under this and we can use the orange scarf for fire."</i></p> <p>Representing</p> <p>A child uses scarves to show how the wind moves on a windy day.</p>	<p>Responding</p> <p><i>"What happened first? Next? At the end?"</i></p> <p><i>"How many different ways can you move in your space?"</i></p> <p><i>"Let's move like the elephants in the story."</i></p> <p>Challenging</p> <p>An educator uses natural materials – pine cones, twigs, a scrap of fabric – to tell a familiar story. Some of the children use the props in a small group to retell and innovate on the story.</p> <p>Extending</p> <p><i>"If you were a tiny seed planted in the ground, show us how you would grow when the sun came out. Talk about why you chose to move this way."</i></p>
<p>31.2 explore different elements (<i>e.g., beat, sound quality, speed, volume</i>) of music (<i>e.g., clap the beat of a song; tap their feet on carpet and then on tile, and compare the sounds; experiment with different instruments to accompany a song</i>)</p>	<p>Saying</p> <p><i>"That's a drum. It made a loud boom."</i></p> <p><i>"This song keeps getting faster."</i></p> <p><i>"I'm keeping the beat with my foot."</i></p> <p>Doing</p> <p>During their explorations, children discover that a wooden block makes a sound when it hits the floor. They decide to explore further and drop the block on the carpet and then onto another block.</p>	<p>Responding</p> <p><i>"What different kinds of sounds can we make with the instruments?"</i></p> <p><i>"What instruments could we use to make a sound like horses' hooves?"</i></p> <p><i>"I wonder what this song would sound like if we sang it faster and softer."</i></p> <p><i>"I wonder why the singer sang the last verse quickly."</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A child uses computer software to add sound effects to a story she is writing.</p>	<p>Challenging</p> <p><i>“Use the symbols we have created to show the beats and rests in your favourite song.”</i></p> <p>Extending</p> <p>To reinforce patterning concepts, a member of the educator team asks the children to identify patterns in the words, melody, beat, and rhythm of familiar songs and poems that have been printed on chart paper and hung around the room.</p>
<p>31.3 explore different elements of design (<i>e.g., colour, line, shape, texture, form</i>) in visual arts</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>“I used leaves and torn scrap paper to make my picture.”</i></p> <p><i>“We used blocks and boxes to make a sculpture like the one in the book.”</i></p> <p><i>“I made a print with my sponge.”</i></p> <p><i>“I cut a zigzag line.”</i></p> <p><i>“I made different shapes with play dough.”</i></p> <p>Doing</p> <p>After looking at a book whose illustrations were done in clay, a child works in the modelling area using tools and equipment from various other areas in the classroom to replicate the textures in the book’s illustrations.</p>	<p>Responding</p> <p><i>“I noticed the different kinds of lines you made in your drawing.”</i></p> <p>Educator team members ask clarifying questions about works of art produced by the children in order to better understand how to support them and move them forward:</p> <p><i>“Why did you ... (use yellow circles for the apples; make the puppet’s hair out of string)?”</i></p> <p><i>“What were you thinking about? What were you feeling?”</i></p> <p>Challenging</p> <p>After observing the paintings done by the children, educator team members change the materials available. They replace the large paint brushes with</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>Children use a variety of materials (different kinds of paper, fabrics of various colours and textures, found materials) to make a collage.</p>	<p>medium- and small-sized brushes and add a variety of small paint rollers with different textures. They also provide small containers in which the children can explore colour mixing.</p> <p>Extending</p> <p><i>“How could you show that the car in your drawing is moving fast?”</i></p> <p><i>“You used many different textures in your collage. How could you use recycled or natural materials to get a different effect?”</i></p>

 **Professional Learning Conversation**

Re. SE31.3: The educators invite a parent who is an artist working in various media to discuss their plans for improving the Kindergarten visual arts program. Together, they map out a plan to provide opportunities for the children to explore photography and clay sculpture, in addition to the usual painting and drawing. They also discuss plans for the parent/artist to work

with the educator team and the children one day a week to further the team's knowledge about observing and assessing the children's accomplishments. Throughout the process, the educators work with the children to collect samples of their paintings, photographs, and sculptures for a “Gallery Opening” to be held at the end of the term.

4.4 SELF-REGULATION AND WELL-BEING

Dr. Stuart Shanker, Canada's leading expert on self-regulation, defines self-regulation as the ability to manage your own energy states, emotions, behaviours, and attention in ways that are socially acceptable and help achieve positive goals such as maintaining good relationships, learning, and maintaining well-being. Shanker draws on research to show how self-regulation lays the foundation for a child's long-term physical, psychological, behavioural, and educational well-being.

(Ontario Ministry of Education, "Understanding the Whole Child and Youth – a Key to Learning: An Interview with Dr. Lise Bisnaire, Dr. Jean Clinton and Dr. Bruce Ferguson," *In Conversation*, 4, 4 [2014]: p. 8)

For people in my field, self-regulation is as important as oxygen. It's really at the heart of social and emotional learning and healthy development.

(Dr. Jean Clinton, Associate Professor, Department of Psychiatry and Behavioural Neuroscience at McMaster University and Children's Hospital, quoted in Ontario Ministry of Education, "Understanding the Whole Child and Youth – a Key to Learning," p. 8)

➡ For more information about this frame, see Chapter 2.2, "Thinking about Self-Regulation and Well-Being".

➡ For a complete list of the overall expectations in the Kindergarten program with their related specific expectations, see the appendix to this document.

OVERALL EXPECTATIONS

As children progress through the Kindergarten program, they:

1. communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts
2. demonstrate independence, self-regulation, and a willingness to take responsibility in learning and other endeavours
3. identify and use social skills in play and other contexts
4. demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts
6. demonstrate an awareness of their own health and well-being
7. participate actively and regularly in a variety of activities that require the application of movement concepts
8. develop movement skills and concepts as they use their growing bodies to move in a variety of ways and in a variety of contexts
22. communicate their thoughts and feelings, and their theories and ideas, through various art forms

All children are viewed as competent, curious, capable of complex thinking, and rich in potential and experience.



EXPECTATION CHARTS

OE1

As children progress through the Kindergarten program, they:

communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts

Conceptual Understandings

- Communication has the power to influence and encourage change.
- We learn about the world, others, and ourselves through listening.
- The ways in which people communicate are diverse and are influenced by their background experiences.
- Communication includes non-verbal behaviours and gesturing. We can experiment with words to achieve intended effects.
- Oral language is the basis for literacy, thinking, and relating in all languages.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>1.3 use and interpret gestures, tone of voice, and other non-verbal means to communicate and respond (<i>e.g., respond to non-verbal cues from the educator; vary tone of voice when dramatizing; name feelings and recognize how someone else might be feeling</i>)</p> <p>1.6 use language (verbal and non-verbal communication) to communicate their thinking, to reflect, and to solve problems</p>	<p>Saying</p> <p><i>"I am going to have my snack now because I am hungry."</i></p> <p><i>"Ms. Tran teaches us yoga, and we are learning to be calm and to relax."</i></p> <p><i>"I am just going to go over here and be by myself."</i></p> <p>Doing</p> <p>Children are moving away from needing reminders about when to have their snack and are choosing to go to a snack table when they are hungry.</p> <p>A small group of children are reading together with an educator. During the reading one of the children</p>	<p>Responding</p> <p>The educators decide to focus intentionally on observing and documenting non-verbal communication, including facial expressions and tone of voice.</p> <p>Challenging</p> <p>During a cooking experience, an educator models procedural writing by recording the steps to follow in making the recipe. The educator and the children notice and name the purpose for writing.</p> <p>Two children are playing with a train set. An educator observes them replacing some parts of the</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>moves around and looks away from the book but then returns to paying attention and following along in the text. The educator observes that the child is able to break off his attention but then return to reading without losing the meaning of the unfamiliar text.</p> <p>Representing</p> <p>Two children are playing in the dramatic play area. One child is rubbing the doll's back, saying, <i>"It's okay. Don't cry."</i> The other child says, <i>"I think the baby is tired."</i></p>	<p>track with different parts, building on different levels, taking turns moving the train on the tracks, and changing the connections for the tracks. All of this is done using non-verbal communication. The educator makes a video to record the interaction. The educators revisit the video with each other and with the children. While revisiting the video, they notice and name what they see and hear. The children add to their thinking each time they view the video.</p> <p>Extending</p> <p>An educator asks a child, <i>"How do you know when you are hungry?"</i> The child responds, <i>"Sometimes my tummy makes a noise, and other times I just know in my brain."</i></p> <p><i>"What other actions can we use to show your pattern?"</i> (See OE18, SE18.1, dealing with "translation".)</p> <p><i>"What do we do first when we are tidying up?"</i></p>
<p>1.8 ask questions for a variety of purposes (<i>e.g., for direction, for assistance, to innovate on an idea, to obtain information, for clarification, for help in understanding something, out of curiosity about something, to make meaning of a new situation</i>) and in different contexts</p>	<p>Saying</p> <p><i>"When is it my turn?"</i></p> <p><i>"Could you help me with my zipper please?"</i></p>	<p>Responding</p> <p>An educator makes a point of listening to and documenting the questions asked.</p> <p>An educator says, <i>"I noticed that you recognize that you need a quiet spot to help you calm down and focus."</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p><i>(e.g., during discussions and conversations with peers and adults; before, during, and after read-aloud and shared reading experiences; while exploring the schoolyard or local park; in small groups, in learning areas)</i></p>	<p>Doing</p> <p>Sensing a need to calm herself, a child asks, “<i>Can I go and find a quiet place?</i>”</p> <p>A child who wants to be helpful asks, “<i>Where does this go?</i>”</p> <p>Representing</p> <p>Two boys ask if they can co-create a sign for the blocks area to help others work through the question, “<i>How might we solve the problem of crowding in the blocks area?</i>”</p> <p> Video title: “Kindergarten Matters: Intentional Play-Based Learning: It’s About Re-Thinking” – see the clip “Authentic Problem Solving”.</p>	<p>Challenging</p> <p>An educator makes a video of a large group of children in the blocks area. Later in the day, the educators watch the video with the children and ask, “<i>What is happening? What are you noticing?</i>”</p> <p>Extending</p> <p>“<i>What happened when you asked the group that question?</i>”</p> <p>“<i>What’s your thinking about that?</i>”</p>

OE2

As children progress through the Kindergarten program, they:

demonstrate independence, self-regulation, and a willingness to take responsibility in learning and other endeavours

Conceptual Understandings

- We are responsible for our own choices and decisions.
- Everyone wants to be calm, focused, and alert.
- We each need different strategies, environments, and support to be calm, focused, and alert.
- We need to learn about strategies and environmental factors that can help us self-regulate.
- We can learn how to adapt our behaviour to suit a variety of social circumstances, including the customs of different groups of people.



INSIDE THE CLASSROOM: REFLECTIONS ON PRACTICE

When educators resist the urge to manage and, instead, wait to see what the children can do, they help the children develop self-regulation skills and demonstrate self-motivation and initiative.

EXAMPLE 1: Hula Hoops

Setting the Context: The children were in the schoolyard using a variety of equipment (e.g., hula hoops, balls, and scoops). A small group of children were playing with the hula hoops, and two other children wanted to join in. The educators observed the children. One of the children approached an educator and said, *“I want to play with the hoops, too.”*

Educator’s thoughts in the moment: At first, I thought: *“I’ll just get another hoop so they can all play. I want them to all have a turn.”*

RETHINK

“Then I decided to do something different. I waited a moment and, instead of getting them another hoop or leading them through the conflict, I decided to trust the children to use their problem-solving skills, and said: ‘Hmmm, how will we solve this problem?’ I stood close by. The child said, ‘I know! We can each have one.’ [Note: Children often restate the problem as a suggested solution.] Another child said, ‘But there is not enough. Can we have another one?’”

Educator’s thoughts in the moment: I asked myself: *“Should I give in and get them another hoop?”* Again, I decided to resist the impulse to solve the problem for them and instead challenged the children: *“What else could you do?”* One of the children said, *“Hey, let’s play a game with the hoops.”* The children then put the hoops on the ground and took turns jumping through them. We [the educator team] made notes and then identified for the children what they had done: *“You came up with a creative solution that gave everyone a chance to play, and no one was left out. It would have been easier to get another hoop, but you thought of a better solution.”*

REFLECT

Educator’s thoughts upon reflection: This was a typical situation, one that has happened before in various different contexts. It is my first instinct to give the children enough materials, where possible, to allow them all to play. Also, I usually focus on the concept of sharing – it seems to me that it is my role to make sure everyone shares. In this case, I wanted to try something a little different. I held back on leading the children through a solution, and they were able to come up with a solution quite quickly that included the whole group.

EXAMPLE 2: Mixing Sand and Water

The members of an educator team reflected on a situation that enabled them to rethink how they were supporting children’s development of self-regulation:

“One of the children wanted to use materials from the water table in the sand. With this particular child, I was thinking, ‘I really need to intervene and say no, as it may result in a problem.’ Then I said to myself, ‘Wait! We’ve been thinking about not intervening immediately, unless safety is at risk.’ So I let the child take the materials, and I put some Popsicle sticks and twigs in the sand as well, and she created an entire habitat. I took out my video camera and recorded the whole thing. If I hadn’t stopped myself, she would probably have acted out. She had so much knowledge, but I wouldn’t have known it if I hadn’t let her explore.” The educators watched the video together. The other educator added, *“I was thinking about a similar situation. When you stop yourself, then these incredible conversations take place.”*

QUESTIONS FOR REFLECTION: RETHINKING

- In Examples 1 and 2, what was the impact on children’s learning when the educators trusted their judgement and rethought their tendency to manage/intervene?

- In Example 2, what could the conversation be while looking at the documentation video with the child? With other educators? With family members?
- At what moments have you stopped and rethought? What was the impact of doing so?

QUESTIONS FOR REFLECTION: SELF-REGULATION

- How might educator teams work collaboratively with their colleagues in the primary grades?
- How can we design the learning environment to support self-regulation?
- How might educator teams work with children and their families to:
 - support children in talking about how they are feeling;
 - identify strategies and environmental factors that might support their child’s ability to self-regulate;

- help children recognize what causes them to become frustrated, some of the signs that they are starting to become frustrated (e.g., a pounding heart, clenched teeth), and what they can do to calm down (down-regulate), to increase their energy level (e.g., jump up and down, move around), or to improve their ability to focus/refocus (up-regulate).

(Adapted from S. Shanker, *Calm, Alert and Learning: Classroom Strategies for Self-Regulation*, 2013, p. 42)



Video title: “Self-regulation” – see the clip “Rethinking and repeating supporting self-regulation – one educator team’s reflection”.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators’ Intentional Interactions
2.1 demonstrate self-reliance and a sense of responsibility (<i>e.g., make choices and decisions on their own; take care of personal belongings; know when to seek assistance; know how to get materials they need</i>)	<p>Saying</p> <p>“I can do it by myself.”</p> <p>“I remembered to bring my hat.”</p> <p>“I’m going to play in the sand today.”</p> <p>Doing</p> <p>In advance of a neighbourhood walk, the class make a list of things that they can do to be safe when they are outside the classroom. On the day of the walk, most of the children arrive with a hat and sunscreen.</p>	<p>Responding</p> <p>The educators negotiate and co-construct with the children all of the places where writing materials are located, so the children can access them independently.</p> <p>Challenging</p> <p>Before a class trip outdoors, the educators co-construct with the children a list of all the things they need to do to prepare to go outside:</p> <p>“What are some things each of us needs to remember to bring? How can we make sure that we remember everything?”</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A small group of children make a sign for the blocks area that says, "Please Tidy Up the Blocks".</p>	<p><i>"What are some things you can do to keep track of everything that belongs to you throughout the trip?"</i></p> <p>Extending</p> <p>In order to support children's self-regulation, the educators rethink their rotation board for learning. They find that they have been managing the board instead of observing and talking with the children about the choices the children are making. They decide that the children are capable of choosing where they want to learn. They document and talk with the children about their choices, and the documentation serves as assessment <i>for</i> and <i>as</i> learning. They learn that the children are able to select and manage materials independently.</p>
<p>2.2 demonstrate a willingness to try new experiences (<i>e.g., experiment with new materials/tools; try out activities in a different learning area; select and persist with things that are challenging; experiment with writing</i>) and to adapt to new situations (<i>e.g., having visitors in the classroom, having a different educator occasionally, going on a field trip, riding the school bus</i>)</p>	<p>Saying</p> <p><i>"I'm going to try this hard puzzle again today."</i></p> <p><i>"Let's try to make it really long."</i></p> <p><i>"Can you help me hold this tube so it will go into the funnel?"</i></p> <p><i>"I have been building this for a long time."</i></p> <p>Doing</p> <p>A child who has previously had difficulty selecting a place to work chooses to go to an area where the</p>	<p>Responding</p> <p>An educator notes that a child has chosen to paint for the first time. After saying to the educator that the painting shows him riding the bus for the first time, the child then asks the educator if she could help him to hang his painting in the class art gallery.</p> <p>Challenging</p> <p>After observing one of the children working for a sustained period of time with the playdough, the</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>2.3 demonstrate self-motivation, initiative, and confidence in their approach to learning by selecting and completing learning tasks (<i>e.g., choose learning tasks independently; try something new; persevere with tasks</i>)</p>	<p>educators have added clay to the available materials and is able to work there for a sustained period of time.</p> <p>Representing</p> <p>A child paints a picture and says, <i>“This is me riding on the school bus for the first time.”</i></p>	<p>educators add clay to the available materials so that the children have an opportunity to use a different medium. They talk together with the children about removing many of the cookie cutters and other templates so the children can explore the clay. The educators focus on observing how children are using this material for the first time and not on what children are saying and doing while they are working with the clay.</p> <p>Extending</p> <p>The educators observe that a few children always choose to go to the reading area and/or the writing area but rarely visit any of the other learning areas. After sharing their observations with each other, they add writing materials to the sand table and water table areas. They then observe that the children begin to go to these areas and to use all of the materials at each one. They also notice that children are now playing in mixed gender and age groups.</p>
<p>2.4 demonstrate self-control (<i>e.g., be aware of and label their own emotions; accept help to calm down; calm themselves down after being upset</i>) and adapt behaviour to different contexts within the school environment (<i>e.g., follow routines and rules in the classroom, gym, library, playground</i>)</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>“I’m feeling better now. I’m ready to talk.”</i></p> <p><i>“I’m really frustrated.”</i></p> <p><i>“We get to run in the gym.”</i></p> <p><i>“I used to cry when my mom left, but I don’t anymore.”</i></p>	<p>Responding</p> <p>During a read-aloud, an educator observes that a child has moved away from another child in order to solve a problem. She says, <i>“You moved to a spot that works better for you.”</i></p> <p>Challenging</p> <p>The educators provide opportunities for the children to use language to express and regulate</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>While involved in role-play in the dramatic play area, a child looks away from the scene but then quickly resumes playing his role.</p> <p>Representing</p> <p>A group of children are concerned that people are bumping into their large spiral structure on the floor. They decide to make a sign to post by their structure: <i>"Please be careful – delicate."</i> The educators notice that the children stop and walk around the structure, especially after the group have placed the sign and talked about it with the class.</p>	<p>their emotions. The educators ask questions such as, <i>"What do you notice happens to your body when you are angry or frustrated?"</i></p> <p>Extending</p> <p>The educators notice that a child is frustrated because she can't finish her sculpture in time to take it home at the end of the day. They encourage her to suggest some solutions to the problem and agree that they will help her find the additional materials needed to complete her work the next day.</p>
<p>2.5 develop empathy for others, and acknowledge and respond to each other's feelings (<i>e.g., tell an adult when another child is hurt/sick/upset; have an imaginary conversation with a tree or an insect; role-play emotions with dolls and puppets</i>)</p> <p>➡ See "Domains of Self-Regulation" in Chapter 2.2.</p>	<p>Saying</p> <p><i>"She is crying because she is sad about her friend."</i></p> <p><i>"You can have this book because you like trucks."</i></p> <p><i>"Why don't you sit here? Then you will feel better."</i></p> <p><i>"We moved our building so that it won't get broken, because it makes her upset."</i></p> <p><i>"We'll play ball away from the garden so we don't hurt the plants."</i></p> <p>Doing</p> <p>A few of the children are role-playing at the "Fix-It Shop" in the dramatic play area. Another</p>	<p>Responding</p> <p>An educator models empathic language for the children, such as <i>"You were showing empathy when you ..."</i> In their observation records, the educators note examples of children showing empathy, which an educator from the before-and after-school program shares with the children's families.</p> <p>Challenging</p> <p>An educator asks children to predict how others might act as a result of something that has been said</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>child attempts to enter the play and is assigned a role by one of the children: <i>"You can be the customer because you are a girl."</i> The other children in the group protest: <i>"That isn't fair. Girls can fix cars, too!"</i></p> <p>Representing</p> <p>One of the children paints a picture showing how he gave his car to his friend who was sick.</p>	<p>or done to them, and to identify the reasons for that behaviour, using examples such as the following:</p> <p><i>"If I share ... with someone, she might ..."</i></p> <p><i>"How might a person react if something he was playing with broke?"</i></p> <p><i>"How does a person's face show us his or her feelings?"</i></p> <p>Extending</p> <p>After reading a book in which the central character shows empathy, an educator makes the book and some puppets available to the children. While the children are re-enacting the story, the educator takes observation notes, makes an audio recording of the children's conversation, and then uses the information to plan further lessons on showing empathy.</p>

 **Professional Learning Conversation**

Re. SE2.4: The educators have a breakfast meeting with parents about supporting the children's development of self-regulation. At the meeting, one child's mother says, *"Whenever he is concentrating on his building blocks*

at home, he turns his back to the rest of us and focuses on what he is making." This information gives the team an insight into how to help this particular child focus his attention when he is in class.

OE3

As children progress through the Kindergarten program, they:
identify and use social skills in play and other contexts

Conceptual Understandings

- People develop skills to help negotiate social relationships in a variety of contexts.
- My words and actions can affect others.
- People can have differing points of view.
- I am responsible for my choices and actions.
- I can use language to negotiate and express thoughts.
- Knowledge is socially constructed – created by people learning, working, and investigating together – and can be shared.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
3.1 act and talk with peers and adults by expressing and accepting positive messages (<i>e.g., use an appropriate tone of voice and gestures; give compliments; give and accept constructive criticism</i>)	Saying <i>"I asked Meriam to help me tidy up the shoes and she did."</i> <i>"I didn't like it when you took my book."</i> <i>"That's a good painting."</i> Doing One of the children finds her friend's name card in the basket and hands it to her as she arrives in the room.	Responding An educator observes that children in the blocks area are taking blocks from a structure that other children are building. The educators decide to model some cooperation strategies for the children. They also decide to notice and name positive strategies used by the children (<i>e.g., "I noticed you listening to Jay's suggestions for building your tower"</i>) in order to support the development of self-regulation.

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>Following a whole-school session on expressing and accepting positive messages, several parents report that their children are using this skill at home with siblings and extended family members.</p>	<p>Challenging</p> <p>The educators have been modelling appropriate ways to provide feedback. They challenge themselves to observe the children and to record what they say and do without making a judgement about what is happening. They study their documentation with the children and provide descriptive feedback to the children as an example of how to provide feedback.</p> <p>Extending</p> <p>On the basis of their observations of the children's growing capacity for cooperation and self-regulation, the educators decide to put more blocks in the blocks area so that the children have sufficient materials to build more complex structures. They notice the children beginning to negotiate with each other, offering materials and positive feedback to each other about their constructions.</p>
<p>3.2 demonstrate the ability to take turns during activity and discussions (<i>e.g., while engaged in play with others; in discussions with peers and adults</i>)</p> <p>3.3 demonstrate an awareness of ways of making and keeping friends (<i>e.g., sharing, listening, talking, helping, entering into play or joining a group with guidance from the educators</i>)</p>	<p>Saying</p> <p><i>"Can I play with you? I'll be the ..."</i></p> <p><i>"You can be the firefighter this time."</i></p> <p><i>"I like what you're building. Can I help?"</i></p> <p><i>"You can use this scoop after me."</i></p> <p><i>"Do you want to look at this book with me?"</i></p> <p><i>"It is your turn to roll the dice."</i></p>	<p>Responding</p> <p>Some children are seated in a small group at a table, representing their opinions on a class graph. An educator says, <i>"I noticed you came back when you saw there was space for you at the table."</i></p> <p>Challenging</p> <p>The educators know that some children in the class have moved beyond parallel play, so they put out</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>“Let’s put on a puppet show.”</i></p> <p><i>“Do you want to be the waiter? I’d like to order a pizza, please.”</i></p> <p><i>“I’ll pick up these ones, and you can pick up those ones.”</i></p> <p>Doing</p> <p>The educators place new materials in the dramatic play area. One child begins to negotiate roles, and together the children decide who will be the first to use the new materials.</p> <p>Representing</p> <p>The educators begin to observe the children’s non-verbal communication in turn-taking, such as moving to make space, inviting someone in with a hand wave, and handing materials to a child. They talk with the children about all the ways that people work together.</p> <p>One of the children paints a picture and says, <i>“This is me with my friend in the park.”</i></p>	<p>a small collection of building materials for making marble runs. Because the educators have limited the amount of materials available, the children have to find ways to work together.</p> <p>Extending</p> <p>The educators observe the children in the dramatic play area solving the problem of who will be the first to use the new materials that have been placed there by the educators. The educators ask the children to share their solution, including their list, with the rest of the class.</p>

OE4

As children progress through the Kindergarten program, they:

demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts

Conceptual Understandings

- We use our problem-solving skills in social situations.
- There are many ways to solve a problem.
- I can think about and adapt my actions to suit the context.
- I can leave and then return to paying attention.
- We make choices and decisions when solving problems.
- Problems can provide an interesting challenge.
- Problems can have many solutions.
- There are many kinds of relationships.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>4.1 use a variety of strategies to solve problems, including problems arising in social situations (<i>e.g., trial and error, checking and guessing, cross-checking – looking ahead and back to find material to add or remove</i>)</p>	<p>Saying</p> <p><i>“I put my vehicle on the shelf so it would be safe.”</i></p> <p><i>“Why don’t we try and put this block on the bottom so the building won’t fall over?”</i></p> <p><i>“I wanted to go to the movie theatre [in the dramatic play area], but it was too crowded for me so I made my own over here.”</i></p> <p>Doing</p> <p>A group of children are working with words. One of the children is looking for a magnetic letter “D” to make her name. One of the other children finds it for her.</p> <p>Representing</p> <p>After listening to a story, the children in the dramatic play area represent their solution to the problem that one of the characters in the book is feeling left out. Their solution is to include everybody so that no one will feel sad.</p>	<p>Responding</p> <p>An educator makes an observation note on a child’s suggestions regarding a new way to store the blocks so they are easier to tidy up.</p> <p>Challenging</p> <p>An educator asks a small group of children to help solve the problem that water is getting all over the floor at the water table.</p> <p>Extending</p> <p>An educator talks with the children about what they think needs to be removed from the classroom to give them more space to work together.</p> <p> Video title: “The Learning Environment” – see the clip “Co-constructing and negotiating the learning environment – including the children’s voices and ideas”.</p>

OE6

As children progress through the Kindergarten program, they:
demonstrate an awareness of their own health and well-being

Conceptual Understandings

- We develop an understanding of the factors that contribute to healthy development, a sense of personal responsibility for lifelong health, and an understanding of how living healthy, active lives is connected with the world around us and the health of others.
- I have the right to be healthy and to feel safe.
- There are things that I need to know and do to keep myself safe and healthy. I am empowered to make choices that will keep me healthy.
- Healthy food choices affect my body and my feelings.
- I am learning to recognize when I am tired or need a break.
- I am learning to make healthy choices and to be physically active, in order to keep my body healthy and safe, and to grow strong.
- We learn adaptive, management, and coping skills, and practise communication and critical thinking skills, in order to learn how to build relationships.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>6.1 demonstrate an understanding of the effects of healthy, active living on the mind and body (e.g., choose a balance of active and quiet activities throughout the day; remember to have a snack; drink water when thirsty)</p>	<p>Saying</p> <p><i>"I like going for a walk after school."</i></p> <p><i>"I can feel that my heart is beating fast!"</i></p> <p><i>"I'm thirsty from all that running. I really need a big drink of water."</i></p> <p><i>"I am going to the quiet space and do a puzzle."</i></p> <p><i>"I ride my bike. It's fun and it's a healthy thing to do."</i></p>	<p>Responding</p> <p>An educator observes children's efforts to make the healthiest choices possible during daily routines and acknowledges the children's actions: <i>"I noticed you're trying more and different fruits and vegetables. Why? Which ones do you like best?"</i></p> <p><i>"When you go for a walk, what do you do to be sure that you will be safe?"</i> (e.g., wear sunscreen and a</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>"I like being active outside. On the weekend I helped my uncle sweep his driveway, and I felt hot when I did that, so I went and sat in the shade."</i></p> <p>Doing</p> <p>Children choose a physical activity such as climbing or playing with a ball during outdoor playtime. After outdoor playtime, some of the children choose to spend quiet time with a book or listening to an audiobook before returning to their work in the learning areas.</p> <p>A child takes the initiative to make a sign for snack table <i>"to show what is healthy for snack."</i></p> <p>Representing</p> <p>A child approaches the teacher to let her know what he needs: <i>"My stomach is rumbling. I might need a snack."</i></p> <p>Several children make a book illustrating that they have learned behaviours that contribute to healthy growth and development. The book includes pages that show children being physically active at home and at school, getting a good night's sleep, making the healthiest possible food choices, and being safe in their daily lives. The children share their work with the educators, who provoke a discussion about the importance of feeling good about yourself and</p>	<p>hat and sunglasses if it is sunny; let someone know where you are going)</p> <p>The educators introduce the children to Canada's Food Guide.</p> <p>Challenging</p> <p><i>"How does eating healthy foods help your body and mind?"</i></p> <p><i>"Besides eating healthy foods, what are some other things that help our whole bodies to be healthy?"</i></p> <p>(In the gym or playground): <i>"Before we start to move, what are some things we need to check to be sure everyone can participate safely?"</i></p> <p>Extending</p> <p>After the children set up a store in the dramatic play area, the educators observe the kinds of items they have chosen to sell and ask them to talk about their choices.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>recognizing the things that make you unique as another part of being healthy. When their book is complete, the children add it to the class library for others to read.</p>	
<p>6.2 investigate the benefits of nutritious foods (e.g., nutritious snacks, healthy meals, foods from various cultures) and explore ways of ensuring healthy eating (e.g., choosing nutritious food for meals and snacks, avoiding foods to which they are allergic)</p>	<p>Saying</p> <p><i>“My friend is allergic to peanuts. How can he be safe in our classroom when some kids bring nuts for snack?”</i></p> <p><i>“I liked it when we got to try rice dishes from different countries. Some of them had healthy stuff like vegetables in them. And they tasted good, too!”</i></p> <p>Doing</p> <p>Some of the children set up a store in the dramatic play area. They stock the store with a wide variety of food items but encourage their customers to buy fruits and vegetables when they shop.</p> <p>Representing</p> <p>Children make posters for the shelves of the store, telling customers about which items are healthy choices.</p>	<p>Responding</p> <p>The educators discuss with the children what it means to be allergic. They explain why some children need to avoid particular foods, and reinforce the point with statements such as, <i>“We have posted signs, so that everyone knows how to keep our classroom safe.”</i></p> <p>Challenging</p> <p><i>“What are some healthy choices for snacks?”</i></p> <p><i>“Why do we need to eat lots of fruit and vegetables?”</i></p> <p><i>“Why is a piece of fruit a better snack than a doughnut?”</i></p> <p>Extending</p> <p>The children work with their learning buddies to gather data about how many fruits and vegetables they eat. They are sensitive to each other’s privacy, so instead of graphing by each child’s name they keep track of their overall quantity by using the names of foods as the categories on the graph and</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>then marking a bar on the bar graph showing their total number. They decide to compare their totals over the course of a month. The families decide to participate in the challenge by partnering to create a community garden to provide vegetables for the school community.</p>
<p>6.3 practise and discuss appropriate personal hygiene that promotes personal, family, and community health</p>	<p>Saying</p> <p><i>"I washed my hands."</i></p> <p><i>"I taught my little sister not to put her toys in her mouth 'cause of the germs."</i></p> <p><i>"I need a tissue."</i></p> <p><i>"I am going to the dentist tomorrow to get my teeth cleaned and checked."</i></p> <p>Doing</p> <p>The children create a sequence of digital photographs showing the steps for washing hands to place by the sink or washing bin.</p> <p>Representing</p> <p>The educators learn from a child's family that the child has shared and demonstrated at the dinner table what she has learned in class about "sneeze in your sleeve".</p>	<p>Responding</p> <p>Based on their observations, the educators acknowledge children's practices that demonstrate good personal hygiene. <i>"I noticed that you washed your hands after you were done playing in the sand. You did that yesterday, too, after you came back from the gym."</i></p> <p>Challenging</p> <p><i>"In what ways do we take care of all parts of our body? Why is it important to do these things?"</i></p> <p>Extending</p> <p>Some of the children share with the educators that, during a bathroom break at the local community centre, they noticed that some people left without washing their hands. The educators encourage the children to discuss what they can do to help others understand the importance of hand washing. The children decide to write to the community centre and ask if they would like to use the class's digital photos showing the steps for washing hands in the washrooms at the community centre.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>6.4 discuss what action to take when they feel unsafe or uncomfortable, and when and how to seek assistance in unsafe situations (<i>e.g., acting in response to inappropriate touching; seeking assistance from an adult they know and trust, from 911, or from playground monitors; identifying substances that are harmful to the body</i>)</p>	<p>Saying</p> <p><i>“When I saw a boy fall on the playground I told the teacher.”</i></p> <p><i>“My mom’s friend wanted to give me a hug when she met me. I didn’t want to hug her so I said, ‘Nice to meet you. I’d rather not hug.’”</i></p> <p><i>“I told Bryna not to call me that name.”</i></p> <p>Doing</p> <p>In the dramatic play area, a child calls 911, gives the operator her name and the address of the house, then says that someone is sick.</p> <p>Representing</p> <p>A child draws street signs (<i>e.g., a stop sign, “walk/don’t walk” signals from traffic lights</i>) on large paper and explains to some other children what they mean.</p>	<p>Responding</p> <p>The educators record children’s safety-related ideas and questions and then invite a community police officer to visit the class to discuss safety and answer some of the children’s questions.</p> <p>Challenging</p> <p>The educators ask the children to think of things they should avoid that could be harmful to their health (<i>e.g., smoking, taking medicine that belongs to someone else</i>). They record the children’s suggestions.</p> <p>Extending</p> <p>An educator presents a variety of scenarios to the children for discussion, using questions that start, <i>“What would you do if . . . ?”</i></p>
<p>6.5 discuss and demonstrate in play what makes them happy and unhappy, and why</p>	<p>Saying</p> <p><i>“I was sad when the class pet fish died.”</i></p> <p><i>“I was happy when we got to play outside.”</i></p> <p><i>“I was sad when the sliding hill got closed.”</i></p>	<p>Responding</p> <p>Showing empathy by acknowledging feelings can create a connection between children and team members. Educators acknowledge the feelings expressed by children by saying, <i>“I see you are sad. It’s hard when our pets die.”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>The educators observe the children taking on different roles in dramatic play. Over time, they document the range of emotions children role-play and demonstrate.</p> <p>Representing</p> <p>After the class pet fish dies, a child draws a picture of the fish. In the dramatic play area, the child says, <i>"It was sad that the fish died at school today. I made a picture of her to hang on the wall."</i></p>	<p>Challenging</p> <p><i>"How can people tell when we are feeling happy or sad?"</i></p> <p>Extending</p> <p>An educator discusses with the children what they can do when they are feeling sad (or angry, hurt, happy, etc.), and how they can respond when their peers show different kinds of feelings.</p> <p><i>"How can we respond to people's emotions?"</i></p> <p><i>"How can we recognize situations that require different responses?"</i></p>

OE7

As children progress through the Kindergarten program, they:

participate actively and regularly in a variety of activities that require the application of movement concepts

Conceptual Understandings

- We learn skills and knowledge that will help us to enjoy being active and healthy throughout our lives.
- I can play cooperatively with others in a wide variety of physical activities.
- There are things that I need to know and do to keep myself safe and healthy. I am empowered to make choices that will keep me healthy.
- I can participate regularly and safely in a wide variety of physical activities and learn how to develop and improve my own personal fitness.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>7.1 participate actively in creative movement and other daily physical activities (<i>e.g., dance, games, outdoor play, fitness breaks</i>)</p>	<p>Saying</p> <p><i>“Look how many hops I can do.”</i></p> <p><i>“At recess I’m going to play on the climber.”</i></p> <p><i>“Let’s play musical hoops!”</i></p> <p>Doing</p> <p>During outdoor playtime, a small group of children engage in a game of hopscotch.</p> <p>Representing</p> <p>A child who attends dance class after school explores one of the ways of moving with classmates.</p>	<p>Responding</p> <p>The educators exchange ideas about how to plan opportunities for children to be physically active in a variety of settings, both inside and outside the classroom and school.</p> <p>Challenging</p> <p>The educators create opportunities for children to improve and refine their existing physical skills and to begin to develop new ones. They notice and name the movements with the children.</p> <p>Extending</p> <p>An educator introduces new types of activities (<i>e.g., elements from yoga</i>) into the planned class movement activities. He observes the positive impact the yoga is having on children’s self-regulation.</p>
<p>7.2 demonstrate persistence while engaged in activities that require the use of both large and small muscles (<i>e.g., tossing and catching beanbags, skipping, lacing, drawing</i>)</p>	<p>Saying</p> <p><i>“Running all the way around our field was hard, but I did it!”</i></p> <p><i>“I caught the ball! I was practising and practising watching it until it hit my hands.”</i></p> <p><i>“We started this [a blocks structure] a long time ago. We have worked on it for days, and now look at it!”</i></p>	<p>Responding</p> <p><i>“I noticed how long you worked to finish your painting.”</i></p> <p>Challenging</p> <p>The educators post “challenge cards” that have been co-constructed with the children on the</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>7.3 demonstrate strategies for engaging in cooperative play in a variety of games and activities</p>	<p>Doing</p> <p>Several children persist in their efforts to make and hold a shape together that involves them balancing as a pair with only three body parts touching the ground.</p> <p>Representing</p> <p>A small group of children create a game where they have to try to get beanbags inside a hoop. Every time they are successful, they move progressively farther from the hoop.</p>	<p>outside wall of the school, using pictures and labels. The cards contain messages such as the following:</p> <p><i>“Throw the beanbag into the air and catch it three times.”</i></p> <p><i>“Skip rope as many times as you can without stopping.”</i></p> <p><i>“Roll backwards and forwards in your wheelchair.”</i></p> <p>Extending</p> <p>The educators rethink simple puzzles and lacing activities and introduce construction materials, small blocks, playdough, and smaller paintbrushes that offer the children more challenges and require more muscle control.</p>

OE8

As children progress through the Kindergarten program, they:

develop movement skills and concepts as they use their growing bodies to move in a variety of ways and in a variety of contexts

Conceptual Understandings

- We learn skills and knowledge that will help us to enjoy being active and healthy throughout our lives.
- There are things that I need to know and do to keep myself safe and healthy. I am empowered to make choices that will keep me healthy.
- I am learning how to move in a variety of ways in a variety of physical activities.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>8.1 demonstrate spatial awareness in activities that require the use of large muscles</p> <p>8.2 demonstrate control of large muscles with and without equipment (e.g., climb and balance on playground equipment; roll, throw, and catch a variety of balls; demonstrate balance and coordination during parachute games; hop, slide, wheel, or gallop in the gym or outdoors)</p>	<p>Saying</p> <p><i>“I can skip and I can gallop. When I skip, I say to myself, ‘Step, hop, step, hop.’ When I gallop I pretend I am a horse. I step forward; then my back foot catches up to my front foot.”</i></p> <p><i>“I moved over here so we won’t bang into each other.”</i></p> <p><i>“I am in my own space. When I spread out my arms, I can’t touch anyone else and I can’t touch anything at all.”</i></p> <p>Doing</p> <p>Two children with a giant deck of cards create the rules for a new game that involves moving in different ways.</p> <p>Before starting to rotate the hula hoop, a child looks around to be sure that the hoop won’t hit anyone.</p> <p>Representing</p> <p>After developing a new card game, the children ask one of the educators to make a video of them as they play and explain how the game works.</p>	<p>Responding</p> <p><i>“I noticed that the two of you put your blocks together so you could build a bigger house.”</i></p> <p><i>“How will you find a way to stay safe and move in your own space?”</i></p> <p><i>“We’re going to stretch. Find a space to stand where you can really stretch.”</i></p> <p>The educators begin to observe more closely and document the ways that children physically move throughout the day. They observe children skipping, hopping, and dancing on the spot, and they also notice how self-regulated their movement is, as they often check the space around them to make sure they are in their own space and moving safely. The indicators are subtle and happen quickly but they provide a great deal of evidence about children’s spatial sense.</p> <p>Challenging</p> <p>An educator notices that a child who usually plays alone is showing interest in playing with others. She finds ways to encourage the child to participate more in cooperative play.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>Extending</p> <p>An educator invites a small group of children to explain to the class how they solved a problem they were having with sharing equipment when playing outside.</p>
<p>8.3 demonstrate balance, whole-body and hand-eye coordination, and flexibility in movement (e.g., run, jump, and climb; walk on the balance beam; play beach-ball tennis; catch a ball; play hopscotch)</p>	<p>Saying</p> <p><i>“Please move back! I need lots of room to roll the ball.”</i></p> <p><i>“I used my feet to measure. It is thirty-five steps from one side of this room to the other.”</i></p> <p><i>“Look at me – I can stand on one foot for a whole minute!”</i></p> <p><i>“I walked on the balance beam all by myself.”</i></p> <p><i>“Watch me climb to the very top of the slide set!”</i></p> <p><i>“I caught the ball every time.”</i></p> <p><i>“I rode the trike all the way around the schoolyard.”</i></p> <p>Doing</p> <p>A child kicks a ball towards a target painted on the wall.</p> <p>In the playground, a group of children try to see how many body parts they can use to spin their hula hoops.</p> <p>Representing</p> <p>A child responds to music by hopping like a bunny (<i>“I can feel the muscles in my legs working hard”</i>),</p>	<p>Responding</p> <p>The educators provide guidance and feedback using comments such as:</p> <p><i>“Is there a way to hold your arms that will help you balance on one foot? Try looking at the floor. Now try looking at a spot on the wall. Which way helps you balance?”</i></p> <p><i>“How many ways can you balance on a line? On two body parts? Three body parts?”</i></p> <p>Challenging</p> <p>The educators introduce music to accompany gross-motor activities and encourage children to practise their emerging movement skills by saying:</p> <p><i>“Move around the gym with your arms in the air. Now try moving in a different way.”</i></p> <p><i>“We’re going to walk around our hoops. Now jump inside.”</i></p> <p><i>“Raise your right foot and your left hand.”</i></p> <p><i>“Can you move two body parts at the same time while you move around the space?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	walking like an elephant (“ <i>See how low I can crouch?</i> ”), and flying like an airplane (“ <i>Look at my wings! I am stretching my arms out as wide as I can</i> ”).	Extending <i>“What different body parts can you move? What different directions can you move?”</i> <i>“Try moving on a different pathway (curvy, straight, in a zigzag).”</i>
<p>8.4 demonstrate control of small muscles (<i>e.g., use a functional grip when writing</i>) while working in a variety of learning areas (<i>e.g., sand table, water table, visual arts area</i>) and when using a variety of materials or equipment (<i>e.g., using salt trays, stringing beads, painting with paintbrushes, drawing, cutting paper, using a keyboard, using bug viewers, using a mouse, writing with a crayon or pencil</i>)</p> <p>8.5 demonstrate spatial awareness by doing activities that require the use of small muscles</p>	Saying <i>“I put all the pieces of the puzzle together.”</i> <i>“I used the scoop to fill the pail. Then I dumped all the sand into the pile.”</i> <i>“The small paintbrush made the skinny lines.”</i> Doing A child strings a pattern of large and small beads. A child does up the buttons on a doll’s shirt. A child builds a structure with a construction toy, persisting in her efforts to join the pieces together. Representing A child makes her learning visible to the educator when she uses a mouse to make characters on the computer screen move in circles.	Responding <i>“I noticed that the puzzle you’ve just done has more pieces than the puzzle you did yesterday. The pieces are smaller, too.”</i> The educators negotiate with the children to determine what materials should be available at the writing table. They provide a variety of writing/drawing implements of various sizes and widths. They use prompts such as: <i>“I see you chose a thinner pencil to draw in the eyes, mouth, and nose. What might you use to draw the hands?”</i> They document and discuss with the children how the new materials affected their work (to support assessment <i>for</i> learning). Challenging The educators plan for the children to engage in discussion and movement activities in different spaces. They make connections to the yoga work

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>they have been doing with the children and invite them to talk about how their bodies feel when they move and stretch.</p> <p>Extending</p> <p>The educators put out small trays of sand, whiteboards, and chalkboards and encourage their use by children who need additional support with the development of fine-motor skills.</p>

OE22

As children progress through the Kindergarten program, they:

communicate their thoughts and feelings, and their theories and ideas, through various art forms

Conceptual Understandings

- There are many ways to communicate thinking, theories, ideas, and feelings.
- The arts provide a natural vehicle through which we can explore and express ourselves in a variety of creative ways.
- We can discover and interpret the world around us through the arts.
- We develop our ability to communicate through our engagement in imaginative and innovative thought and action.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>22.1 communicate their ideas about something (e.g., a book, the meaning of a word, an event or an experience, a mathematical pattern, a motion or movement) through music, drama, dance, and/or the visual arts</p>	<p>Saying <i>“That poem has a pattern in it. I can clap the pattern while you say the words.”</i> (Child shows a drawing): <i>“I drew how rainbows are made.”</i></p> <p>Doing When trying to show the motion of a kite flying, the child stands up and throws her hands in the air and says, <i>“Whooooosh”</i>.</p> <p>Representing A family member shares that one of the children sings songs learned in the classroom to his baby sister, and she falls asleep every time.</p>	<p>Responding An educator plays a song for the children and says, <i>“The song says getting together makes people happy. Does getting together make you feel happy? Why?”</i></p> <p>Challenging The educators show the children a series of paintings and keep the paintings on display for a period of time. They listen to and record the children’s conversations about the paintings.</p> <p>Extending The educators revisit the documentation of the conversations about the paintings with the children and talk about and build on their own and the children’s thinking.</p>

4.5 DEMONSTRATING LITERACY AND MATHEMATICS BEHAVIOURS

Children’s play is representational and provides the foundation for literacy and numeracy.

(Council of Ministers of Education, Canada, *Statement on Play-Based Learning*, 2012, p. 14)

Play is how children learn. What we want to do in our play-based approach to learning is fire a child’s imagination. Fire a child’s curiosity. ... Children learn by becoming fascinated, and the more fascinated they are, ... [the] more they will be driven to learn how to read ... Their reading will be driven by their desire to learn about what they are captivated by.

(Dr. Stuart Shanker, speaking in the video “Self-Regulation”)

Young children engage in significant mathematical thinking and reasoning in their play ... Combining free play with intentional teaching, and promoting play with mathematical objects and mathematical ideas, is pedagogically powerful.

(D.H. Clements & J. Sarama, “The Importance of the Early Years”, in R.E. Slavin [Ed.], *Science, Technology & Mathematics [STEM]*, 2014, p. 5)

-  For more information about this frame, see Chapter 2.3, “Thinking about Demonstrating Literacy and Mathematics Behaviours”.
-   For a complete list of the overall expectations in the Kindergarten program with their related specific expectations, see the appendix to this document.

OVERALL EXPECTATIONS

As children progress through the Kindergarten program, they:

1. communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts
9. demonstrate literacy behaviours that enable beginning readers to make sense of a variety of texts
10. demonstrate literacy behaviours that enable beginning writers to communicate with others
11. demonstrate an understanding and critical awareness of a variety of written materials that are read by and with their educators
12. demonstrate an understanding and critical awareness of media texts
14. demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings
15. demonstrate an understanding of numbers, using concrete materials to explore and investigate counting, quantity, and number relationships
16. measure, using non-standard units of the same size, and compare objects, materials, and spaces in terms of their length, mass, capacity, area, and temperature, and explore ways of measuring the passage of time, through inquiry and play-based learning

(continued)

As children progress through the Kindergarten program, they:

- | | |
|---|---|
| <p>17. describe, sort, classify, build, and compare two-dimensional shapes and three-dimensional figures, and describe the location and movement of objects through investigation</p> <p>18. recognize, explore, describe, and compare patterns, and extend, translate, and create them, using the core of a pattern and predicting what comes next</p> <p>19. collect, organize, display, and interpret data to solve problems and to communicate information, and explore the concept of probability in everyday contexts</p> | <p>20. apply the mathematical processes to support the development of mathematical thinking, to demonstrate understanding, and to communicate thinking and learning in mathematics, while engaged in play-based learning and in other contexts</p> <p>21. express their responses to a variety of forms of drama, dance, music, and visual arts from various cultures and communities</p> <p>22. communicate their thoughts and feelings, and their theories and ideas, through various art forms</p> |
|---|---|



All children are viewed as competent, curious, capable of complex thinking, and rich in potential and experience.

EXPECTATION CHARTS**OE1**

As children progress through the Kindergarten program, they:

communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts



See the Professional Learning Conversation following the chart.

Conceptual Understandings

- Communication has the power to influence and encourage change.
- We learn about the world, others, and ourselves through listening.
- The ways in which people communicate are diverse and are influenced by their background experiences.
- Communication includes non-verbal behaviours and gesturing. We can experiment with words to achieve intended effects.
- Knowledge is socially constructed – created by people learning, working, and investigating together – and can be shared.
- Oral language is the basis for literacy, thinking, and relating in all languages.



INSIDE THE CLASSROOM: REFLECTIONS ON PRACTICE

EXAMPLE 1: The Old Lady Who Swallowed a Fly

Setting the Context: The children were gathered with the educators, who were reading aloud the big book *I Know an Old Lady Who Swallowed a Fly*. During the course of the reading, one of the children (A), referring to the old lady, said:

Child A: “*She is really smart.*”

Educator’s thoughts in the moment: I wonder what he means. That doesn’t make sense.

Child B: “*No, she is not smart, she is dumb; she is eating animals.*”

Educator’s thoughts in the moment: A is younger and looks up to B. In fact B often corrects me. So now what? I want to rescue A and say something like, “A, *why don’t you ask a friend for help?*” I feel worried for A because I don’t want his feelings to get hurt. Should I say something about using the word “dumb”?

RETHINK

“I decided to do something different. I waited a very brief moment and then said, ‘*Why are you thinking the old lady in the story is smart?*’”

Child A: “*Because she knows exactly which animal to eat and the order. She knows which animal will eat the one from before.*”

Child B: “*Hey, yeah, she is smart.*”

Educator’s thoughts upon reflection: This was so interesting. I was so concerned about protecting child A, but when I paused and gave child A a chance to explain his thinking, even though I was perplexed by what he said, it became clear that he’d been able to infer an important meaning from the text. Also he took a risk by disagreeing with child B, whom he looks up to. I am not critical about the fact that my instinct was to rescue child A, but I learned that sometimes waiting and probing a child’s thinking leads to such rich learning. Waiting and asking a prompting question helped us all to learn from child A.

STRATEGIES FOR SUPPORTING COMMUNICATION

Educators can:

- acknowledge what children are doing as a way to sustain their interest (e.g., “I see that you lined up your cars in a row”);
- support children as they work through a process (e.g., “I see you found a way to get the car all the way down the ramp”);
- reaffirm vocabulary that children use (e.g., “You’re right. The blue car is *faster* than the red car”);
- introduce new vocabulary informally (e.g., “Look at how far the blue car *travelled*”);
- ask for clarification, elaboration, or justification (e.g., “What do you think will happen if you change the ramp?”);
- challenge children’s thinking by posing questions (e.g., “How did you know?” “Why did you decide ...?”);
- prompt children to retell in different ways, such as by labelling, identifying, describing, and/or summarizing (e.g., “Tell me how you made the ramp higher”; “Tell me why you ...”);
- guide children to make connections by comparing, contrasting, and/or applying (e.g., “That’s the same as ...”; “What does this make you think of?”);
- lead children to reflect on experiences and encourage questioning, inferring, and further wonderings (e.g., “I wonder what would happen if ...”; “I wonder why ...”; “I wonder what you could try next”).

EXAMPLE 2: Ice Fishing

Educators may need to re-examine their assumptions about how specific strategies promote intended learning.

Setting the Context: A small group of children were discussing their expertise with ice fishing. The educators wanted to establish a space in the classroom where the children could retell and dramatize their ice-fishing experiences, so they provided materials for the children at the water table.

Educator’s thoughts in the moment: How can we work some literacy into the children’s play at the water table?... Let’s add letters. The children can fish for letters.

The children’s experience: When asked what they thought they were learning, the children said they were learning how to fish.

Consolidating and Considering: There was a disconnect between what the children thought they were learning and what the educators thought the children were learning. When learning is buried in an activity – in this case, using print *out of context* by fishing for letters – it may confuse the children.

QUESTIONS FOR REFLECTION: WHAT ARE THE CHILDREN LEARNING?

- What do we think the children are learning when we introduce this new game?
- What might the children think they are learning?
- What other literacy opportunities might have been possible in the scenario of Example 2?



Video title: “Literacy Through the Day” – see the clips “Literacy as a whole class community – Creating a community of thinkers and readers: What strategies are the children thinking about and demonstrating?” and “Strategies to support oral language development”.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators’ Intentional Interactions</p>
<p>1.1 explore sounds, rhythms, and language structures, with guidance and on their own</p>	<p>Saying <i>“That rhymes with my name.”</i> <i>“That is the word ‘sat’. I know because I know the word ‘cat’.”</i> <i>“My name has three [syllables].”</i> <i>“That word starts just like my name.”</i></p> <p>Doing A small group of children make their names with magnetic letters.</p>	<p>Responding The educators create a learning area using a filing cabinet and a table where children can work with magnetic letters. They place two sets of the children’s name cards at the table so that they can observe the children’s thinking about matching their names and what the children notice about the letters in their names and the names of their friends. The educators then document what the children are saying and doing so they can support the children’s writing.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A small group of children chant nonsense words to rhyme with their names.</p> <p>A small group of children draw lines and representations of musical notes to show the sounds of their names.</p> <p><i>(The examples also show: literacy behaviours – awareness of concepts of print, the alphabetic principle, the fact that letters make sounds and the sounds have meaning [phonological and phonemic awareness]; reading and writing behaviours – matching letters and sounds and using that knowledge to write.)</i></p>	<p>Challenging</p> <p>An educator observes two children working with the name cards and magnetic letters. She places a class list on the table so that the children can work with the names of other children in the class.</p> <p>Extending</p> <p>At the sand table/bin, an educator works with a small group of children who are making signs for the city they have created. The educator models how to stretch out the words when saying them aloud, to enable the children to hear the sounds and match them to the letters that make the sounds. The educator then engages the children in interactive writing, as appropriate to the level of support they need.</p>
<p>1.2 listen and respond to others, both verbally and non-verbally (<i>e.g., using the arts, using signs, using gestures and body language</i>), for a variety of purposes (<i>e.g., to exchange ideas, express feelings, offer opinions</i>) and in a variety of contexts (<i>e.g., after read-alouds and shared reading or writing experiences; while solving a class math problem; in imaginary or exploratory play; in the learning areas; while engaged in games and outdoor play; while making scientific observations of plants and animals outdoors</i>)</p>	<p>Saying</p> <p>(At the sand table):</p> <p><i>“What are you doing?”</i></p> <p><i>“I’m building a road for my city.”</i></p> <p><i>“It’s too curvy. You should make it straighter.”</i></p> <p>(After a class read-aloud):</p> <p><i>“That was a pretend story. Cats can’t fly!”</i></p> <p>(In the gym or outside in the playground):</p> <p><i>“Can you do this?”</i> (The child hops on one foot.)</p>	<p>Responding</p> <p>The educators plan to observe children, giving them more time to communicate their thinking, both verbally and non-verbally. They use strategies such as waiting for the child to speak first while silently counting to a certain number before saying anything (wait time). They communicate to the children that they are trying to listen more and “listen differently”, and to give the children more time to communicate their thinking.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>(A small group of children are measuring their bean plants):</p> <p><i>“I think mine grew the most. It used to be four cubes tall and now it is seven cubes tall. Did yours grow?”</i></p> <p><i>“Mine hardly grew at all – it is only three cubes.”</i></p> <p>(The examples also show: mathematics behaviours – recognizing quantities, including differences in quantities, and understanding the concept that objects can be measured.)</p> <p>Representing</p> <p>The children take pictures of their bean plants and post them on their blog. They include the date and the height of their plants that day. Some of the parents use an online communication tool so the children can listen to their responses.</p>	<p>Challenging</p> <p>The educators begin to observe children in all contexts, with a focus on watching their non-verbal communication. They document the multiple ways that children communicate.</p> <p>Extending</p> <p>The evidence from their documentation about how children communicate is the educators' assessment <i>for</i> learning, which informs how they respond. The documentation is shared with the children as a form of assessment <i>as</i> learning to support the children's metacognition.</p>
<p>1.3 use and interpret gestures, tone of voice, and other non-verbal means to communicate and respond (<i>e.g., respond to non-verbal cues from the educator; vary tone of voice when dramatizing; name feelings and recognize how someone else might be feeling</i>)</p>	<p>Saying</p> <p><i>“He was really BIG.”</i> (The child uses a loud voice when reading the word “big”.)</p> <p><i>“She looks really angry in the picture. Look at her eyes.”</i></p> <p><i>“First I put on my snow pants, and then I put on my boots.”</i></p>	<p>Responding</p> <p>The educators observe and create written records of the non-verbal communication used by the children.</p> <p>Challenging</p> <p><i>“What other actions can we use to show your pattern?”</i> (See the connection to SE18.1, which deals with “translation”.)</p> <p><i>“What do we do first when we are tidying up?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>1.4 sustain interactions in different contexts (e.g., with materials, with other children, with adults)</p>	<p>Doing</p> <p>Several children use non-verbal communication to support their thinking or to represent their thinking – for example, using their hands to outline the structure of an item they are building, counting or making a numeral in the air, putting their head down on a table to get a closer look.</p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clip “Making Connections to Build Working Theories”.</p> <p>A child shows another child how to do the tree pose in yoga, explaining how to place her legs and arms.</p> <p>Representing</p> <p>A child draws a picture of herself with a big smile on her face to show her feelings when her family gets a new kitten for a pet. Other children begin to draw, write, and talk about their pets or pets they would like to own. The educators talk with the children about how authors influence and inspire others to write in a particular writing form. Over time, the children and educators think about and document different purposes for writing.</p>	<p>Extending</p> <p>During a cooking experience, an educator models procedural writing by recording the steps to follow in making the recipe. The educator and children notice and name the purpose for writing.</p> <p>Two children are playing with a train set. An educator observes them replacing some parts of the track with different parts, building on different levels, taking turns moving the train on the tracks, and changing the connections for the tracks. All of this is done using non-verbal communication. The educators make a video of the interaction. The educators revisit the video with each other and with the children. While revisiting the video, they notice and name what they see and hear. The children add to their thinking each time they view the video.</p>
<p>1.5 use language (verbal and non-verbal communication) in various contexts to connect new experiences with what they already know (e.g., contribute ideas during</p>	<p>Saying</p> <p><i>“I made a sandcastle like this at the beach.”</i></p> <p><i>“I built a snowman with my sister like the one in the story.”</i></p>	<p>Responding</p> <p><i>“What do you notice when we add ...?”</i></p> <p><i>“That is just like...”</i></p> <p><i>“You made a connection.”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p><i>shared or interactive writing; contribute to conversations in learning areas; respond to educator prompts)</i></p>	<p>(The examples also show: literacy behaviour – making connections.) <i>“I noticed that if I hold the tube up higher the water moves faster.”</i></p> <p>(The example also shows: literacy behaviour – drawing conclusions.)</p> <p>Doing</p> <p>A child changes the height of the tube after several attempts to make the water move faster.</p> <p>Representing</p> <p>A child adds a letter to a familiar word during small-group interactive writing.</p> <p>A small group of children represent their experiences with the roads in their community and the role of the police officer, construction workers, and a local restaurant.</p> <p> Video title: “Play-Based Learning” – see the clip “The FDELK team members engage with children in different ways, prompting children to reveal their thinking in role”.</p>	<p>The educators negotiate classroom materials with the children, discussing what is already available in different areas of the room and what else the children think they need to help them communicate and represent their thinking and learning.</p> <p> Video title: “Literacy Through the Day” – see the clip “Rethinking the learning environment to support literacy – Co-constructing the learning environment with the children”.</p> <p>Challenging</p> <p>An educator works with a child on an interactive writing piece. From previous observations, he knows what letters the child knows, and uses prompts such as, “<i>That starts like ...</i>” to help the child connect what he already knows to a new context.</p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clips “Communicating Understanding Through Writing”; “Noticing and Naming the Learning” and “Co-constructed Negotiated Learning”.</p> <p>Extending</p> <p>The educators observe that the children are noticing and wondering about rain. They pose the following question: <i>“What do you think we might see after the rain?”</i> They record the children’s ideas.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>The next day it is still raining. To help children connect their previous thinking to the new experience, the educators ask the children, “<i>What do you think we will see today?</i>” and extend the thinking by asking, “<i>What makes you think that?</i>” They record the children’s ideas and work with the children to compare their current ideas to their previous responses.</p>
<p>1.6 use language (verbal and non-verbal communication) to communicate their thinking, to reflect, and to solve problems</p>	<p>Saying</p> <p><i>“I think we should try it like this.”</i></p> <p><i>“I kept trying, and then I caught the ball.”</i></p> <p><i>“I put the big block on the bottom, and then it was stable.”</i></p> <p><i>“I used the picture, and then I knew the word.”</i></p> <p>Doing</p> <p>A child decides to find all the children in the class who have the letter “S” in their name. He uses the word wall and tells another child his plan. This leads to more children joining the investigation. <i>(The example also shows: literacy behaviour – using tools that writers use.)</i></p> <p>A child and an educator are co-constructing learning as the child is engaged in inquiry using a balance scale. The child is trying to figure out how to make the scale balance.</p>	<p>Responding</p> <p><i>“I wonder how you knew that.”</i></p> <p><i>“Were you thinking about ...?”</i></p> <p><i>“How did you use the picture to figure out that word?”</i></p> <p>Challenging</p> <p><i>“How did you figure that out?”</i></p> <p><i>“What do you think would happen if ...?”</i></p> <p><i>“What sound would we expect to hear at the beginning if the word is ...?”</i></p> <p>Extending</p> <p><i>“What were you thinking about?”</i></p> <p><i>“I wonder if there is another way you could solve that problem.”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	 Video title: "Numeracy Through the Day" – see the clip "Co-constructing learning". Representing During a class sharing time, a small group of children share their solution for joining their structures in the blocks area.	
1.7 use specialized vocabulary for a variety of purposes (<i>e.g., terms for things they are building or equipment they are using</i>)	Saying (In the blocks area): <i>"We put a roof on our house."</i> (At the water table): <i>"I poured the water into a funnel."</i> (In the gym): <i>"Look at how I can balance on only my behind!"</i> Doing After listening to a book about farming, a child creates a farm in the blocks area. <i>"My silo doesn't have any grain in it yet."</i> Representing A child puts together a collage in the visual arts area. <i>"I used 'shiny' objects."</i> A small group of children create a cave for frogs and spray water onto the rocks to demonstrate the waves crashing.	Responding The educators reorganize the visual arts area. They remove most of the materials in order to have a more "controlled palette", and they add a variety of shiny papers and found objects to support the children's growing understanding of the properties of different materials. They talk with the children about what they notice. Using assessment <i>for</i> learning they document and notice and name how and why the children/artists use specialized vocabulary. The children use comparative language, and the educators notice and name the vocabulary. The children also begin to notice and name with each other. Challenging <i>"I heard you say you put a roof on your house. I observed the 'angle' you used on the roof. (The educator points to the angle while using the word.) 'Angle' is a mathematical word."</i>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	 Video title: "Play-Based Learning" – see the clip "How do educator teams co-construct learning through play and make learning visible?".	Extending The educators plan ways to support children's development of vocabulary. One strategy is to model new vocabulary in the context of the children's play in different areas.  Video title: "Play-Based Learning" – see the clip "Following children's thinking to respond, extend and challenge".
1.8 ask questions for a variety of purposes (<i>e.g., for direction, for assistance, to innovate on an idea, to obtain information, for clarification, for help in understanding something, out of curiosity about something, to make meaning of a new situation</i>) and in different contexts (<i>e.g., during discussions and conversations with peers and adults; before, during, and after read-aloud and shared reading experiences; while exploring the schoolyard or local park; in small groups, in learning areas</i>)	Saying <i>"Can you help me do this?"</i> <i>"Why does smoke go up when everything else seems to go down?"</i> <i>"What is the boy going to do now?"</i> <i>"What is this for?"</i> <i>"Can this go together?"</i> <i>"Why did you put that there?"</i> Doing During small-group shared reading, the children ask questions about the book the educators have planned for their reading group. Representing The children are invited to write on sticky notes any questions they have about the empty bird's nest one of the children has brought to class.	Responding The educators model different types of questions and use think-alouds to make the purpose for each type of question explicit for the children. They make their thinking visible with statements such as: <i>"We use questions for different purposes."</i> <i>"I wonder – where are all the places we ask questions?"</i> Challenging During small-group shared reading, an educator records the children's questions about the book and posts them for the children to revisit.  Video title: "Literacy Throughout the Day" – see the clip "Literacy as a whole class community – Creating a community of thinkers and readers: What strategies are the children thinking about and demonstrating?".

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>Extending</p> <p>The educators invite the children to use the names in the name pocket chart or the names on a class graph to think about questions such as: <i>“How does knowing how many children came to class today help us figure out how many children are away?”</i> The educators also document children’s demonstration of mathematical behaviours/ awareness such as interpreting data, comparing quantities, and thinking about more/less.</p>
<p>1.9 describe personal experiences, using vocabulary and details appropriate to the situation</p> <p>1.10 retell experiences, events, and familiar stories in proper sequence (<i>e.g., orally; in new and creative ways; using drama, visual arts, non-verbal communication, and representations; in a conversation</i>)</p>	<p>Saying</p> <p><i>“I went to visit my cousin on the weekend.”</i></p> <p><i>“I had a bad cold and a fever, but I am feeling better now.”</i></p> <p>Doing</p> <p>A small group of children describe and show the steps they took to roll a ball all the way down a ramp without the ball falling off the ramp.</p> <p>Representing</p> <p>At the sand table, the children retell the story of “The Gingerbread Man”, based on a book they have just heard in a read-aloud. They use props</p>	<p>Responding</p> <p>During a whole-class discussion, the educators model the sequence for retelling. They think together with the children about the idea that audience and purpose are important when we plan to retell something. They also think together with the children about why we retell stories and events, both in school and outside of school.</p> <p>Challenging</p> <p>The educators take digital photographs of the children putting on their winter outdoor clothing. They invite the children to arrange the pictures in proper sequence and they record</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>that have been intentionally placed at the sand table by the educator to retell the events they remember from the story.</p> <p> Video title: "Literacy Through the Day" – see the clip "Literacy as a whole class community – Creating a community of thinkers and readers: What strategies are the children thinking about and demonstrating?".</p>	<p>their observations of the children's sequencing. The educators work with a small group of children who would benefit from interactive writing to add text to the sequenced photos.</p> <p>Extending</p> <p>The educators meet with individual children or small groups of children to think about other things that happen in a particular sequence (<i>e.g., making a cake</i>). They invite the children to record the sequence in some way and to post it in an appropriate place in the classroom (<i>e.g., the class bakery</i>).</p> <p>(<i>Note:</i> The children are selected based on assessment information.)</p>
<p>1.11 demonstrate an awareness that words can rhyme, can begin or end with the same sound, and are composed of phonemes that can be manipulated to create new words</p>	<p>Saying</p> <p><i>"That word ends like my name."</i></p> <p><i>"'Play' and 'day' end with the same sound."</i></p> <p>Doing</p> <p>A small group of children work with magnetic letters, making and breaking apart their names.</p> <p>Representing</p> <p>A small group of children write a list of rhyming words on transparencies and project them on the wall.</p>	<p>Responding</p> <p>An educator works with a small group of children who the team has determined (based on assessment information) need additional support with hearing sounds in words. In conversation with one child's family, the educators learn that the child has had several ear infections in the last couple of years. Together, the educators and the family talk about strategies to help the child both at home and at school. At school, the children use their name cards and sets of magnetic letters to make and break apart their names. The educators send home envelopes with letter tiles and name cards</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>so the families can play the sound games at home. The educators also explain that hearing the sound is only one of the strategies readers use. For example, they can also use the pictures to support their reading. The educators also talk with the children about how hearing and thinking about the sounds is part of what writers/authors do.</p> <p>Challenging</p> <p>The educators work with a small group of children who have demonstrated that they can hear the first sound in a word. The educators support the children's focus on the last sounds in their names.</p> <p>Extending</p> <p>The educators generate rhymes and manipulate sounds (replacing or deleting initial sounds) and words in shared, guided, and independent activities such as singing songs or chants or participating in finger plays.</p>


Professional Learning Conversation

Re. OE1: A group of educators discuss the importance of maintaining the child's home language. Their focus is on the role that educators can play in

helping families recognize the benefits of maintaining their home language as an integral part of their culture, values, social attitudes, and behaviour.

OE9

As children progress through the Kindergarten program, they:
demonstrate literacy behaviours that enable beginning readers to make sense of a variety of texts

 See the Professional Learning Conversation following the chart.

Conceptual Understandings

- Reading is an active process of interacting with and constructing meaning from text.
- Reading strategies help us to understand the meaning of different texts.
- Readers use a variety of strategies to think about and understand what they read.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*
(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>9.1 use reading behaviours to make sense of familiar and unfamiliar texts in print (e.g., use pictures; use knowledge of oral language structures, of a few high-frequency words, and/or of sound-symbol relationships)</p>	<p>Saying</p> <p><i>"I knew it said 'spider' 'cause I used the picture."</i></p> <p><i>"I know that says 'the'."</i></p> <p><i>"I made my voice loud here because it gets dark (pointing at the bold print)."</i></p> <p>Doing</p> <p>During independent reading, a child points to the words, looks at the pictures, and rereads after a miscue.</p> <p>A group of children are designing the letters for the class alphabet as a resource for children to use. The educators observe the children writing</p>	<p>Responding</p> <p>The educators scaffold the children's application of reading strategies by thinking aloud and asking questions such as:</p> <p><i>"Let's do a picture walk of the book."</i></p> <p><i>"I noticed you looked at the pictures."</i></p> <p><i>"What makes you think that ...?"</i></p> <p>The educators use the information they have gathered to support assessment for learning to decide on a text to read with a group of children. They ask themselves, <i>"Why this learning, for these children, at this time?"</i> Based on their assessment</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>down the alphabet and then talking about which of the construction materials would work best for each letter.</p> <p>The educators ask themselves, <i>“What reading strategies are the children using? What are we learning about the children’s literacy behaviours and what they know about how letters and reading work?”</i></p> <p>Representing</p> <p>A group of children decide to make the dramatic play area into a bookstore.</p> <p>A group of children are using blocks to build a structure. The educators observe the children using the same underlying thinking and strategy they saw children using during the taking of a running record. (A child was cross-checking, trying something to see if it worked.) The educators name the strategy, saying, <i>“That is just like when you were reading this morning.”</i></p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clip “Planning for Small Group Shared Reading”.</p>	<p>information, they determine that the level of support the children need is small-group shared reading, and then select an appropriate text.</p> <p>Challenging</p> <p><i>“If you think the word is ‘jump’, what letter will we see at the beginning when we lift the sticky note?”</i></p> <p>An educator notices and names to make the learning explicit as the children engage in a read-aloud.</p> <p> Video title: “Literacy Through the Day” – see the clip “Literacy as a whole class community – Creating a community of thinkers and readers: What strategies are the children thinking about and demonstrating?”.</p> <p>Extending</p> <p>Assessment information reveals that a small group of children know a number of high-frequency words, have letter and sound knowledge, and are able to read simple patterned text.</p> <p>The educators determine that this group of children would benefit from a guided reading lesson using a non-fiction text.</p>

Professional Learning Conversation

Re. OE9: Following up on feedback from a meeting with families, an educator decides to send home a couple of the questions she uses when reading with children to help children comprehend the text. She asks some families to help by translating the following questions into the home

language: “*What do you think might happen in the book?*” “*How did you figure that out?*” “*What does this book remind you of?*” The educator then also invites the families to share other questions that they ask when reading with their children.

OE10

As children progress through the Kindergarten program, they:

demonstrate literacy behaviours that enable beginning writers to communicate with others

 See the Professional Learning Conversation following the chart.

Conceptual Understandings

- Written communication enables us to make thoughts, ideas, and feelings visible to others.
- We write for a variety of reasons and purposes.
- It is important for others to understand what we are trying to say through writing.
- Writers think first about the purpose and the audience for their writing and then about what form of writing would best convey their desired meaning.
- Writers use different tools and resources to help them write.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators’ Intentional Interactions
10.1 demonstrate an interest in writing (<i>e.g., choose a variety of writing materials, such as adhesive notes, labels, envelopes, coloured paper, markers, crayons, pencils</i>) and choose	Saying <i>“What does that say?”</i> <i>“What does it mean?”</i> <i>“I want to write a note to my friend.”</i>	Responding The educators notice the children’s growing interest in writing notes to each other. They talk with the children, saying, <i>“We noticed that you were interested</i>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>to write in a variety of contexts (e.g., draw or record ideas in learning areas)</p> <p>10.2 demonstrate an awareness that text can convey ideas or messages (e.g., ask the educator to write out new words for them)</p>	<p>Doing</p> <p>A child notices the question “How many scoops?” posted at the sand table by the educators. The child begins to count the scoops.</p> <p>The children decide to take a survey to question their classmates about an event or a preference/opinion.</p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clips “Provoking an Inquiry Stance in Mathematics” and “The Inquiry Process in Action”.</p> <p>Representing</p> <p>A child writes a sign in the dramatic play area to show what movie is playing at the theatre.</p>	<p><i>in communicating in writing with each other. Where do you think we could add writing materials to the classroom? What materials should we add?”</i></p> <p> Video title: “The Learning Environment” – see the clip “Thinking deeply about the learning environment – planning the materials and spaces to make learning visible”.</p> <p>Challenging</p> <p>The educators notice the sign that has been made for the theatre. They ask the children what other information could be added to the sign that would be helpful to people coming to the movie.</p> <p>Extending</p> <p>The educators observe the children in the dramatic play area solving the problem of who will be the first to use some new materials that have been placed there by the educators. The educators ask the children to share their solution, including their list, with the rest of the class.</p>
<p>10.3 write simple messages (e.g., a grocery list on unlined paper, a greeting card made on a computer, labels for a block or sand construction), using a combination of pictures, symbols, knowledge of the correspondence between letters and sounds (phonics), and familiar words</p>	<p>Saying</p> <p>“This is a word in my language.”</p> <p>“I used the word wall to help me write [the word].”</p> <p>“I wrote ‘CLOSED’ on the bookstore.”</p> <p>“We used tallies to keep track of the number of ants in our ant farm.”</p>	<p>Responding</p> <p>To support children’s use of written communication in many contexts, the educators post signs children have written in their home language(s).</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>Children write letters to one another and to family members, make signs in the blocks area, record their findings at the water table, make a list of classmates' names in the dramatic play area, and make greeting cards in the visual arts area.</p> <p>Representing</p> <p>A child who is reluctant to write in the writing area draws a labelled picture of his blocks structure in the blocks area.</p> <p>A child who is learning English writes labels for her picture in her home language.</p>	<p>Challenging</p> <p>An educator is sitting beside a child who is writing a description of her inquiry about making a ball roll faster down the ramp. To support the child in hearing and recording sounds, the educator uses prompts such as:</p> <p><i>“Stretch the word and listen to the sounds. What sound do you hear at the beginning (middle, end) of that word?”</i></p> <p><i>“It starts like your name.”</i></p> <p> Video title: “Literacy Through the Day” – see the clip “Rethinking whole-class instruction and moving towards small-group, differentiated support – Reflections on the impact on children’s learning. Children’s Engagement”.</p> <p>Extending</p> <p>The educators work with each child to select writing/drawing/painting samples for the child’s portfolio. They have portfolio conferences with the children to discuss what the children notice about their development as writers (an example of assessment <i>as</i> learning). As many families are unable to attend the conferences in person, the educators take photographs and upload them to an e-portfolio and have phone conversations with families after they have accessed the work samples on a secure, password-protected blog.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>10.4 use classroom resources to support their writing (e.g., a classroom word wall that is made up of children's names, words from simple patterned texts, and words used repeatedly in shared or interactive writing experiences; signs or charts in the classroom; picture dictionaries; alphabet cards; books)</p>	<p>Saying</p> <p><i>"I know – I can use the word wall."</i></p> <p><i>"That is the same as a word from the book."</i></p> <p><i>"I know this is how you write it because I saw it on the card."</i></p> <p>Doing</p> <p>While playing with blocks, a group of children decide they need a secret password for their structure. To write the password, they use the word wall to help them figure out the letters for the words they want to write.</p> <p>Representing</p> <p>A small group of children make their own list of names, modelled after a class list. They use the list at the restaurant in the dramatic play area.</p>	<p>Responding</p> <p>The educators place photographs of the children beside their names on the word wall. At the request of several of the children, they also place class lists in several areas as a resource for children's writing. The educators negotiate the placement of the materials with the children. This leads to more engagement for all children, and the educators gain insights into the children's thinking about what writers do.</p> <p> Video title: "Literacy Through the Day" – see the clip "Rethinking the learning environment to support literacy – Co-constructing the learning environment with the children"</p> <p>Challenging</p> <p><i>"What could you use to help you figure out how to write the word?"</i></p> <p> See "Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day" – the clips "Deepening Our Understanding: Supporting Children's Writing" and "Deepening Our Understanding: Supporting Children's Writing Using Technology".</p> <p>Extending</p> <p>The educators put words from the word wall on binder rings so they are portable and the children can use them at various places in the room.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>10.5 experiment with a variety of simple writing forms for different purposes and in a variety of contexts</p> <p>10.6 communicate ideas about personal experiences and/or familiar stories, and experiment with personal voice in their writing (<i>e.g., make a story map of “The Three Little Pigs” and retell the story individually to a member of the educator team during a writing conference</i>)</p>	<p>Saying</p> <p>“Let’s make a list.”</p> <p>“I am writing an invitation to my party.”</p> <p>“I put these labels on my drawing of my structure.”</p> <p>Doing</p> <p>A child in the dramatic play area decides to create an appointment book for the “doctor’s office”. The child also writes appointment cards for the “patients”.</p> <p>Representing</p> <p>A child makes a drawing of a day at the park and retells her experiences to her classmates.</p>	<p>Responding</p> <p>The educators observe that children in the dramatic play area are making an appointment book and writing appointments in it. An educator joins the play and prompts the children to include the sounds they hear in the words.</p> <p>Challenging</p> <p>A small group of children talk with an educator about a text feature they notice an author has used in a familiar read-aloud. The educator invites the children to try it in their own writing. A few days later, he notices that one of the children has tried the technique. He asks the child to share it with others.</p> <p> Video title: “Literacy Through the Day” – see the clip “Making Learning Visible - Observing, documenting, analysing, taking informed action. Rethinking Writing”.</p> <p>Extending</p> <p>The children write their questions, ideas, and predictions, and the educators provide materials for the children to test out their theories.</p> <p> Video title: “Inquiry” – see the clip “What does it look like and sound like to co-construct inquiry with the children? Listening in on a classroom inquiry”.</p>


Professional Learning Conversation

Re. OE10: The educators post the stages of picture making and the stages of writing in the writing area and on the Family Information Board. They post pedagogical documentation that shows the children's thinking and learning. Children have been drawing and writing to communicate a memory, retell an experience, describe a point of view, describe a structure, and/or gather data from their classmates. At subsequent family conferences, the educators ask the

parent(s) to share the kinds of writing that children do at home, and discuss with the parent(s) how the samples of the children's work illustrate the stages of picture making and writing. Together, the educators and the parent(s) discuss the children's thinking, learning, and progress. At their drop-in coffee mornings, several parents comment that talking about the documentation has helped them understand their child's learning process.

OE11

As children progress through the Kindergarten program, they:

demonstrate an understanding and critical awareness of a variety of written materials that are read by and with their educators

Conceptual Understandings

- Being literate enables people to think about and make sense of the world.
- We read for a variety of reasons and purposes.
- Reading makes us think and feel in different ways.
- There are different types of texts.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>11.1 demonstrate an interest in reading (<i>e.g., expect to find meaning in pictures and text; choose to look at reading materials; respond to texts read by the educator team; reread familiar text; confidently make attempts at reading</i>)</p> <p>11.2 identify personal preferences in reading materials (<i>e.g., choose fiction and non-fiction books, magazines, posters, or computerized interactive texts that they enjoy</i>) in different contexts (<i>e.g., educator team read-alouds, shared experiences in reading books, independent reading time</i>)</p>	<p>Saying</p> <p><i>“I like the bug books because I really like spiders.”</i></p> <p><i>“I am making a maze. I read books about mazes all the time.”</i></p> <p><i>“Read the book about Thomas again.”</i></p> <p>Doing</p> <p>In the reading area, a group of children choose books from a basket. Previously, the educators have worked with the children to sort the books so the children can make informed choices.</p> <p>Representing</p> <p>In the dramatic play area, a group of children role-play characters from a book they have just heard in a read-aloud.</p>	<p>Responding</p> <p>The educators document what books the children are choosing in order to gather more books they will be interested in reading.</p> <p>The educators rethink the environment to encourage literacy behaviours and awareness throughout the day and in different contexts, including the children’s reading and their documentation of their own learning.</p> <p> Video title: “The Learning Environment” – see the clips “Thinking about elements to repeat in the environment” and “Co-constructing and negotiating the learning environment – including the children’s voices and ideas”.</p> <p>Challenging</p> <p>An educator models sharing her individual reading preferences for the children.</p> <p>Extending</p> <p>The educators plan discussions focused on “how to choose a good book for yourself” (<i>e.g., by looking at the front cover and the illustrations</i>).</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>11.3 demonstrate an awareness of basic book conventions and concepts of print when a text is read aloud or when they are beginning to read print (<i>e.g., start at the beginning of the book; recognize that print uses letters, words, spaces between words, and sentences; understand that printed materials contain messages</i>)</p>	<p>Saying</p> <p><i>“That is the title of the book.”</i></p> <p><i>“I know that letter.”</i></p> <p><i>“Look, I remembered the finger space (between words).”</i></p> <p>Doing</p> <p>Children hold books the right way up, use a finger to demonstrate left to right directionality, and attempt to read the story. They begin to recognize the difference between letters and words. They may follow the print for the class, using a finger or a pointer, as a story is read aloud during shared reading.</p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clips “Inviting the Children into New Learning” and “Explicit Learning About Concepts of Print”.</p> <p>Representing</p> <p>Children write random strings of letters and begin to leave a space between “words”.</p>	<p>Responding</p> <p>To help children develop basic concepts of print, the educators model print concepts during shared reading and modelled and interactive writing, asking questions such as: <i>“Where do we start to read?”</i></p> <p>Challenging</p> <p>The educators create opportunities for the children to reread familiar text on their own, in small groups, and with the educators. The educators reflect and ask, <i>“Why this learning, for these children, at this time?”</i> They know that repeated reading, revisiting text, thinking about words and sentences, and making meaning from text are all foundational literacy behaviours.</p> <p>Extending</p> <p>An educator discusses with the children where to place co-constructed text for revisiting and rereading.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>11.4 respond to a variety of materials that have been read aloud to them (<i>e.g., paint, draw, or construct models of characters or settings</i>)</p>	<p>Saying</p> <p><i>“My grandpa and I collected rocks, and we made an Inuksuk like the one in the painting.”</i></p> <p><i>“I live in an apartment, too, just like the family in the book.”</i></p> <p>Doing</p> <p>A small group of children decide to make an alphabet book using their names. They use digital photographs to make it look like a book in their classroom library.</p> <p>Representing</p> <p>After focusing on the comprehension strategy of visualization, the children share their images, using words, movement, and/or graphic representation.</p> <p> See “Kindergarten Matters Re-imagining Literacy and Mathematics Throughout the Day” – the clip “Reading and Writing Connections”.</p>	<p>Responding</p> <p>After reading a book about a forest to the children, an educator asks questions such as:</p> <p><i>“How do you think the author feels about forests?”</i></p> <p><i>“How do you think the author wants us to feel about forests?”</i></p> <p><i>“Why do you think there are photographs instead of illustrations in the book?”</i></p> <p>The educators ask questions for similar purposes with other texts. The purpose is to elicit the children’s thinking about the perspective of the author, and to think critically about the message and point of view.</p> <p>Challenging</p> <p>After reading a book about a social issue relevant to the class, an educator ask questions such as:</p> <p><i>“Who is this book written for?”</i></p> <p><i>“Who is telling the story?”</i></p> <p><i>“How would this story be different if another person or character told the story?”</i></p> <p>Extending</p> <p>Visualization is a comprehension strategy that is quite abstract for young children but is one way to support their understanding of text.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>For several days the educators focus on having children practise the strategy of visualizing or making pictures in their minds. In order to make this abstract strategy more concrete, the educators plan for the children to practise visualization on a rainy day.</p> <p>After guiding the children's observations of a rainy day, the educators then ask the children to close their eyes and "paint" a picture in their heads of what they have seen. The children share their "pictures" orally.</p> <p>Several days later, the educators read aloud a poem about the rain, building on the children's prior understanding.</p>
<p>11.5 make predictions regarding an unfamiliar text that is read by and with the educator team, using prior experience, knowledge of familiar texts, and general knowledge of the world around them (<i>e.g., use the cover pictures and/or title to determine the topic and/or text form</i>)</p>	<p>Saying</p> <p><i>"I think it is going to be about a party because there are balloons on the cover."</i></p> <p><i>"I think the baby is going to cry because babies cry when they are hungry."</i></p> <p><i>"I think this is non-fiction because there is a photograph on the cover."</i></p> <p><i>"I think this is going to be about two friends because there are two kids on the cover."</i> (Another child states): <i>"Maybe they could be brothers."</i></p>	<p>Responding</p> <p><i>"What do you think might happen in the book? How did you figure that out?"</i></p> <p>Challenging</p> <p><i>"What in the book makes you think that?"</i></p> <p><i>"What does the picture tell us about what might happen in the book?"</i></p> <p><i>"What clues did you use to try and figure that out?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>"I thought that was the word 'sandcastle' because I looked at the picture and it starts with 'S'."</i></p> <p>Doing</p> <p>A child looks out of the window to see if it is still raining, in order to predict whether the class will be going outside to play.</p> <p>A child looks ahead in a book and then turns back, saying, <i>"I thought that the girl wasn't going to let her sister play with her new game, but she did."</i></p> <p>Representing</p> <p>A small group of children record a written response to the questions of the day (posted by the educator team):</p> <p><i>"Do you think it will rain tomorrow? What makes you think that?"</i></p>	<p>Extending</p> <p><i>"What words do you think might be in this book?"</i></p> <p><i>"What do you know about birds that will help you read this book?"</i></p>
<p>11.6 use prior knowledge to make connections (<i>e.g., to new experiences, to other books, to events in the world</i>) to help them understand a diverse range of materials read by and with the educator team</p>	<p>Saying</p> <p><i>"I live in an apartment, too."</i></p> <p><i>"That's just like the other book we read."</i></p> <p><i>"That book is just like the movie I saw."</i></p> <p>Doing</p> <p>During an outdoor inquiry, children use their prior knowledge gained from investigating shadows (<i>e.g., the knowledge that shadows move when you move</i>) to investigate what happens to shadows when they sit down.</p>	<p>Responding</p> <p>An educator models the use of think-alouds to make explicit the reading strategy of using prior knowledge to make connections.</p> <p>The educators document their observations of children during play (to support assessment for learning). After analysing the pedagogical documentation, they learn that the children have been making connections to their prior experiences in their play. They plan to name and notice the strategy (making connections to prior knowledge)</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>The children use their prior knowledge (after having built a bridge in the blocks area) to build a “tunnel bridge”.</p>	<p>as one that readers use to help them understand what an author means.</p> <p> Video title: “Play-Based Learning” – see the clip “The FDELK team members engage with children in different ways, prompting children to reveal their thinking in role”.</p> <p>Challenging</p> <p><i>“What does that remind you of?”</i></p> <p><i>“What in the book made you think that?”</i></p> <p><i>“You built the structure just like in the book.”</i></p> <p><i>“I wonder if you could make other structures just like in the book.”</i></p> <p>Extending</p> <p>The educators support the children as they take digital pictures of their shadows. They have been reading books about shadows. The children wonder why they don’t have shadows indoors. The pictures will help them make connections when they revisit their inquiry indoors.</p>
<p>11.7 use illustrations to support comprehension of texts that are read by and with the educator(s)</p>	<p>Saying</p> <p><i>“It is in a park, because look at the swings.”</i></p> <p><i>“I think they are going to play in the snow because they are wearing snowsuits.”</i></p> <p><i>“I thought it said ‘train’, but the picture is a truck.”</i></p>	<p>Responding</p> <p>The educators model for the children how they can use the illustrations to help them understand what is happening in the text and figure out words they don’t know.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>"I put a picture of the dog so people would know it is the word 'dog'."</i></p> <p><i>"I saw the pictures here, and I think these are the enemies of the ants." (After breaking the word into parts, the child says): "Yes, the word is 'predators', so I was right. They are the enemies."</i></p> <p>Doing</p> <p>A small group of children, with support from an educator, reread familiar texts, including texts created in the classroom by the children (documentation, charts, stories), using the illustrations to help their comprehension.</p> <p>During a small-group shared reading experience the educator leads the children through a "picture walk" to anticipate what they will encounter when they read the book together. The educator makes a mental note of the children's thinking to document later.</p> <p> See "Kindergarten Matters Re-imagining Literacy and Mathematics Throughout the Day" – the clip "Inviting the Children into New Learning".</p> <p>Representing</p> <p>An educator takes a photo on a tablet of a construction a group of children have been making to accompany the writing the children are doing to make their own version of the book.</p>	<p>Challenging</p> <p><i>"What do you think the word will be under the sticky note? How can you use the picture to help you figure it out?"</i></p> <p>Extending</p> <p>The educators notice that several of the children are consulting non-fiction texts to find out more about ants. They work with the children to support them in applying what they already know (e.g., about using pictures and/or photographs), and also to draw their attention to other features of the texts that can help them find the information they are looking for.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>11.8 demonstrate knowledge of most letters of the alphabet in different contexts (<i>e.g., use a variety of capital and lower-case manipulative letters in letter play; identify letters by name on signs and labels in chart stories, in poems, in big books, on traffic signs; identify the sound that is represented by a letter; identify a word that begins with the letter</i>)</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>"It is a 't'. It starts just like my name."</i></p> <p><i>"It makes a 'j' sound."</i></p> <p><i>"I know it is a 'd' because it has a ball and a stick."</i></p> <p><i>"I see a 'b' like the one in 'book'."</i></p> <p>Doing</p> <p>After shared reading of some alphabet books, an educator helps the children create an alphabet book, using the children's names and pictures of objects in the classroom to represent the letters.</p> <p>Representing</p> <p>Two children work at a whiteboard with magnetic letters. They sort and compare the letters.</p> <p> Video title: "Literacy Through the Day" – see the clip "Rethinking whole-class instruction and moving towards small-group, differentiated support. Reflections on the impact on children's learning. Children's Engagement".</p>	<p>Responding</p> <p>The educators place a pocket chart holding the children's name cards beside the magnetic letters and whiteboard, so the children can use the names as a reference.</p> <p> Video title: "Play-Based Learning" – see the clip "How are educator teams rethinking their role in play-based learning?".</p> <p>Challenging</p> <p><i>"If the word is 'boy', what will the first letter be?"</i></p> <p><i>"If the word is 'snow', what is the first sound? What sound do you hear at the end of the word?"</i></p> <p>(<i>Note: The educators pose the questions based on assessment information.</i>)</p> <p> Video title: "Literacy Through the Day" – see the clip "Literacy as a whole class community – Creating a community of thinkers and readers. What strategies are the children thinking about and demonstrating?".</p> <p><i>"I wonder what will happen if I take away this letter and replace it with this one."</i></p> <p><i>"Look what happens when I put this letter beside this one. It makes a completely different sound. Isn't it interesting how letters work?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>Extending</p> <p>The educators put the word wall words on Velcro so the children can sort the words by first letter. As the year progresses, they add some high-frequency words.</p>
<p>11.9 retell, orally or with non-verbal communication, familiar experiences or stories in proper sequence (<i>e.g., in new and creative ways, using drama, visual arts, non-verbal communication, and representations; in a conversation</i>)</p> <p>11.10 retell information from non-fiction materials that have been read by and with the educator team in a variety of contexts (<i>e.g., read-alouds, shared reading experiences</i>), using pictures and/or props</p>	<p>Saying</p> <p><i>“First he ... then ...”</i></p> <p><i>“So they went around the corner and then ...”</i></p> <p><i>“She brushed her teeth and then went to bed.”</i></p> <p>Doing</p> <p>Using digital photographs to show the life cycle of the class butterflies, a child orally retells the sequence: <i>“First the butterfly is an egg, and then it turns into a caterpillar. The caterpillar spins a chrysalis, and then it’s a beautiful butterfly.”</i></p> <p>Representing</p> <p>A small group of children make videos to show the life cycle of the butterflies that they are caring for in their classroom, for future viewing and discussion.</p> <p>A small group of children and an educator use dramatic play props for opportunities for children to retell familiar stories and experiences.</p>	<p>Responding</p> <p>During a whole-class discussion, the educators model the sequence for retelling.</p> <p>The educators think together with the children about the idea that audience and purpose are important when we think about retelling. They also think together about why we retell stories and events in school and outside of school. The educators model the use of pictures and words to retell a familiar experience such as brushing teeth, washing hands, or tidying up the sand.</p> <p>Challenging</p> <p>An educator models retelling a fiction text, using natural materials. The children use the materials to retell familiar stories.</p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clip “Re-thinking Literacy Structures”.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	 Video title: "Literacy Through the Day" – see the clip "Literacy as a whole class community – Creating a community of thinkers and readers. Examples of Gradual Release of Responsibility Making Connections between oral language, reading and writing".	Extending The educators model retelling a non-fiction text, using words and the photographs in the text.  Video title: "Inquiry" – see the clip "Reflections on inquiry: the power of inquiry. Co-constructing and making learning visible".

Professional Learning Conversation

Re. SE11.8: The educators from all the classes in the school discussed how they were rethinking letters. They had built a culture of collaboration based on many courageous conversations. They were comfortable with and open to reflection and to rethinking their practice based on evidence of the effects of various changes, which they had also studied together.

The educators reflected on all of the thinking that was evident in the shared documentation from their collaborative inquiry questions: "What do children know/notice about letters?" "How do they use that knowledge in their reading, writing, and conversations?" The following are excerpts from their professional conversations as they shared their pedagogical documentation:

"I used to think I needed a program to teach letters."

"Children already know a lot about letters."

"When we put out the letters and asked what children noticed about the letters, we got pages of documentation."

"Yes, we did, too, but I think what made me feel confident to let go of all the activities I used to do was that through the documentation and observation we were able to see with more certainty how to differentiate the learning. We also gained a better understanding of children we were puzzled by and a better idea of where we needed to support those children. For example, we showed one child our cell phone and she recognized the letters in that context. Then we were able to circle back and help the child identify the letters in another context [in print]."

"The children in our class sorted the letters. They began to see the different features of the letters."

"The children in our class did that, too."

"They started making comparisons and connections to their names, and to other words. We found out a lot more about what the children already knew to guide our practice [assessment for learning], especially when we were supporting them in their writing."

OE12

As children progress through the Kindergarten program, they:
demonstrate an understanding and critical awareness of media texts

Conceptual Understandings

- Media texts are constructed to persuade and influence the reader or viewer.
- Media texts are everywhere.
- Media texts can influence our thoughts, ideas, feelings, beliefs, and wishes.
- We need to think about how media texts can affect us.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>12.1 respond critically to animated works <i>(e.g., cartoons in which animals talk, movies in which animals go to school)</i></p> <p>12.2 communicate their ideas, verbally and non-verbally, about a variety of media materials <i>(e.g., describe their feelings in response to seeing a DVD or a video; dramatize messages from a safety video or poster; paint pictures in response to an advertisement or CD)</i></p>	<p>Saying <i>“I learned that they put toys in cereal boxes because they want kids to buy the cereal.”</i></p> <p>Doing A small group of children use props to dramatize a story they have just heard about children being prejudiced.</p> <p>Representing A small group of children make signs about how to be safe on the school bus.</p>	<p>Responding To help children develop strategies for reflecting on media texts, educators ask questions such as: <i>“Why did people make this cartoon?”</i> <i>“Who likes to watch cartoons or animated works?”</i> <i>“What is it about this cartoon that makes you want to watch it?”</i> In a think-aloud, the educators say, <i>“Media texts are made to try to get the reader or viewer to do something or believe something.”</i></p> <p>Challenging <i>“Sometimes you buy cereal and there are toys in the box. Why do you think the people who made the cereal put the toys in there?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		Extending <i>“Someone made this poster. What thoughts do you have about why they chose to use a wolf on it rather than some other animal? What are you supposed to think about the wolf? What did they want us to see? Why?”</i>

OE14

As children progress through the Kindergarten program, they:
 demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings

Conceptual Understandings

- People have the capacity to feel a sense of wonder about the world.
- The natural and built worlds are connected and have an impact on one another.
- Human-built and natural systems interact with one another.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>14.1 ask questions about and describe some natural occurrences, using their own observations and representations (e.g., drawings, writing)</p>	<p>Saying</p> <p><i>“The snow is melting.”</i></p> <p><i>“The leaves are turning red.”</i></p> <p><i>“Why did all the worms come out of the ground?”</i></p> <p><i>“Why is my banana all brown now?”</i></p> <p>Doing</p> <p>In the dramatic play area, a child is sorting the dress-up clothes. One pile has a simple drawing of a snowman on top. She tells one of the educators that she is putting away the winter clothes because it is summer now.</p> <p>Representing</p> <p>A child paints a picture with two panels, showing what the sky looks like both during the day when he is playing outside and at night before he goes to bed.</p>	<p>Responding</p> <p>In response to a question from a child about why worms come out onto sidewalks and driveways when it rains, an educator invites a small group of interested children to work with an educator to find the answer to the question. The educators invite the children to share their theories about why this happens, and then they think together about how they could find out how well their theories explain what they have noticed.</p> <p><i>(Note: The focus of the learning is not facts about worms but ways children can explore their questions through inquiry.)</i></p> <p>Challenging</p> <p><i>“I wonder what we might see if we looked closely at the snow.”</i></p> <p><i>“What did you observe when you picked up some snow and held it in your hands? What are your thoughts about why that happened?”</i></p> <p><i>“What tool can we use to see the snow better?”</i></p> <p>Extending</p> <p>The educators relate the children’s natural curiosity to their own professional curiosity expressed in the conceptual understanding <i>“People have the capacity to feel a sense of wonder about the world”</i> (see above).</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>The children observe and think about change. The children and the educators discuss and represent their thinking in multiple ways.</p> <p> See "Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day" – the clip "Provoking an Inquiry Stance".</p>

OE15

As children progress through the Kindergarten program, they:

demonstrate an understanding of numbers, using concrete materials to explore and investigate counting, quantity, and number relationships

Conceptual Understandings

- Numbers represent a common organizational structure that we use in our lives and in our world to communicate/represent value.
- Numbers can be taken apart (decomposed) and put together (recomposed).
- The ability to decompose and recompose is a useful strategy in all aspects of mathematical thinking.
- We can use objects, pictures, symbols, and/or words to represent number and quantity.
- There are many ways to count. Each way to count has a proper sequence.
- Quantity can be represented in many ways.
- The same quantity can look different (concept of abstraction).
- We are learning that as we move up or down the counting sequence, the quantity increases or decreases by the number we are counting by (concept of magnitude).

Making Thinking and Learning Visible – Where both children and educators are observers and inquirers

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>15.1 investigate (e.g., using a number line, a hundreds carpet, a board game with numbered squares) the idea that a number's position in the counting sequence determines its magnitude (e.g., the quantity is greater when counting forward and less when counting backward)</p>	<p>Saying <i>"Every time I add a block, my building gets taller." "When I walk forward on the number line, the numbers get bigger. When I walk backward they get smaller."</i></p> <p>Doing Children use manipulatives to move forward and backward along a number line and use their bodies to move around on a hundreds carpet.</p> <p>Representing A child draws a number line based on the model used in the classroom and puts sticky notes on numbers that represent a quantity less than 4, greater than 8, and so on.</p>	<p>Responding <i>"What happens when we move up the number line? How do you know? What about when we move backward on the number line? How do you know?"</i></p> <p>Challenging An educator creates a large number line on the floor of the classroom and invites individual children to stand beside different numbers. The team member calls a new number and challenges children to predict whether they will have to move forward or backward from their current position to get to the new number – for example: <i>"You are standing at nine, and you want to move to six. Which way will you have to move on the number line?"</i> One at a time, the children test their predictions by moving up or down the line to the new number. The educator then asks, for example: <i>"If you were standing at nine and then moved to six, what happened to the numbers?"</i></p> <p>Extending The educators ask the children to retell the math story they had read earlier, about a mother duck teaching her babies how to swim. To extend the</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		children's learning, they say: <i>"In our story, one more duck went into the pond. How many ducks are in the pond now? How do you know? Show me how you figured that out."</i>
15.2 investigate some concepts of quantity and equality through identifying and comparing sets with more, fewer, or the same number of objects (e.g., <i>find out which of two cups contains more or fewer beans [i.e., the concept of one-to-one correspondence]; investigate the ideas of more, less, or the same, using concrete materials such as counters or five and ten frames; recognize that the last number counted represents the number of objects in the set [i.e., the concept of cardinality]</i>)	<p>Saying</p> <p><i>"Let's count the cars. I have six and you have five. That means I have one more. Let's get another one so we can have the same."</i></p> <p><i>"You counted thirty-five buttons. I go even higher. I can count forty buttons."</i></p> <p>Doing</p> <p>In the dramatic play area, a child counts out placemats, one for each child seated at the table, and says <i>"I counted five placemats. That means five children are here for lunch."</i></p> <p>Representing</p> <p>Pointing to the sorting tray, a child notices that she has <i>"the same amount on both sides"</i>.</p> <p>Children notice that the towers in a block structure are uneven, and decide to even them up: <i>"See, we had five here and six here. We had to add this one to make them the same."</i></p>	<p>Responding</p> <p><i>"How many marbles have you got in your hand? Let's count."</i></p> <p>Challenging</p> <p><i>"How many marbles do you think will fit in my hand? Do you think it will be more or fewer than you have in your hand? How could we find out?"</i></p> <p>Extending</p> <p><i>"This stack of large blocks is bigger than that stack of small ones. Which stack has the most blocks? Show me how you figured that out."</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>15.3 make use of one-to-one correspondence in counting objects and matching groups of objects</p> <p>15.4 demonstrate an understanding of the counting concepts of stable order (i.e., the concept that the counting sequence is always the same – 1 is followed by 2, 2 by 3, and so on) and of order irrelevance (i.e., the concept that the number of objects in a set will be the same regardless of which object is used to begin the counting)</p>	<p>Saying</p> <p><i>“I counted five children. I need five pieces of apple – one for each child.”</i></p> <p>Doing</p> <p>In the dramatic play area, a child counts out placemats, one for each child seated at the table.</p> <p>An educator observes a child counting the number of people (made from building materials) for the imaginary house she has built. Each time she counts, the child gives one count to each object. Even though she counts accurately, she recounts starting with a different object. The educator notices and names what the child is doing.</p> <p>Representing</p> <p>A child points to the pieces of apple on a plate while counting. Although the child points to a piece of apple more than once, the numbers are still stated in the proper sequence (i.e., 1, 2, 3, 4 ...). <i>(The example illustrates the concept of stable order.)</i></p> <p>A group of children play with the number line that the class and educators have co-constructed. The educators observe the children moving an object along the number line and counting. They supply a basket of cubes and add the correct number of cubes to match the numeral. <i>(The example establishes a foundation for the concept of magnitude.)</i></p>	<p>Responding</p> <p>An educator models order irrelevance by counting a set of cars several times, each time starting the count at a different point in the set. <i>“What do you notice about how I am counting the cars? I am going to count them again. What do you notice this time?”</i></p> <p>The educator places apple slices on a plate. <i>“I noticed that you helped to line up the placemats so that there was one placemat for each child at the table. Now, how many apple slices will you need so that everyone has a piece? How did you figure that out?”</i></p> <p>Challenging</p> <p><i>“There are three children in our group now. Three more children want to join. I wonder how many more chairs we will need.”</i></p> <p>On the class number line, the educators model starting a count at a different point on the number line. <i>“When do we have to start at one?”</i></p> <p>Extending</p> <p>The children collect and record data that represent their personal opinions about the question <i>“Would you rather ... or ...?”</i> The educators want to observe the children’s thinking about quantity relationships (to support assessment <i>for learning</i>), and they decide that the data about the children’s opinions can provide a context for doing this. The educators ask the children to use linking cubes, lined up in</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>rows according to which opinion they hold, to create a concrete graph. The educators discuss the graph with the children (e.g., “Which opinion has the most children [concept of quantity]? How do you know that [concept of magnitude]? Which opinion has the fewest children [concept of quantity]? How do you know that [concept of magnitude]? Why do you think more people would rather ... than ...?”).</p> <p>The educators document which children counted the cubes to determine quantity, and which children used the length of the stacked cubes (“This one is taller so it has more”), thus demonstrating an understanding of the concept of magnitude.</p> <p>They then place a small mat and a larger mat on the floor. Children from the “most” line are asked to stand on the smaller mat, while children from the “fewest” line are asked to stand on the larger mat. The educators ask “What do you notice?” and the children respond with questions such as: “Why does the side with fewer people look like there are more? Why is the side with more all squished on the mat [concept of abstraction]?” (See connections to SE15.3, above.)</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>The educators intentionally present provocations that will help children develop the concepts of:</p> <ul style="list-style-type: none"> • <i>Abstraction</i>: quantity is a measure of “how many” regardless of what that quantity looks like. For example, they want children to understand that five mice and five elephants are the same quantity even though five elephants may <i>look</i> like more. • <i>Magnitude</i>: movement is magnitude. As we move up the counting sequence, the quantity increases by one (or by whatever number is being counted by), and as we move down or backward in the sequence, the quantity decreases by one (or by whatever number is being counted by) (<i>e.g., in skip counting by tens, the amount goes up by ten each time</i>).
<p>15.5 subitize quantities to 5 without having to count, using a variety of materials (<i>e.g., dominoes, dot plates, dice, number of fingers</i>) and strategies (<i>e.g., composing or decomposing numbers</i>)</p> <p>15.6 use information to estimate the number in a small set (<i>e.g., apply knowledge of quantity; use a common reference such as a five frame; subitize</i>)</p>	<p>Saying</p> <p><i>“I know there are five buttons here because they look like the five on the dice in my game.”</i></p> <p><i>“It’s five. I saw four red and one blue.”</i></p> <p><i>“I think it will take three scoops to fill the pail.”</i></p> <p>Doing</p> <p>A child works with a five frame, filling the frame with different objects. He tells another child that he knows he has four buttons because one of the spaces in the frame is empty.</p>	<p>Responding</p> <p><i>“How did you know there were five buttons?”</i></p> <p><i>“How many sticks do you think there are? How do you know that?”</i></p> <p>Challenging</p> <p><i>“Why do you think there are more than five buttons in this set? How can you show that using a five frame?”</i></p> <p>Over time, the educators show the children different arrangements of the number “5” using cubes with one variable (<i>e.g., all pink but on two different plates</i>), two different colours in many</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>Some children use sticky notes to record their estimate of how many small scoops it would take to fill a container at the sand table. They use tallies, saying that doing so makes it easier to count: “See, here it is five. After you get to four you make a line like this that shows it is five.”</p> <p>They ask the educators for a bigger scoop to compare the number of scoops. The educators ask the children about their thinking. Two of the children think that they will need fewer scoops, but two others are not convinced, so they test their theories. One of the children makes a separate tally chart to keep track of the number of scoops. The educators take photographs and post them on the blog to share with the families that what the children have been doing is much more than counting. It is evidence of children’s thinking about quantity and the importance of knowing that each count represents a quantity that increases when they add more and decreases when they go down the number line.</p>	<p>compositions, and then two different objects (<i>e.g., small cubes and big cubes</i> [concept of abstraction]). They think aloud: “<i>We can make five in many ways. Quantity can be represented in many ways</i>”.</p> <p>Extending</p> <p>After analysing their pedagogical documentation (to support assessment <i>for</i> learning), the educators add a die into the children’s play with glass beads at a light table. Until now, the children have been creating various patterns with the beads. The educators add the die into the play to help children use the same materials to think about number sense and quantity relationships. That is, with the addition of the die, the children’s play changes from making patterns with the beads to the creation of a game that includes a number concept. (The game involves rolling the die, counting out the number of beads indicated by the die from the pile, and then sliding them through the remaining lines of beads on the table. The number of beads that are knocked out of the line is the player’s score for that round.)</p> <p> Video title: “Numeracy Through the Day” – see the clips “Children learning from and with each other” and “Reflections on making numeracy visible and intentional based on observations”.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>15.7 explore and communicate the function/ purpose of numbers in a variety of contexts (e.g., use magnetic and sandpaper numerals to represent the number of objects in a set [to indicate quantity]; line up toys and manipulatives, and identify the first, second, and so on [to indicate ordinality]; use footsteps to discover the distance between the door and the sink [to measure]; identify a favourite sports player: “My favourite player is number twenty-four” [to label or name])</p> <p>15.8 explore different Canadian coins, using coin manipulatives (e.g., role-play the purchasing of items at the store in the dramatic play area; determine which coin will purchase more – a loonie or a quarter)</p>	<p>Saying</p> <p>“There are five placemats in the house area. I put a ‘five’ card on top so we don’t forget how many we have.”</p> <p>“I am fourth in line.”</p> <p>“It is thirty-eight steps from our classroom door to the door of the washroom.”</p> <p>(In the class bakery): “You make a sign that says “Three for \$1.00. I’ll put three on each plate.”</p> <p>“My lucky number is five.”</p> <p>Doing</p> <p>A group of children create an ordinal numbers game. Using sticky notes, they place different numbers, from 1 to 10, on the back of each child in the group and then form a line. One child then organizes the children, placing them in order based on the numbers on their backs.</p> <p>Representing</p> <p>In the dramatic play area, a group of children set up a grocery store, pricing the items by writing numerals on them. Other children shop for items and then use coin manipulatives to purchase them.</p> <p>A group of children put numbers on the parking garage. Another group of children use numbers to describe the floor they live on in their building</p>	<p>Responding</p> <p>“Who was the third person to come to school today? How do you know?”</p> <p> Video title: “Numeracy Through the Day” – see the clips “Engaging in Children’s Play to Make Mathematics Learning Visible” and “Mathematics in Inquiry – Responding to Children’s Ideas”.</p> <p>Challenging</p> <p>An educator joins the play in the dramatic play area. “This detergent costs four dollars. I’m looking for something less expensive.”</p> <p>The educators and children explore cardinal and ordinal numbers and the interesting use of numbers in our world. For example, the educators use a “rekenrek” with the children to communicate their thinking in multiple ways:</p> <p>“Which one is the fourth one in the group? How do you know?”</p> <p>“Show me a four. How do you know?”</p> <p>(The educators think aloud): “Isn’t it interesting to think of all the different purposes for numbers? What else do we use numbers for?”</p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clip: “Small-Group Learning About Numbers”.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>and add them to the large box that the educators brought in for the children to use to create an elevator.</p> <p> See "Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day" – the clip: "Small-Group Learning About Numbers".</p>	<p>Extending</p> <p>The educators create number cards to fit into a pocket chart that contains cards with the children's names on them. They invite the children to determine their place in the chart (<i>e.g., by counting, by comparing their spot with a neighbour's</i>) and then to select the number card that corresponds to the pocket that contains their name and put the card in the correct pocket. The children are then asked to discuss who is third, who is seventh, and so on.</p> <p>The educators intentionally present provocations that will help children:</p> <ul style="list-style-type: none"> • develop understanding of the relationships among the verbal concept of a number (<i>e.g., "Show me five"</i>), the symbolic representation of the number (<i>e.g., 5, 9</i>), and the number contexts they represent (<i>e.g., 5 fingers, 9 counters</i>); • transition from representing numbers with concrete materials (<i>e.g., 5 fingers, 9 counters</i>) to representing them pictorially (<i>e.g., IIIII, ●●●●●</i>).

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>15.9 compose and decompose quantities to 10 (e.g., make multiple representations of numbers using two or more colours of linking cubes, blocks, dot strips, and other manipulatives; play “shake and spill” games)</p> <p>15.10 investigate addition and subtraction in everyday experiences and routines through the use of modelling strategies and manipulatives (e.g., join two sets of objects, one containing a greater number than the other, and count all the objects; separate out the smaller number of objects and determine how many remain) and counting strategies (e.g., use a counting sequence to determine how many objects there are altogether; count backward from the largest number to determine how many objects remain)</p> <p>See also OE20: SE20.1 and SE20.2</p>	<p>Saying</p> <p><i>“I only have three wheels for my car. I need one more to make four.”</i></p> <p><i>“There are five people at the snow table but we only have three scoops. We need two more scoops.”</i></p> <p><i>“We used to have eight placemats in our class café. But three got ripped. Now we only have five.”</i></p> <p>Doing</p> <p>Some children represent the quantity of 8 by counting 1 through 8 using their fingers. Other children put up one hand, count from 1 to 5 using each finger, pause, and then continue to count to 8 using three more fingers. Still others put up all five fingers of one hand at once and say “Five” then count on, using three more fingers and saying “Six, seven, eight. There are eight.”</p> <p>Representing</p> <p>Children represent the quantity of 7 using 4 cubes on one plate and 3 on another or 7 tally marks, or by putting up all five fingers of one hand and saying “Five”, and then counting two more fingers on the other hand.</p>	<p>Responding</p> <p>The educators model different strategies for composing and decomposing numbers using manipulatives, five frames, ten frames, and story problems, asking questions such as, “If the five frame is full, and you remove three buttons, how many buttons are left?”</p> <p>Challenging</p> <p><i>“How else could we show that?”</i></p> <p><i>“How did you figure that out?”</i></p> <p><i>“How many more do you think we need?”</i></p> <p><i>“How many do we have now?”</i></p> <p>Extending</p> <p>One of the educators puts out 10 counters so that children can use them to re-enact a number song they have been learning: “How many ducks are in the pond now? How do you know?”</p> <p><i>“How many people had an apple for lunch? How do you know?”</i></p>

OE16

As children progress through the Kindergarten program, they:

measure, using non-standard units of the same size, and compare objects, materials, and spaces in terms of their length, mass, capacity, area, and temperature, and explore ways of measuring the passage of time, through inquiry and play-based learning

 See the Professional Learning Conversation following the chart.

Conceptual Understandings

- We are thinking and learning about how measurement helps us to describe, compare, and communicate.
- Objects and shapes have measurable attributes that can be compared and communicated in different ways.
- We use different tools to measure different things.
- The attribute we are measuring determines the tool we will use and therefore the unit of measurement.
- The unit used to measure makes a difference.
- Any space in between units counts as a measure.
- We use comparative and descriptive language when communicating about measurement attributes.
- The ability to decompose and recompose is a useful strategy in all aspects of mathematical thinking.
- The strategy of decomposing and recomposing shapes in geometry helps us think about measurement.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>16.1 select an attribute to measure (e.g., capacity), determine an appropriate non-standard unit of measure (e.g., a small margarine container), and measure and compare two or more objects (e.g., determine which of two other containers holds the most water)</p>	<p>Saying “I lined the blocks up from shortest to tallest.” “This cereal box has more capacity than that shoebox. I know because it holds more cubes.”</p>	<p>Responding To help children recognize that objects have measurable properties, the educators ask questions such as: “What else is as tall as this block?”</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>16.2 investigate strategies and materials used when measuring with non-standard units of measure (e.g., why feet used to measure length must be placed end to end with no gaps and not overlapping, and must all be the same size; why scoops used to measure water must be the same size and be filled to the top)</p>	<p><i>“We used five papers to cover the small table. It took us fifteen papers to cover the big table.”</i></p> <p><i>“Ahmed used his shoes to measure how far it is from the front of the room to the door. We watched to make sure his heel touched his toe every time.”</i></p> <p>Doing</p> <p>A group of children use footsteps to measure the classroom. Some measure the distance from the front to the back of the classroom, while others measure the distance from one side of the classroom to the other. The children then get together to compare their results.</p> <p>Two children are playing in the blocks area with the floor blocks. One of the girls lies down on the floor and says, <i>“See if you can measure me.”</i> They try lining up different blocks. At first they use different sizes and have spaces between them. Then one child says, <i>“Wait, you have to put them together like this”</i> (moving them close together). Another child lies down and says, <i>“My turn this time. Try and measure all around me.”</i></p> <p>The educators make a video of the interaction to study it with each other and with the children. They want to notice, name, and talk with the children about their thinking about the concept of using a uniform non-standard unit to measure.</p>	<p><i>“Does this water feel warmer or colder than your hand?”</i></p> <p><i>“How much does this book weigh? Do you think it weighs more than two wooden blocks?”</i></p> <p><i>“Why was it important for Ahmed’s heel and toe to touch when he was measuring?”</i></p> <p><i>“How would your results have been different if you had filled the cup all the way to the top?”</i></p> <p>Challenging</p> <p><i>“Which do you think is bigger, the height or the width of your building? How can you find out?”</i></p> <p>(Thinking aloud, the educators say): <i>“‘Big’ can mean different things – for example, it can mean tall, or wide.”</i></p> <p>After watching the video of the children measuring each other, the educators invite the children to watch with them. They ask the children to think about the material they used to measure (blocks), and about other materials they could have used. They also ask the children what they would need to think about the next time they measure something.</p> <p>Extending</p> <p><i>“The scales say that the large block is heavier than two small blocks. I wonder what you could do to make the scales balance.”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A principal is working in the classroom and having a conversation with a child at the snack table. She says to the child, <i>“Where would I find you if you were not at the snack table?”</i> The child says, <i>“The blocks. I built a big boat there before.”</i> The principal replies, <i>“I wonder if you and I have the same idea of big in our minds.”</i> The child goes over to a measuring tool that the class created for comparing the children’s heights over time and measuring growth. The tool is made up of uniform paper squares. The child says, <i>“It was about sixteen floors”</i>, then counts the squares to a total of sixteen. He says to the principal as he places his hand parallel to the sixteenth square, <i>“It was about this big.”</i> The principal says, <i>“Thanks for showing me how high your boat was.”</i> She shows the child what she thought “big” meant, and they compare their thinking and talk about the differences.</p> <p>A child uses a spoon to fill a container with sand and records the results. She then uses a cup to fill the same container and records the results. She shares her learning with an educator: <i>“It took more spoons than cups to fill the container. It took longer with the spoon than the cup.”</i></p>	<p>The educators place two boxes of different sizes on the table with some linking cubes. They ask a small group of children to tell them which box is bigger, and then ask them how they could use the materials on the table to prove their predictions. Some of the children put the cubes in the boxes randomly. Others methodically connect the cubes till the boxes are filled. The educators ask the children, <i>“Which of the ways of filling the boxes with cubes is more accurate? Why do you think that?”</i></p> <p> Video title: “Numeracy Through the Day” – see the clip “Co-constructing Learning”.</p>

Professional Learning Conversation

Re. OE16: A group of educators talked about the calendar routine. Four of the educators from two of the classes had removed their daily calendar routine. Two of the educators were sceptical about doing so. Their four colleagues shared that their observations and research showed that the children were not learning about time but were “rote learning” the *routine*.

They said, “*We still keep a real calendar in the dramatic play area and use five frames to count down days – such as, ‘Four days until we have library time’. We talk about the big idea – that we measure time – but now we use pictures for the flow of the day.*”



For more perspectives, see the clip: “Why Remove the Calendar Routine? One Educator Team’s thinking and connections to the FDELK document”.

OE17

As children progress through the Kindergarten program, they:

describe, sort, classify, build, and compare two-dimensional shapes and three-dimensional figures, and describe the location and movement of objects through investigation



See the Professional Learning Conversation following the chart.

Conceptual Understandings

- Our world is composed of shapes and figures that are put together in particular ways for particular purposes.
- Shapes and figures have different properties and attributes.
- We can understand and describe our world by looking at how shapes and figures work together.
- When an object changes its position in space, or when we change our perspective on an object, it may look different but it is still the same object.
- We can use positional language to describe an object’s location.
- Many of the properties in two-dimensional shapes can also be found in three-dimensional figures.
- The strategy of decomposing and recomposing is useful in all aspects of mathematical thinking.
- The strategy of decomposing and recomposing shapes in geometry helps us think about measurement.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>17.1 explore, sort, and compare the attributes (e.g., <i>reflective symmetry</i>) and the properties (e.g., <i>number of faces</i>) of traditional and non-traditional two-dimensional shapes and three-dimensional figures (e.g., when sorting and comparing a variety of triangles: <i>notice similarities in number of sides, differences in side lengths, sizes of angles, sizes of the triangles themselves; see smaller triangles in a larger triangle</i>)</p>	<p>Saying</p> <p><i>“We sorted all the triangles. These are all triangles because they all have three sides. Then I put these here because they are all small triangles, and these over here are all big ones. But I made another pile of shapes that look like triangles, but they aren’t because their sides are all curvy.”</i></p> <p><i>“This is a weird, long shape, but it has three sides. It looks like a triangle all stretched out.”</i></p> <p><i>“That shape is like the roof on my house.”</i></p> <p><i>“That looks like all the windows in my building.”</i></p> <p><i>“All of these things are rectangular prisms. I thought this one was, too, but then Erin showed me that the sides aren’t straight up and down. So it can’t be.”</i></p> <p><i>“I need some more long blocks so I can make my tower look the same on both sides.”</i></p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clip “Re-thinking Mathematics Structures”.</p>	<p>Responding</p> <p><i>“What do you notice about the shape of this card? How would you describe it? Can you think of something that’s the same shape?”</i></p> <p><i>“Do you see any other shapes that remind you of this shape?”</i></p> <p><i>“What did you notice when you moved the shapes around?”</i></p> <p>Challenging</p> <p><i>“Use three strips of paper to show me a triangle.”</i></p> <p><i>“Use your strips to show me something that is not a triangle.”</i></p> <p>When the children say, “<i>We built a triangle,</i>” the educators reply, “<i>We were watching you and thought we would come over.</i>” The children repeat, “<i>See, we wrote ‘The triangle house’ and we used a triangle shape for the word.</i>” An educator, wondering about the children’s working theories, says, “<i>I am looking and I see so many squares.</i>” All the children say together, “<i>No, see, they are two triangles and when you put them together they make a square. See, that means there are more triangles.</i>”</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>A group of children sort some found materials using sorting hoops. The children sort according to different attributes.</p> <p>Two children create a game with tangrams. Using a “pretend” line as the divider, one child places a tile on one side. The other child has to put the same tile down on the other side. This continues until they decide their design is complete. They invite other children to play the game, explaining that the rule is that both sides have to look the same.</p> <p>Representing</p> <p>During gym time, the children use their bodies to represent different shapes. The children say to the educators, “<i>We built a triangle.</i>”</p>	<p>In reflecting on their interactions with the children (to support assessment <i>for</i> learning) the educators note that they also saw and heard evidence of the children’s reasoning about quantity relationships, counting strategies, proportional reasoning, connecting, and reflecting.</p> <p>Extending</p> <p><i>“Look at the objects in the sorting circle. What do you notice about all of these things? Can you tell what rule I was using to sort them? What else could we add to this group?”</i></p> <p>The educators decide to observe and document the language children use to describe, compare, and sort materials. They talk with the children about their observations.</p> <p>After observing the children making symmetrical designs with the tangrams, an educator decides to further explore the concept of symmetry with the children. She shows the children a series of shapes (<i>e.g., squares, rectangles, kites, rhombi, different kinds of triangles, trapezoids, parallelograms</i>) and asks them to visualize how the shapes would look if they were folded in half. As the children check their predictions, the educator asks questions such as: <i>“What did you notice about the shapes when they were folded?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p><i>“What do all the shapes in this pile have in common?”</i></p> <p><i>“What do you think would happen if we used a mirror with the shapes that did not fold neatly into themselves?”</i></p>
<p>17.2 communicate an understanding of basic spatial relationships (e.g., use terms such as “above/below”, “in/out”, “forward/backward”; use visualization, perspective, and movements [flips/reflections, slides/translations, and turns/rotations]) in their conversations and play, in their predictions and visualizations, and during transitions and routines</p>	<p>Saying</p> <p><i>“I am sitting beside my friend.”</i></p> <p><i>“This book looks different when I stand it up and look at it from above rather than in front of it.”</i> (The example illustrates the concept of perspective.)</p> <p>(When working on a picture puzzle):</p> <p><i>“First we need to flip all of the pieces over so we can see the pictures. Then we just keep turning the puzzle pieces till we find the ways they will fit.”</i></p> <p><i>“When I close my eyes I can see that the beebot needs to go three steps forward [slide], and then turn right [turn] and go one step forward to get to the flower.”</i></p> <p>Doing</p> <p>Two children work together to build a structure with floor blocks. One child uses spatial terms such as “on top”, “beside”, and “behind” to describe to the other where to place the blocks. The other child follows these directions accurately.</p>	<p>Responding</p> <p>An educator supports the children’s exploration of spatial relationships by saying:</p> <p><i>“Who is in front of you in line?”</i></p> <p><i>“Stand near Rosa.”</i></p> <p><i>“In what ways will the block look different if you slide it forward?”</i></p> <p><i>“How did you remember where Saran’s snack was?”</i></p> <p>Challenging</p> <p>The educators lead the children in a game in the schoolyard. The children have to move in the space according to the directions and then describe what they see. As the children’s positions change, the educators challenge the children to describe how their perspective on the schoolyard changes.</p> <p><i>“Move far away from the door.”</i></p> <p><i>“In what ways do the houses look different now from how they looked before you moved?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Using tangrams and pattern blocks, children create designs using spatial reasoning: <i>"I can make the designs the same on both sides."</i> <i>"These look different, but they are the same."</i></p> <p>Two children work to create a design and use non-verbal communication to look at their design on different levels and from different sides.</p> <p>Representing</p> <p>After drawing a map of the classroom, a group of children add directional arrows and labels. They take turns being the "programmer" who provides directions to the "robot" to move from one place in the classroom to another, using language such as <i>"Take five steps forward; turn to the right; take nine steps forward."</i></p>	<p>Extending</p> <p>The educators create a cube made of linking cubes. The bottom row is red, the middle row is blue, and the top row is yellow. They ask the children: <i>"What do you think this cube will look like if I slide it straight across the table? Get a picture in your head (visualize) of how it might look the same and how it might look different."</i> After sliding the cube, the educators ask the children to check their predictions.</p> <p>They then repeat the sequence, flipping and turning the cube, each time asking the children to visualize how the cube will look the same and different and then giving them time to check and talk about their predictions.</p> <p>One of the educators works with a small group of children who have been exploring flips, slides, and turns with a variety of objects in the classroom. He prints the children's names on individual cards, and then asks them to visualize what they might see when they reflect their names in a mirror, when they rotate them, and when they slide them into different positions on the table. After the children check their predictions, the educator asks questions such as: <i>"Could you still recognize your name? Why?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p><i>(Note: Most children will respond that they can still recognize their name because the letters are the same even though in the mirror they appear backwards and in reverse order.)</i></p> <p>The educator then asks the children to visualize what will happen when they reflect individual letters such as “b”, “d”, or “p” in the mirror, rotate them, and slide them into different positions on the table. He again asks them to check their predictions, using magnetic or sandpaper letters.</p> <p><i>(Note: Some children may say that the letters have “turned into” different letters when they are reflected and rotated.)</i></p> <p>Together they discuss the concept that their names and the letters are like the other objects in the room – they may look different, but they are still the same, no matter how they are moved.</p>
<p>17.3 investigate and explain the relationship between two-dimensional shapes and three-dimensional figures in objects they have made (<i>e.g., explain that the flat surface of a cube is a square</i>)</p>	<p>Saying</p> <p><i>“The side of the house I built looks like a square.”</i></p> <p><i>“I put a triangle inside the square on the geoboard.”</i></p> <p><i>“There is a circle on the bottom of the cone.”</i></p> <p><i>“I built a rocket ship. Look at the cone on top. The front is a big rectangle.”</i></p>	<p>Responding</p> <p><i>“What do you notice about the sides of a cube?”</i></p> <p><i>“What do you notice about the bottom of a cone? The bottom of a pyramid?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p><i>See also OE20: SE20.3 and SE20.4</i></p>	<p>Doing</p> <p>A child works in the visual arts area, using a stamp to paint each side of the cube, and states, <i>"I have six sides."</i></p> <p>Representing</p> <p>The children take a photograph of their structure and post it in the blocks area to help them describe to the rest of the class how they built their structure: <i>"We put a row of big blocks on the bottom. On top of them we put smaller cubes."</i></p>	<p>Challenging</p> <p>While observing a child in the blocks area, an educator says, <i>"I noticed you have used a lot of rectangular blocks. Can you tell me why you chose that shape?"</i></p> <p>Extending</p> <p><i>"What do you notice about the blocks on the top (pointing) compared to the blocks on the bottom?"</i></p> <p><i>"How did you figure out how to make the structure stable when you changed the blocks on the top?"</i></p>

Professional Learning Conversation

Re. OE17: A group of educators discussed their evolving thinking about geometry. They reflected that they had previously thought that geometry with young children was about learning terms and vocabulary. After their experience with observing children and documenting their observations, they determined that children compose and decompose shapes constantly in their play. They decided to investigate a professional focus question:

"How do children think about the attributes and properties of shapes?" They also read about and discussed how knowing the *attributes* of shapes (those characteristics that apply to only *some* of the shapes in a group) and their *properties* (those characteristics that apply to *all* of the shapes in a group) is foundational and connected with children's current and later thinking about measurement. Children's knowledge about how shapes are composed informs their later learning about measurement.

OE18

As children progress through the Kindergarten program, they: recognize, explore, describe, and compare patterns, and extend, translate, and create them, using the core of a pattern and predicting what comes next

 See the Professional Learning Conversation following the chart.

Conceptual Understandings

- Patterns are predictable.
- There are specific ways we can describe patterns.
- Patterns always have an element of repetition.
- The core of a pattern helps us to think about and name what comes next in the pattern.
- The ability to recognize and understand patterns is helpful in all aspects of everyday life.
- I am learning to communicate why something is a pattern and what comes next.
- If we do something to the front of a pattern, it affects what we do in other parts.
- Algebra can be used to think about mathematical relationships, to communicate, and to analyse change.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>18.1 identify and describe informally the repeating nature of patterns in everyday contexts (<i>e.g., patterns in nature such as morning-noon-night, the four seasons, or the arrangement of leaves on the stem of a plant; the pattern on a piece of clothing; the pattern made by floor tiles; the pattern of words in a</i></p>	<p>Saying <i>“I’ve made a pattern with the blocks. I put two blue ones and one green one. Then I put two blue ones and one green one again.”</i> <i>“I know every time I go up the number line I add one.”</i></p>	<p>Responding The educators encourage the children to recognize patterns that are part of daily life: <i>“What patterns do you follow when you get up in the morning and come to school?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p><i>book or poem; the pattern on a calendar or in a schedule; the pattern of the beat or rhythm in songs), using appropriate terminology (e.g., “goes before”, “goes after”, “repeats”) and gestures (e.g., pointing, nodding, using slaps/claps)</i></p> <p>18.2 explore and extend patterns (e.g., fill in missing elements of a repeating pattern) using a variety of materials (e.g., beads, shapes, words in a poem, beat and rhythm in music, objects from the natural world)</p> <p>18.3 identify the smallest unit (the core) of a pattern (e.g., ABBABBABB – the core is ABB) and describe why it is important (e.g., it helps us to know what comes next; it helps us make generalizations)</p> <p>18.4 create and translate patterns (e.g., re-represent “red-blue-blue, red-blue-blue, red-blue-blue” as “circle-square-square, circle-square-square, circle-square-square”)</p>	<p>(The example demonstrates algebraic reasoning – the child has identified a relationship and made a generalization.)</p> <p><i>“The next word will rhyme with ‘wall’ because there is a pattern in the words.”</i></p> <p><i>“The pattern goes ‘big button, small button, bead, big button, small button, bead’, so a big button goes next. Now I made a big square, small square, triangle, big square, small square, triangle pattern. They are the same kinds of patterns.”</i></p> <p>(The example demonstrates the concept of translation.)</p> <p><i>“Spring always comes after winter. Then comes summer, then fall, then winter again.”</i></p> <p>Doing</p> <p>Children examine various patterns to decide what the next item in each pattern would be.</p> <p>Representing</p> <p>A group of children use coloured tiles to represent the patterns in some of the children’s clothing.</p> <p>A child works with three different colours of glass beads, making a variety of patterns. The child puts</p>	<p>The educators create a large number line, listen to the children’s ongoing conversations about it, and document what they see and hear the children doing and saying (to support assessment for learning):</p> <p><i>“What do you notice when you move up and down the number line? What happens when you start counting on four and move up one, and then two? What happens when you start counting on ten and move back one, and then two?”</i></p> <p>The educators talk with the children about the core of the pattern and how they can use the core to predict what comes next, using language with the children about how patterns are predictable and we can use the core pattern to help us think about what comes next. <i>(The example demonstrates algebraic reasoning. The children are developing a pattern rule – a generalization that allows them to predict accurately what comes next.)</i></p> <p>Challenging</p> <p>Using rhymes, pictures, and objects that have patterns, the educators model for the children the use of the statement, <i>“I know it is a pattern</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>one of the colours of beads away. At first glance it would appear that the patterns he was making would be less complicated with only two variables. The child creates a growing pattern adding on each time, as well as alternating the colour for each segment of the growing pattern.</p>	<p><i>because ...</i>”. The educators then challenge the children to use the statement to describe patterns they find in the classroom.</p> <p>The educators work with small groups of children, thinking together with them about translating their patterns. <i>“Is there another way you could show your pattern?”</i></p> <p>Extending</p> <p>An educator takes a small group of children for a walk both inside and outside the school to search for patterns. When a child notices a pattern, the children pause to discuss why it’s a pattern. They take photos of the patterns to share with the other children. Later, the educators put some of the pictures of the patterns on a table with a variety of concrete materials and document what they see and hear the children doing and saying (to support assessment <i>for learning</i>).</p>

Professional Learning Conversation

Re. OE18: After consulting some professional sources, an educator gives a presentation on the importance of offering children opportunities to explore patterns. Exploration that enables children to develop the ability to notice patterns and generalize from them provides a foundation for algebraic reasoning. (Algebra is the language that allows us to express generalizations in a mathematical way.) The educator understands that children need to extend their ability beyond simply identifying a pattern. They need practice in predicting what will happen, talking about relationships, and seeing connections. The educator decides to use a strategy of covering up the middle of the pattern to require children to engage in more deductive reasoning.

She also plans ways to model for children the use of the statement, “*I know it is a pattern because ...*”. During professional learning conversations with colleagues, the educators begin to understand how they can further prompt algebraic thinking in children’s explorations, translations, and creations of patterns. They see the connections to other aspects of mathematics, such as number and quantity relationships.



See “Paying Attention to Algebraic Reasoning K–12: Support Document for Paying Attention to Mathematics Education”.

OE19

As children progress through the Kindergarten program, they:
collect, organize, display, and interpret data to solve problems and to communicate information,
and explore the concept of probability in everyday contexts



See the Professional Learning Conversation following the chart.

Conceptual Understandings

- We collect data to learn about and understand the world.
- We pose questions to help us collect data.
- We can collect and organize data in different ways for different purposes. We can represent data in different ways (e.g., using graphs, charts, tables, and other tools). The way we represent data (our choice of tools) is based on the features of the data we want to share to answer our question(s).
- Graphs, charts, tables, and other tools help us see the patterns in the data collected.
- We can make inferences and predictions and draw conclusions based on the patterns we see in the data we have collected and graphed.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>19.1 ask questions that can be answered through data collection (e.g., “<i>What is your favourite ...?</i>”; “<i>How many pets do our classmates have?</i>”; “<i>Which month had the most snowy days – January or February?</i>”), collect data, and make representations of their observations, using graphs (e.g., <i>concrete graphs such as people graphs or graphs using representational objects; picture graphs</i>)</p> <p>19.2 interpret data presented in graphs (e.g., “<i>There are more children in the pizza line than in the hot dog line – that means more children like pizza</i>”; “<i>The blue bar is twice as long as the yellow bar</i>”; “<i>There were twice as many snowy days in January as snowy days in February</i>”) and draw conclusions (e.g., “<i>There are more blue cubes than yellow cubes</i>”; “<i>January was more snowy than February</i>”)</p>	<p>Saying</p> <p>“<i>Which is your favourite ...?</i>”</p> <p>“<i>How many different ways are there to do up our shoes?</i>”</p> <p>“<i>More people like to eat rice than broccoli. I know because there are more names in this row. I counted them.</i>”</p> <p>(<i>Note: It is important, when children are comparing quantities, for the columns and/or bars/rows to be lined up.</i>)</p> <p>Doing</p> <p>A group of children are planning to make soup for the class restaurant. One child starts to write the recipe on chart paper. Another child remembers that, in the survey, more children liked rice than liked broccoli, so the group decide to put four scoops of rice in the soup and only one scoop of broccoli.</p> <p>Two children notice that some creature has dug up the flowers in their garden at home. They wonder if that has ever happened to others. The educators invite them to take a survey to find out.</p>	<p>Responding</p> <p>“<i>How are you going to keep track of the answers to your question?</i>”</p> <p>“<i>How can we decide which way is best to show the data we have collected?</i>”</p> <p>Challenging</p> <p>The educators challenge the children to think about the results of their survey, asking questions such as:</p> <p>“<i>What did you find out?</i>”</p> <p>“<i>How did you find this out?</i>”</p> <p>“<i>How many people did you ask?</i>”</p> <p>“<i>What makes you think that?</i>”</p> <p>“<i>How can we use the data that we gathered?</i>”</p> <p>Extending</p> <p>The educator team plan an inquiry after a child poses the question “<i>How many pockets are on our clothing today?</i>” A team member asks, “<i>What makes something a pocket?</i>” and then asks, “<i>How will we show how many pockets we have?</i>” The team document the children’s learning on video.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>After conducting a survey on pet ownership among their classmates, a group of children create a graph with separate columns showing the number of children who have cats, dogs, birds, hamsters, and fish. They also have a column for “no pets”.</p> <p>(<i>Note: It is important, when children are comparing quantities, for the columns and/or bars/rows to be lined up.</i>)</p>	<p>The team then analyse the video with the children to examine the learning and further the children’s thinking.</p>
<p>19.3 respond to and pose questions about data collection and graphs</p>	<p>Saying</p> <p><i>“I wonder what would have happened if we had added hot dogs to our survey?”</i></p> <p><i>“There are five people standing in the laces row and fifteen people standing in the Velcro row. Where are the leftover children standing?”</i></p> <p><i>“More people like to eat rice than broccoli. I know because there are more names in this row. I counted them.”</i></p> <p><i>“There are only two people left on the graph that are four [years old].”</i></p> <p><i>“More people picked indoor gym than outdoor gym. See, the line goes higher.”</i> (The child points to the bar on the bar graph.)</p> <p>(<i>Note: It is important, when children are comparing quantities, for the columns and/or bars/rows to be lined up.</i>)</p>	<p>Responding</p> <p>The educators have the children line up in two rows to create a concrete graph to respond to a child’s question: <i>“Who likes to play in the blocks and who likes to play in the sand?”</i></p> <p>The educators ask, <i>“What do you notice? Did it surprise you who likes to play in the blocks?”</i></p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clips “Provoking an Inquiry Stance in Mathematics” and “The Inquiry Process in Action”.</p> <p>Challenging</p> <p>The educators discuss with the children ways in which they can represent their “people graph” using other materials in the classroom.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p><i>See also OE20: SE20.5 and SE20.6</i></p>	<p>Doing</p> <p>Children add their thinking to an ongoing class graph in a designated area of the classroom. Both educators and children contribute questions related to things they are curious about in the graph.</p> <p>Representing</p> <p>A group of children use clipboards to take surveys with their friends. The educators take photos of the surveys and project them, to give the children opportunities to communicate their thinking and observations about the data collected.</p>	<p>Extending</p> <p>The educators extend the children's learning about graphs by exploring ideas such as the following:</p> <ul style="list-style-type: none"> • where the first object in each category on the graph is (they should all start in the same place, to make the measure fair); • how the other objects on the graph are placed (level with each other, to make the measure fair); • why some graphs have words on them (to help readers better understand the information in the graph).


Professional Learning Conversation

Re. OE19: An educator suggests an idea to help familiarize children with data and graphs while involving them in planning a field trip. After brainstorming field-trip destinations with children, the educator creates a graph with pictures showing possible destinations and invites children to put a mark on the graph (*e.g., their name, their picture, a sticker*) indicating their choice.

To extend their thinking, the children examine the graph to determine the most popular and least popular destinations. The educators discuss with the children the importance of thinking about the visual message of the graph – in other words, how to read a graph (visual literacy). They ask: *“How does presenting the information in a graph help us to think about our trip?”*

OE20

As children progress through the Kindergarten program, they:

apply the mathematical processes to support the development of mathematical thinking, to demonstrate understanding, and to communicate thinking and learning in mathematics, while engaged in play-based learning and in other contexts

Conceptual Understandings

- We use the mathematical processes embedded in many different contexts to make sense of our experiences and communicate our thinking.
- **Problem solving:** Problems can be solved collaboratively. There are many ways to solve a problem. Solving problems helps us learn how to think like mathematicians.
- **Reasoning and proving:** Observing mathematical strategies and talking about them help make us aware of our mathematical thinking. When we explain our thinking and reasoning, we all learn more.
- **Reflecting:** Reflective statements and questions deepen our understanding by helping us think critically about our answers/solutions.
- **Selecting tools and strategies:** The processes of thinking about and choosing tools and strategies help us to understand ideas and solve problems.
- **Connecting:** Connections can be made between the mathematics in play-based learning and questions related to our interests and daily experiences.

- **Representing:** There are many ways to represent our ideas and thinking. We can show our thinking by using concrete materials, pictures, numbers, and gestures, or by using physical actions, such as hopping, tapping, or clapping, or in various other ways.
- **Communicating:** Mathematical thinking can be communicated in many ways, including oral, visual, and concrete means.

Note: The specific expectations in the following chart are used as examples to illustrate that the mathematical processes are relevant to and embedded in **all** expectations that relate to demonstrating mathematics behaviours, regardless of their particular focus (e.g., on number sense and numeration or measurement or geometry and spatial sense).

In the following chart, the mathematical processes that are most relevant in the examples provided are identified in square brackets. (Other mathematical processes may also be involved, but are not stated.)

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>20.1 demonstrate an understanding of number relationships for numbers from 0 to 10, through investigation (<i>e.g., show small quantities using fingers or manipulatives</i>)</p> <p>20.2 use, read, and represent whole numbers to 10 in a variety of meaningful contexts (<i>e.g., use a hundreds chart to read whole numbers; use magnetic and sandpaper numerals to represent the number of objects in a set; put the house number on a house built in the blocks area; find and recognize numbers in the environment; write numerals on imaginary bills at the restaurant in the dramatic play area</i>)</p> <p>See also OE15</p>	<p>Saying</p> <p>(Pointing to a book): <i>“That is a six. There are six frogs on the log.”</i> [reasoning and proving; communicating]</p> <p><i>“I know there are seven counters because all of the five frame is full and there are two counters left.”</i> [reasoning and proving; reflecting; communicating]</p> <p><i>“I can make seven like this with five here and two here (using hands), and I can make seven like this, with four here and three here.”</i> [representing; communicating]</p> <p><i>“I have five big cubes and five small cubes. They are the same amount. I know because I counted them. But see, it looks like there are more big ones.”</i> [reasoning and proving; reflecting; communicating]</p> <p>(This example demonstrates understanding of the concept of abstraction. For a similar example, see OE15 and its related specific expectations.)</p> <p>Doing</p> <p>After hearing a story about children playing hopscotch, a group of children draw a hopscotch court on the tarmac in the playground. They use</p>	<p>Responding</p> <p><i>“Which plate has three dots? Which plate has five dots? Which plate has two dots? How can we make the number of dots on the plates the same?”</i></p> <p><i>“Two more than five is seven. What is two less than five?”</i></p> <p>Challenging</p> <p>The educators and children are inquiring about numbers in their environment. The children discover numbers in their environment (in the classroom and around the school, both inside and outside). During this inquiry, the children are exposed to multiple opportunities to explore with numbers and learn how they are used.</p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clip “Small-Group Learning About Numbers”.</p> <p>Extending</p> <p>During their inquiry about numbers in the environment, the children have multiple opportunities to explore with numbers. Based on their observations, the educators decide to provide</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>the picture in the storybook to determine how many spaces their hopscotch court needs. After drawing ten spaces on the tarmac with chalk, one child numbers the spaces from 1 to 10. As the children take turns playing, the educators hear them saying things like, <i>"I'm on five and you're on three. You're two behind me."</i> [connecting; selecting tools and strategies]</p> <p>Representing</p> <p>During a class community walk, a child points to her own house and states that she lives in house number two hundred and fifteen. Another child disagrees with her and says the number is two-one-five. The children collaboratively solve the problem about the house number. The child who lives in the house states that her parents have taught her that she lives in house number two hundred and fifteen, so she must be right. Another child adds that she, too, has heard of numbers in the hundreds. She says that she can even count to one hundred, so two hundred and fifteen must be right. The children continue to engage in discussion with each other and agree to keep walking to explore the other house numbers on the street. [problem solving; representing; reflecting]</p>	<p>opportunities to extend the children's thinking/ understanding about numbers by going on a community walk. During the community walk, the educators introduce new vocabulary – words such as "investigate" and "compare" – and challenge and respond to the children's thinking about what they know about numbers. The children's thinking leads to the question <i>"Why do we have numbers on houses and buildings?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>20.3 compose pictures, designs, shapes, and patterns, using two-dimensional shapes; predict and explore reflective symmetry in two-dimensional shapes (<i>e.g., visualize and predict what will happen when a square, a circle, or a rectangle is folded in half</i>); and decompose two-dimensional shapes into smaller shapes and rearrange the pieces into other shapes, using various tools and materials (<i>e.g., stickers, geoboards, pattern blocks, geometric puzzles, tangrams, a computer program</i>)</p> <p>20.4 build three-dimensional structures using a variety of materials and identify the three-dimensional figures their structure contains</p> <p><i>See also OE17</i></p>	<p>Saying</p> <p><i>“My house has four sides. See, I counted them. When you turn it around it still has the same sides, but two sides look like rectangles. The other two look like squares.”</i> [reasoning and proving; communicating]</p> <p><i>“I put these two triangles together and they make a square, but these two triangles don’t. I think it is because they are a different size.”</i> [selecting tools and strategies; reflecting; communicating]</p> <p>Doing</p> <p>A small group of children use pattern blocks to compose new shapes (<i>e.g., by using two squares to make a rectangle</i>). [selecting tools and strategies]</p> <p>Using large letter cards and mirrors, children explore the reflective symmetry of letters of the alphabet. [selecting tools and strategies; connecting]</p> <p>After building a structure with wooden blocks, two of the children do a tally to see how many of each shape they have used. They post their findings beside their structure. [reasoning and proving, representing, reflecting]</p>	<p>Responding</p> <p>The educators place some magnetic shapes on a cookie sheet for the children to use to compose pictures and designs. They ask:</p> <p><i>“What happens when you turn the shapes around? When you flip them or slide them? How many sides do you see?”</i></p> <p>Challenging</p> <p><i>“You used many different shapes to design your picture. How did you decide what shapes to use?”</i></p> <p>Extending</p> <p>The educators ask themselves: <i>“How do children compose and decompose shapes when they are building with blocks?”</i> They observe and document as the children work in the blocks area (to support assessment <i>for</i> learning). Later, they share the documentation with the children. The children clarify, add to, and communicate their thinking. The educators project the image of the structure on the whiteboard and flip it to prompt the children to engage in spatial reasoning.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>Using found materials of various geometric shapes, some children work together to create a vehicle. [problem solving; representing]</p> <p>After reading aloud a story that is illustrated with tangram designs, an educator asks the children to make one of the designs in the story. The children place the tangram pieces on a design template and then re-create the design by placing the pieces in the same pattern beside the template. [connecting; representing]</p>	
<p>20.5 investigate and describe how objects can be collected, grouped, and organized according to similarities and differences (<i>e.g., attributes like size, colour</i>)</p> <p>20.6 use mathematical language (<i>e.g., “always/sometimes/never”; “likely/unlikely”</i>) in informal discussions to describe probability in familiar, everyday situations (<i>e.g., “Sometimes Kindergarten children like pizza more than hot dogs”; “It is likely that January will be a snowy month”</i>)</p> <p>See also OE19</p>	<p>Saying</p> <p><i>“I sorted my animals by size.”</i> [communicating]</p> <p><i>“There are five people standing in the laces row and fifteen people standing in the Velcro row.”</i> [communicating]</p> <p><i>“More people like to eat rice than broccoli. I know because there are more names in this row. I counted them.”</i> [reasoning and proving; connecting; reflecting; communicating]</p> <p><i>“There are only two people left on the graph that are four [years old].”</i> [connecting; communicating]</p> <p><i>“My brother always meets me at the bus stop after school.”</i> [connecting; communicating]</p>	<p>Responding</p> <p>An educator notices the children sorting the book covers. She joins the group and asks them to talk about their categories for sorting. The children pose a problem for the class to figure out: <i>“Is there one book that can go into two categories?”</i></p> <p>The educators offer the children some sorting circles (hula hoops) so the children can begin to explore categories visually using Venn diagrams.</p> <p>Challenging</p> <p>The educators challenge the children to think about the results of their survey:</p> <p><i>“How many children and how many adults were part of your survey?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>"Maybe we will have spaghetti for dinner tonight."</i> [connecting; communicating]</p> <p><i>"There is no way that a tiger would come to our classroom."</i> [connecting; reflecting; communicating]</p> <p>Doing</p> <p>A small group of children sort books based on the types of pictures on the front cover and describe the reasoning behind their sorting [reasoning and proving; connecting; communicating]</p> <p>Representing</p> <p>After conducting a survey on pet ownership among their classmates, a group of children create a graph with separate columns showing the number of children who have cats, dogs, birds, hamsters, and fish. They select clipboards and decide how to represent the choices on the graph. They use pictures they find online and then ask their classmates to sign their name beside the pet that they have. Midway through the survey they have to add another column that says "No pets". [representing; problem solving; reflecting]</p>	<p><i>"What did you find out?"</i></p> <p><i>"Were you surprised by what you found out? What did you think would be the most popular pet? What made you think that?"</i></p> <p>Extending</p> <p>The educators ask the children who conducted the survey to think about the following question: <i>"If you were to ask five more people to tell you what kind of pet they own, what do you predict their answer would be? Why do you think that?"</i> The educators document the children's thinking and how they use their prior experience with the data to think about their predictions, as well as the children's reasoning, communication, reflections, and the connections they make.</p>

OE21

As children progress through the Kindergarten program, they:

express their responses to a variety of forms of drama, dance, music, and visual arts from various cultures and communities

Conceptual Understandings

- The arts are a vehicle for understanding different cultures and communities and expressing our own ideas about them.
- Through interacting with various works of dance, drama, music, and visual arts, including multimedia art works, we deepen our awareness and appreciation of diverse perspectives.
- The arts have symbols that are rooted in a particular social, historical, and cultural context and therefore may have meanings that are different from what we know from our own culture and time.
- The arts provide a natural vehicle through which we can explore and express ourselves.

Making Thinking and Learning Visible – Where both children and educators are observers and inquirers

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>21.1 express their responses to drama and dance (e.g., by moving, by making connections to their experiences with drama and dance, by talking about drama and dance)</p> <p>21.2 dramatize rhymes, stories, legends, and folk tales from various cultures and communities (e.g., use actions, pictures, words, or puppets to tell a story in the dramatic play area or in the blocks area)</p>	<p>Saying</p> <p><i>“He was wondering what was going to happen when they wouldn’t let the new kid play.”</i></p> <p><i>“I would let them play with me.”</i></p> <p><i>“That puppet show we saw was just like the story we read.”</i></p> <p>Doing</p> <p>After seeing a production of a familiar story they have previously heard read aloud, several of the children talk about how the costumes and movements remind them of what happened in the book they read.</p>	<p>Responding</p> <p><i>“How was the puppet show the same as the story? How was it different? What else did it remind you of?”</i></p> <p><i>“What else about the troll was scary?”</i></p> <p>Challenging</p> <p>One of the children has a family member who is a dancer. The educators invite the dancer to share his dance style with the class.</p> <p>Extending</p> <p>The educators use the children’s reflections on the choices made by some of the characters in a favourite read-aloud book as the basis for discussing</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A child uses pictures of faces that express a range of different emotions to identify how she feels at different points in a dramatic presentation.</p>	<p>with the class a social issue that has been happening in the classroom and asking them to suggest ways to resolve the issue.</p>
<p>21.3 express their responses to music by moving, by making connections to their own experiences, or by talking about the musical form</p> <p>21.4 respond to music from various cultures and communities (<i>e.g., folk songs, Indigenous chants, songs in different languages, Inuit throat singing</i>)</p>	<p>Saying</p> <p><i>"I heard that song at a wedding. It makes me want to dance."</i></p> <p><i>"I can sing a song in my language."</i></p> <p><i>"That music sounds very soft. It makes me feel calm, just like when we do yoga. We should use that music during yoga."</i></p> <p><i>"I like using the tablet and headphones to listen to music and stories."</i></p> <p><i>"Can we add some music into the background of our story, like in the movies?"</i></p> <p>Doing</p> <p>The educators have introduced background music in the visual arts area. Children move their paintbrushes to the rhythm and flow of different selections of music.</p>	<p>Responding</p> <p><i>"What does this song remind you of or make you think of?"</i></p> <p><i>"How did you feel when you heard the music?"</i></p> <p>The educators talk with the children about some of their thinking:</p> <p><i>"We were thinking about trying to play soft, relaxing music and we want to know how everyone will feel about it."</i></p> <p><i>"We can try playing different music at different times to see how it makes us feel and think."</i></p> <p>Challenging</p> <p><i>"I noticed that you used the paints to show how the background music made you feel. How could you move your body to show the same thing?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>The children spontaneously sing a song from a familiar movie while playing with playdough.</p> <p>Representing</p> <p>A small group of children describe their personal responses to a piece of music. The educators record their responses in an interactive writing experience.</p>	<p>Extending</p> <p>The educators play music from sites they have researched online. Some of the songs have been shared by the families in the community and some are known around the world. Families send in some of their favourite music and tell stories about why it is special. In some cases, families share in their home language, and older siblings in the school support communication.</p>
<p>21.5 express their responses to visual art forms by making connections to their own experiences or by talking about the form</p> <p>21.6 respond to a variety of visual art forms (<i>e.g., paintings, fabrics, sculptures, illustrations</i>) from various cultures and communities</p>	<p>Saying</p> <p><i>“That boy looks scared in the picture. I don’t like being in the dark either.”</i></p> <p><i>“All the wavy lines make the picture look like it is moving.”</i></p> <p><i>“The sculpture of the soldier in the park looks sad. His head is down, and his eyes are closed.”</i></p> <p>Doing</p> <p>After seeing the fabrics brought in by a classmate’s family, a child brings in a kilt made from his family’s tartan.</p> <p>Representing</p> <p>After viewing a painting with wavy lines, a child tells an educator that the lines make her think of water. She creates her own art work using the same element: <i>“This is me swimming. The wavy lines mean that the water is moving.”</i></p>	<p>Responding</p> <p><i>“When someone’s head is down and her eyes are closed, what else might she be feeling (e.g., tired, thoughtful)?”</i></p> <p><i>“What does Tia’s picture make you think of?”</i></p> <p><i>“I wonder why the painter used so many dark lines.”</i></p> <p>Challenging</p> <p>A small group of parents bring in patterned fabrics from their countries of origin and share the stories behind the patterns in the fabrics with the children. Afterwards, an educator discusses the patterns with the children and then invites them to create their own fabric patterns.</p> <p>Extending</p> <p>The educators ask the children and their families to look for examples of art at home and in the</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>A small group of children notice the patterns on the carpet in the blocks area. They find the core of the pattern and explain how that helped them know it was a pattern because they could see (predict) what would come next. They bring their observations to the whole class to discuss:</p> <p><i>“Are the shapes the same even though this one is facing the other way? How do we know?”</i></p> <p><i>“What if I look at the pattern from this side?”</i></p>	<p>places where they work, play, and shop. The children share their feelings about the art that they have viewed:</p> <p><i>“I saw my uncle’s carvings. They looked really heavy.”</i></p> <p><i>“The store where we shop had photographs for sale. They were pictures of buildings in our neighbourhood. I found lots of shapes in the buildings.”</i></p>

OE22

As children progress through the Kindergarten program, they:

communicate their thoughts and feelings, and their theories and ideas, through various art forms



See the Professional Learning Conversation following the chart.

Conceptual Understandings

- There are many ways to communicate thinking, theories, ideas, and feelings.
- We can discover and interpret the world around us through the arts.
- Through the arts, we can become critically literate and creative citizens of the world.
- The arts provide a natural vehicle through which we can explore and express ourselves in a variety of creative ways.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>22.1 communicate their ideas about something (e.g., a book, the meaning of a word, an event or an experience, a mathematical pattern, a motion or movement) through music, drama, dance, and/or the visual arts</p>	<p>Saying <i>“That poem has a pattern in it. I can clap the pattern while you say the words.”</i> <i>“I don’t know what this letter is, but you write it like this (motions in the air to show the letter shape).”</i></p> <p>Doing When trying to show the motion of a kite flying, the child stands up, throws her hands in the air, and says, <i>“Whoooosh.”</i> The educators invite the children to show “five”. Over time, the children show “five” in a variety of ways by:</p> <ul style="list-style-type: none"> • showing various combinations on their fingers; • grouping themselves together; • writing the numeral; • using five of various materials in their structures. <p>Representing A group of children demonstrate spatial reasoning as they create a large floor model from smaller models of various types of spirals seen in the environment.</p>	<p>Responding The educators show the children a series of paintings and sculptures and keep the art works on display for a period of time. They listen to and record the children’s conversations about the art works. The children learn about an artist who uses hearts in his paintings and sculptures and make an immediate connection to their own art works. The educators show examples of work by a Canadian artist who uses dark outlines in all of his paintings and offer the children fine black pens as an invitation to try out the technique.</p> <p>Challenging The children have been creating simple patterns with a variety of materials in the classroom. The educators challenge a small group of children to represent the patterns they have made in music or dance. <i>(Note: This connects to OE18, which deals with patterns.)</i> The educators document and analyse, with the children, a video of children using gestures and the positions (rotating, sliding) of shapes to explore the attributes of shapes. They use the experience to discuss and explore the element of perspective with the children.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>Extending</p> <p>The educators work with a small group of children to further explore the element of colour in visual art. The children create art works that use one particular colour and also incorporate natural materials, then ask other children to tell them how the art works make them feel.</p>

Professional Learning Conversation

Re. OE22: After reading about music education for young children, the educators discuss how music supports the development of reading skills, reasoning skills, math skills, and science concepts, and how it enhances self-esteem. The educators decide to focus first on exploring different rhythms in music, to support the development of reading skills. They decide to use music from the various cultures of children in the classroom in order to help

them to make connections to their prior knowledge and experiences. Families volunteer to share recorded music associated with their culture. Children mark the rhythms in different ways and compare them to poems, chants, and songs that have been heard, read, and/or sung in class. The educators observe, record their observations, and discuss how to use their observations in future planning.

4.6 PROBLEM SOLVING AND INNOVATING

Children develop a sense of appreciation for human creativity and innovation ... [by] Bringing all their senses to exploring the constructed world ... [and by] Learning to appreciate beauty, creativity and innovation in art, architecture, and technologies.

(New Brunswick Department of Education and Early Childhood Development, *For Now. For Life. Be Ready: New Brunswick Curriculum Framework for Early Learning and Child Care*, 2007, pp. 157, 176)

➡ For more information about this frame, see Chapter 2.4, “Thinking about Problem Solving and Innovating”.

➡ For a complete list of the overall expectations in the Kindergarten program with their related specific expectations, see the appendix to this document.

OVERALL EXPECTATIONS

As children progress through the Kindergarten program, they:

1. communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts
4. demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts
6. demonstrate an awareness of their own health and well-being
9. demonstrate literacy behaviours that enable beginning readers to make sense of a variety of texts
10. demonstrate literacy behaviours that enable beginning writers to communicate with others
13. use the processes and skills of an inquiry stance (i.e., questioning, planning, predicting, observing, and communicating)
14. demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings
20. apply the mathematical processes to support the development of mathematical thinking, to demonstrate understanding, and to communicate thinking and learning in mathematics, while engaged in play-based learning and in other contexts
22. communicate their thoughts and feelings, and their theories and ideas, through various art forms
23. use problem-solving strategies, on their own and with others, when experimenting with the skills, materials, processes, and techniques used in drama, dance, music, and visual arts
24. use technological problem-solving skills, on their own and with others, in the process of creating and designing (i.e., questioning, planning, constructing, analysing, redesigning, and communicating)

All children are viewed as competent, curious, capable of complex thinking, and rich in potential and experience.



EXPECTATION CHARTS

OE1

As children progress through the Kindergarten program, they:

communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts

Conceptual Understandings

- Communication has the power to influence and encourage change.
- We learn about the world, others, and ourselves through listening.
- The ways in which people communicate are diverse and are influenced by their background experiences.
- Knowledge is socially constructed – created by people learning, working, and investigating together – and can be shared.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators’ Intentional Interactions</p>
<p>1.2 listen and respond to others, both verbally and non-verbally (<i>e.g., using the arts, using signs, using gestures and body language</i>), for a variety of purposes (<i>e.g., to exchange ideas, express feelings, offer opinions</i>) and in a variety of contexts (<i>e.g., after read-alouds and shared reading or writing experiences; while solving a class math problem; in imaginary or exploratory play; in the learning areas; while engaged in games and outdoor play; while making scientific observations of plants and animals outdoors</i>)</p>	<p>Saying <i>“I figured out another way to make this go together.”</i> <i>“I want to build a tower, but it keeps falling down.”</i> <i>“There are five here and five here, but they are different sizes.”</i> <i>“I know because I counted them.”</i> <i>“This is the letter ‘G’ like in my name, but this one looks different (noticing a different font in a book). I wonder how you make this one?”</i></p>	<p>Responding An educator observes and waits to intervene until the child looks up and pauses. Then the educator names what he thinks he observed the child doing for clarification and as a way to begin to co-construct an understanding of the learning. <i>“If we project it on the screen, I wonder if some other children can help you think through the problem and offer their perspectives.”</i> <i>“How can we keep the house area from getting so messy all the time?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>A child works, over a period of time, to make her structure balance. An educator observes and documents the child's strategies of using trial and error until she finds a new angle at which to place the materials. The educator makes a video to record the child's gestures and facial expressions and views the video with the child at a later time (an example of assessment <i>for</i> learning) to gain further insights into the child's thinking.</p> <p> Video title: "Numeracy Through the Day" – see the clip "Co-constructing learning".</p> <p>Representing</p> <p>In order to explain the rules of a game to others, a child makes a drawing of how the game works. With the help of an educator, he adds arrows and labels to clarify his explanation, and then takes a photograph of the drawing and projects it onto a large screen to show a group of children.</p>	<p><i>"Here are some pictures of other towers. What do you notice about them?"</i></p> <p><i>"How can we find out?"</i></p> <p>Challenging</p> <p><i>"What is it about the towers in the pictures that help them to stay standing? How can you do the same thing with your tower?"</i></p> <p>Extending</p> <p>The educators invite the children to think of a new rule that would make their game fairer for everyone. They document the children's ideas of fair, relate them to their previous discussions, and also make visible the connections that the children are making.</p>
<p>1.4 sustain interactions in different contexts (e.g., with materials, with other children, with adults)</p>	<p>Saying</p> <p><i>"We could put these two pieces together."</i></p> <p><i>"Oh, they don't fit."</i></p> <p><i>"What about this one?"</i></p> <p><i>"That one works."</i></p> <p><i>"If we do it this way, it works better."</i></p>	<p>Responding</p> <p>The educator documents the children's interactions with each other as they problem solve with the materials. He notices and names for them how their collaborative efforts, their perseverance, and their willingness to try new ways of solving the problem helped them to find the best solution.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>Two children have been working with translucent pebbles at the light table. When a die is added to the table, the children make up a game and explain the game to the educator.</p> <p> Video title: "Numeracy Through the Day" – see the clips "Children learning from and with each other" and "Reflections on making numeracy visible and intentional based on observations".</p> <p>Two children are playing with a train set. An educator observes them replacing some parts of the track with different parts, building on different levels, taking turns moving the train on the tracks, and changing the connections for the tracks. All of this is done using non-verbal communication.</p> <p>Representing</p> <p>A child creates a card showing "assembly-line cooking" directions for other children to follow to assemble their snack for the day. An educator and the child discuss how the card supports the cooking</p>	<p>Challenging</p> <p>The children invite the educator to join their game. As they are playing, she wonders how she can challenge the children to think of ways in which they can refine their game. She introduces the idea of using a tally (a math convention used to record information) as a way to keep score. The strategy also reinforces and enhances their development of counting skills and number sense.</p> <p>Extending</p> <p>After viewing their video documentation of a child working over a period of time to build a stable structure, using a variety of materials, the educators show the video to the child and ask her to share her thinking, her theories, and her observations about what she did and what happened as a result.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>process. They notice and name both the literacy behaviours and the mathematics behaviours.</p> <p>For example:</p> <p><i>"I saw you using letters to check how to form the letter."</i></p> <p><i>"You used a mathematics word – 'measure'."</i></p> <p><i>"You counted how many."</i></p>	
<p>1.5 use language (verbal and non-verbal communication) in various contexts to connect new experiences with what they already know (<i>e.g., contribute ideas during shared or interactive writing; contribute to conversations in learning areas; respond to educator prompts</i>)</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>"I made a sandcastle like this at the beach."</i></p> <p><i>"I built a snowman with my sister like the one in the story."</i></p> <p><i>"I noticed that if I hold the tube up higher the water moves faster."</i></p> <p><i>"Yesterday we talked about how eating food gives us energy. I brought a B-I-G snack today so I'll have lots of energy to play!"</i></p> <p><i>"Before, I could only make it this long before it broke. Now I turned it the other way, like this, and look how long it is."</i></p> <p>Doing</p> <p><i>(In response to a prompt from an educator):</i></p> <p>A child changes the height of the tube after several attempts to make the water move faster. The educators observe the child's non-verbal communication and actions as evidence of learning.</p>	<p>Responding</p> <p><i>"What do you notice when we add ...?"</i></p> <p><i>"That is just like ..."</i></p> <p><i>"You made a connection."</i></p> <p><i>"I wonder if there is another way that hasn't been thought of yet."</i></p> <p>Challenging</p> <p>An educator works with a child on an interactive writing piece. From previous observations, the educator knows what letters the child knows and uses prompts such as, <i>"That starts like ..."</i> to help the child connect what he already knows to a new context.</p> <p>Extending</p> <p>After making kites and observing how they fly, a small group of children decide to explore other objects that use air to keep them aloft. The educators facilitate the children's explorations</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A child adds a letter to a familiar word during small-group interactive writing, saying, <i>"I know that one. That starts like my name."</i></p>	<p>by providing materials they can use to create parachutes. After testing out their early designs, one child observes, <i>"I think that the parachute uses air to stay up just like the kite did! I am going to make my parachute bigger, like the kite, because that will help it fall even slower."</i></p> <p> Video title: "Observation and Documentation" – see the clip "Reflections on documenting learning and making learning visible".</p>
<p>1.6 use language (verbal and non-verbal communication) to communicate their thinking, to reflect, and to solve problems</p>	<p>Saying</p> <p><i>"I think we should try it like this."</i></p> <p><i>"After we looked at the picture, we decided to put the big blocks on the bottom, and then it was stable."</i></p> <p><i>"I used the picture, and then I knew the word."</i></p> <p><i>"I think I will get the shovel I used at the sand table because it will be better for digging up worms than this is."</i></p> <p>Doing</p> <p>A child decides to find all the children in the class who have the letter "S" in their name. He uses the name wall and tells another child his plan. This encourages more children to join the investigation.</p>	<p>Responding</p> <p>The educators decide to think about when and why they ask questions or use prompts. They ask themselves, <i>"What is the impact of the timing and amount of educator talk?"</i> This influences them to listen differently. Based on their professional judgement, their observations, and signals from the children, they choose to respond with prompts such as:</p> <p><i>"I wonder how you knew that."</i></p> <p><i>"Were you thinking about ...?"</i></p> <p><i>"How did you use the picture to figure out that word?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>During a class sharing time, a small group of children share their solution for joining their structures in the blocks area.</p>	<p>Challenging</p> <p><i>“How did you figure that out?”</i></p> <p><i>“What do you think would happen if...?”</i></p> <p><i>“What sound would we expect to hear at the beginning if the word is ...?”</i></p> <p>Extending</p> <p><i>“I wonder if there is another way you could solve that challenge using a different piece of equipment.”</i></p>
<p>1.7 use specialized vocabulary for a variety of purposes (<i>e.g., terms for things they are building or equipment they are using</i>)</p>	<p>Saying</p> <p>(In the outdoors):</p> <p><i>“We used the magnifier to observe the bug we found in the dirt.”</i></p> <p><i>“When we tilted the ramp up, we noticed it made the car go faster and farther.”</i></p> <p>Doing</p> <p>A small group of children share with the principal things they have observed about the worms in their worm farm. They discuss how they problem solved ways to keep track of how many worms there were, and how they have been caring for them. They share other observations they have made, using words such as “tally”, “counting strategy”, “moisture”, “casting”, “gizzard”, “recycling”, “living thing”, and “segments”.</p>	<p>Responding</p> <p>The educators reorganize the visual arts area. They remove most of the materials in order to have a more “controlled palette”, and they add a variety of shiny papers and recycled objects to support the children’s growing understanding of the properties of different materials. As the children apply their understanding of the properties of the materials in their designs and creations, they develop relevant vocabulary, saying things like:</p> <p><i>“I used the shiny material because it is smooth and the ball rolled more easier on it.”</i></p> <p><i>“These sponges have the same shape as the bricks on my house, so I used them to paint a brick pattern on the birdhouse I built.”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	 Video title: "Numeracy Through the Day" – see the clip "Mathematics in Inquiry – Responding to Children's Ideas". Representing A child uses materials in the visual arts area to make a replica of the bug she has been observing and labels the parts using a non-fiction text to help with words such as "wings", "antennae", and "thorax".	Challenging <i>"I heard you say you put a roof on your house. I observed the 'angle' you used on the roof."</i> (The educator points to the angle while using the word.) Extending The educators plan ways to support children's development of vocabulary. One strategy is to model new vocabulary in the context of the children's play both inside and outside the classroom.  Video title: "Literacy Through the Day" – see the clip "Strategies to support oral language development".
1.8 ask questions for a variety of purposes (<i>e.g., for direction, for assistance, to innovate on an idea, to obtain information, for clarification, for help in understanding something, out of curiosity about something, to make meaning of a new situation</i>) and in different contexts (<i>e.g., during discussions and conversations with peers and adults; before, during, and after read-aloud and shared reading experiences; while exploring the schoolyard or local park; in small groups, in learning areas</i>)	Saying <i>"I wonder what would happen if we"</i> <i>"Can we find some more pictures of towers?"</i> <i>"What should we try next?"</i> <i>"Do you think if we moved it this way it will look different?"</i> <i>"Why is this getting longer?"</i> <i>"Does this start like your name?"</i> <i>"I think this is the enemy of the ants."</i> <i>"Is this the word 'predator'?"</i> (after saying the word in chunks). <i>"Yes, I was right. It is the enemy</i>	Responding The educators model different types of questions and use think-alouds to make explicit for the children the purpose for each type of question. Challenging The educators post pictures of items that were once considered "innovative" (<i>e.g., a typewriter, a slate and chalk, an old-fashioned telephone, a pocket watch</i>) but that are likely to be unfamiliar to the children. They invite the children to look at the pictures and to record questions that would help them figure out what the "innovations" are and

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>because that is what 'predator' means and that is the word 'predator'."</i></p> <p>Doing</p> <p>Some of the children notice that some plants in the class garden seem to be dying. They wonder why some are dying and others are not. They take photographs, make a list of questions, and then post the photographs and the questions on the Kindergarten Twitter page to see if someone can help.</p> <p>Representing</p> <p>The children are invited to write on sticky notes any questions they have about the empty bird's nest a child has brought to class. Some children decide to try and create their own nests, trying to think from the bird's perspective about what elements should be included in the nest.</p>	<p>what they were used for. They think with the children about how humans adapt to make things better.</p> <p>Extending</p> <p><i>"I wonder if we can find a faster way to figure out how many people are away each day."</i></p> <p><i>"How can we use technology so children don't feel sad that they miss out on what we are learning?"</i></p> <p>(Note: Educators will use their professional judgement in using this example, given the variety of circumstances that may cause a child to be absent and the differences in the access to technology various families may have.)</p>
<p>1.9 describe personal experiences, using vocabulary and details appropriate to the situation</p> <p>1.10 retell experiences, events, and familiar stories in proper sequence (<i>e.g., orally; in new and creative ways; using drama, visual arts, non-verbal communication, and representations; in a conversation</i>)</p>	<p>Saying</p> <p><i>"My mom and I figured out how to fix the fence. We had to find a different kind of nail."</i></p> <p><i>"My friends and I played Red Rover after supper last night. But we had to make up some new rules so that the little kids could play, too."</i></p> <p><i>"We had to change the angle and the size of the ramp so the ball wouldn't fall off."</i></p>	<p>Responding</p> <p>During a whole-class discussion, the educators model the sequence for retelling. The educators think together with the children about the idea that audience and purpose are important when preparing for a retelling. They also think together about why we retell stories and events, both in school and outside school.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>"I helped my friend use an app on his tablet to make his picture look the way a bird would see it."</i></p> <p>Doing</p> <p>A small group of children use materials in the classroom to modify a ramp to keep the ball from falling off before the end. They explain (many children use gestures to illustrate) to the next group of children why they made the changes and how the changes improved their explorations.</p> <p>A group of children retell a familiar story using natural materials.</p> <p> See "Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day" – the clip "Re-thinking Literacy Structures".</p> <p>Representing</p> <p>At the sand table, the children retell the story of "The Gingerbread Man", based on a book that has been intentionally placed at the sand table by the educators as a prop to enhance their retelling of the events they remember from the story.</p>	<p>Challenging</p> <p>The educators take digital photographs of the children putting on their winter outdoor clothing. They invite the children to arrange the pictures in proper sequence. They record their observations of the children's sequencing.</p> <p>Extending</p> <p>During a visit to their Grade 3 reading buddies' classroom, the Kindergarten children describe their favourite part of the Kindergarten classroom. They discuss how they could innovate on the design (the children are encouraged to negotiate adaptations to their learning environments) so that the two classrooms have similarities but are appropriate to the age and learning styles of the children in both classes.</p> <p> See "The Third Teacher: Designing the Learning Environment for Mathematics and Literacy, K–8", <i>Capacity Building Series</i> (July 2012).</p>

 **Professional Learning Conversation**

Re. SE1.5: The educators decide during a planning meeting to ask questions that encourage more complex sentences, such as, “*I wonder – how do you cook food in the wok?*” Or, “*The red sari has many designs. I see things that*

shine. What do you see?” The educators agree that they will continue to ask questions that encourage children to express more of their thinking.

OE4

As children progress through the Kindergarten program, they:

demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts

Conceptual Understandings

- We can use our problem-solving skills in social situations.
- There are many ways to solve a problem.
- I can think about and adapt my actions, depending on the context.
- We make choices and decisions when solving problems.
- Problems can provide an interesting challenge.
- Problems can have many solutions.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators’ Intentional Interactions
<p>4.1 use a variety of strategies to solve problems, including problems arising in social situations (<i>e.g., trial and error, checking and guessing, cross checking – looking ahead and back to find material to add or remove</i>)</p>	<p>Saying</p> <p><i>“We put our structure on the shelf so we could work on it tomorrow and not have to tidy up.”</i></p> <p><i>“We could use a long block to reach back and get the car.”</i> (The car had rolled to the back of the shelf, and they couldn’t reach it.)</p>	<p>Responding</p> <p>The educators observe the small group of children measuring with the blocks. They spend the first few minutes observing and documenting what they see and hear so they have more insight into what the children are thinking (to support assessment for learning).</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>Using different sizes of blocks, a group of children are trying to measure around another child who is lying on the carpet. They are trying to see how many blocks they will need to make an outline around the child. They take some blocks off the shelf but discover that <i>“These won’t go all the way around. We are going to need more.”</i></p> <p>Representing</p> <p>A small group of children decide to show how many ways they can sort a group of shells. They then begin to arrange sets of shells with similar attributes into patterns, naming how the pattern is being extended. After each change, they reread the pattern and say, “Next comes ...”.</p>	<p>Challenging</p> <p>After observing for a few seconds and seeing the children using trial-and-error strategies, guessing, and checking, the educators notice and name it back to the children: <i>“We saw you trying different sizes of blocks. What happened? (to support assessment for learning).”</i></p> <p>Extending</p> <p>An educator sits with the children briefly when he observes them moving their sets of shells into different arrangements. The educator photographs the patterns and plans to share the photos with the children to ask about their thinking as they created the patterns (to support assessment for learning).</p>

OE6

As children progress through the Kindergarten program, they:
 demonstrate an awareness of their own health and well-being

Conceptual Understandings

- We develop an understanding of the factors that contribute to healthy development, a sense of personal responsibility for lifelong health, and an understanding of how living healthy, active lives is connected with the world around us and the health of others.
- I have the right to be healthy and to feel safe.
- There are things that I need to know and do to keep myself safe and healthy. I am empowered to make choices that will keep me healthy.
- Healthy food choices affect my body and my feelings.
- I am learning to recognize when I am tired or need a break.
- I am learning to make healthy choices and to be physically active, in order to keep my body healthy and safe, and to grow strong.
- We learn adaptive, management, and coping skills, and practise communication and critical thinking skills, in order to learn how to build relationships.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>6.1 demonstrate an understanding of the effects of healthy, active living on the mind and body (e.g., choose a balance of active and quiet activities throughout the day; remember to have a snack; drink water when thirsty)</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>“I’m thirsty from all that running. I really need a big drink of water.”</i></p> <p><i>“I am going to the quiet space to do a puzzle.”</i></p> <p><i>“I ride my bike. It’s a fun and healthy thing to do. And it’s good for the environment.”</i></p> <p><i>“I like being active outside. On the weekend I helped my uncle sweep his driveway, and I felt hot when I did that, so I went and sat in the shade.”</i></p> <p>Doing</p> <p>Children choose a physical activity such as climbing or playing with a ball during outdoor playtime. After outdoor playtime, some children choose to spend quiet time with a book or listening to an audiobook before returning to their work in the learning areas.</p>	<p>Responding</p> <p>An educator observes children’s efforts to make the healthiest choices possible during daily routines and acknowledges the children’s actions:</p> <p><i>“I noticed you’re trying more and different fruits and vegetables. Why? Which ones do you like best?”</i></p> <p><i>“When you go for a walk, what do you do to be sure that you will be safe?”</i> (e.g., wear sunscreen and a hat and sunglasses if it is sunny; let someone know where you are going)</p> <p>The educators introduce the class to Canada’s Food Guide.</p> <p>Challenging</p> <p><i>“How does eating healthy foods help your body and mind?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>A child takes the initiative to make a sign for snack table <i>“to show what is healthy for snack.”</i></p> <p>Representing</p> <p>A child approaches the teacher to let her know what he needs: <i>“My stomach is rumbling. I might need a snack.”</i></p> <p>Several children make a book illustrating that they have learned behaviours that contribute to healthy growth and development. The book includes pages that show children being physically active at home and at school, getting a good night’s sleep, making the healthiest possible food choices, and being safe in their daily lives. The children share their work with the educators, who provoke a discussion about the importance of feeling good about yourself and recognizing the things that make you unique as another part of being healthy. When their book is complete, the children add it to the class library for others to read.</p>	<p><i>“In addition to eating healthy foods, what are some other things that help your whole body to be healthy?”</i></p> <p>Extending</p> <p>After the children set up a store in the dramatic play area, the educators observe the kinds of items they have chosen to sell and ask them to talk about their choices.</p> <p>(In the gym or playground): <i>“Before we start to move, what are some things we need to check to be sure everyone can participate safely?”</i></p>
<p>6.2 investigate the benefits of nutritious foods (e.g., nutritious snacks, healthy meals, foods from various cultures) and explore ways of ensuring healthy eating (e.g., choosing nutritious food for meals and snacks, avoiding foods to which they are allergic)</p>	<p>Saying</p> <p><i>“My friend is allergic to peanuts. How can he be safe in our classroom when some kids bring nuts for snack?”</i></p>	<p>Responding</p> <p>The educators discuss with the children what it means to be allergic. They explain why some children need to avoid particular foods and reinforce the point with statements such as,</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>"I liked it when we got to try rice dishes from different countries. Some of them had healthy stuff like vegetables in them. And they tasted good, too!"</i></p> <p>Doing</p> <p>Some children set up a store in the dramatic play area. They stock the store with a wide variety of food items, but encourage their customers to buy fruits and vegetables when they shop.</p> <p>Representing</p> <p>Children make posters for the shelves of the store, telling customers about which items are healthy choices.</p>	<p><i>"We have posted signs, so that everyone knows how to keep our classroom safe."</i></p> <p>Challenging</p> <p><i>"What are some healthy choices for snacks?"</i></p> <p><i>"Why do we need to eat lots of fruits and vegetables?"</i></p> <p><i>"Why is a piece of fruit a better snack than a doughnut?"</i></p> <p>Extending</p> <p>After tasting several rice dishes from a variety of countries, the children decide they would like to taste other dishes from different cultures.</p> <p>The educators collect menus from a variety of ethnic restaurants in their community. They invite children to explore the menus with them, looking at which dishes would be healthy choices, while keeping in mind the food allergies in the classroom.</p>
<p>6.3 practise and discuss appropriate personal hygiene that promotes personal, family, and community health</p>	<p>Saying</p> <p><i>"I washed my hands."</i></p> <p><i>"I taught my little sister not to put toys in her mouth 'cause of the germs."</i></p> <p><i>"I need a tissue."</i></p> <p><i>"I am going to the dentist tomorrow to get my teeth cleaned and checked."</i></p>	<p>Responding</p> <p>Based on their observations, the educators acknowledge children's practices that demonstrate good personal hygiene:</p> <p><i>"I noticed that you washed your hands after you were done playing in the sand. You did that yesterday, too, after you came back from the gym."</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>Children create a sequence of digital photographs showing the steps for washing hands and place the photographs by the sink or washing bin.</p> <p>Representing</p> <p>The educators learn from a child's family that the child has shared and demonstrated at the dinner table what she has learned in class about "sneeze in your sleeve".</p>	<p>Challenging</p> <p><i>"In what ways do we take care of all parts of our body? Why is it important to do these things?"</i></p> <p>Extending</p> <p>Some of the children share with the educators that, during a washroom break at the local community centre, they noticed that some people left without washing their hands. The educators encourage the children to discuss what they could do to help others understand the importance of hand washing. The children decide to write to the community centre and offer the class's digital photographs of the steps for washing hands for posting in the washrooms at the community centre.</p>
<p>6.4 discuss what action to take when they feel unsafe or uncomfortable, and when and how to seek assistance in unsafe situations (<i>e.g., acting in response to inappropriate touching; seeking assistance from an adult they know and trust, from 911, or from playground monitors; identifying substances that are harmful to the body</i>)</p>	<p>Saying</p> <p><i>"When I saw a boy fall on the playground, I told the teacher."</i></p> <p><i>"My mom's friend wanted to give me a hug when she met me. I didn't want to hug her, so I said, 'Nice to meet you. I'd rather not hug.'"</i></p> <p><i>"I told Bryna not to call me that name."</i></p> <p><i>"When the dog that was all by itself growled at me, I went to my babysitter's house."</i></p>	<p>Responding</p> <p>The educators record children's safety-related ideas and questions and then invite a community police officer to visit the class to discuss safety and answer some of the children's questions.</p> <p>Challenging</p> <p>The educators ask the children to think of things they should avoid that could be harmful to their health (<i>e.g., smoking, taking medicine that belongs to someone else</i>). They record the children's suggestions.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>In the dramatic play area, a child calls 911, gives the operator her name and the address of the house, then says that someone is sick.</p> <p>Representing</p> <p>A child draws pictures of the warning signs found on various household cleansers on large paper and explains to some other children what they mean.</p>	<p>Extending</p> <p>An educator presents a variety of scenarios to the children for discussion, using questions that start, <i>“What would you do if...?”</i></p>
<p>6.5 discuss and demonstrate in play what makes them happy and unhappy, and why</p>	<p>Saying</p> <p><i>“I was happy when my experiment with the flashlights worked. I was glad my theory was right.”</i></p> <p><i>“I was sad when the class pet fish died. I wonder why he died.”</i></p> <p><i>“I was happy when we got to play outside because I was tired and the fresh air made me feel better.”</i></p> <p><i>“I was sad when some children got hurt and so the sliding hill got closed.”</i></p> <p>Doing</p> <p>Using puppets, children express emotions through the dialogue they create for their puppet characters.</p> <p>Representing</p> <p>After the class pet fish dies, a child draws a picture of the fish. At home, the child tells her family, <i>“It was sad that the fish died at school today. I made a picture of her to hang on the wall in the dramatic play area.”</i></p>	<p>Responding</p> <p>Showing empathy by acknowledging feelings can create a connection between children and team members. The educators acknowledge the feelings expressed by children by saying, <i>“I see you are sad. It’s hard when your mom has to leave and go to work.”</i></p> <p>Challenging</p> <p><i>“How can people tell when we are feeling happy or sad?”</i></p> <p>Extending</p> <p>An educator discusses with the children what they can do when they are feeling sad (or angry, hurt, happy, etc.), and how they can respond when their peers show different kinds of feelings.</p> <p><i>“How can we respond to people’s emotions?”</i></p> <p><i>“How can we recognize situations that require different responses?”</i></p>


Professional Learning Conversation

Re. SE6.1: The educator teams in the school have been discussing the importance of outdoor play – and physical activity in general – for young children. They recognize that many children in their school community need some innovative ideas so they can engage in physical activity regardless of the context. Through their professional reading, they have learned that physical activity, including and perhaps especially outdoor play, contributes to children’s ability to concentrate and to self-regulate, enhances their overall health, and furthers their physical development. They decide to observe the

children during outdoor play and, based on their observations, to determine how they can increase the children’s general level of activity. In addition, they decide to discuss with the parents on the school council ways in which this information can be shared with families, to encourage more outdoor play and physical activity outside school time. They share ideas like tracking the number of footsteps walked indoors, seeing how many footsteps it takes to cross a room, and walking or marching on the spot, increasing the time spent on these activities as the children progress.

OE9

As children progress through the Kindergarten program, they:

demonstrate literacy behaviours that enable beginning readers to make sense of a variety of texts

Conceptual Understandings

- Reading is an active process of interacting with and constructing meaning from text.
- Reading strategies help us to understand the meaning of different texts.
- Readers use a variety of strategies to think about and understand what they read.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>9.1 use reading behaviours to make sense of familiar and unfamiliar texts in print (<i>e.g., use pictures; use knowledge of oral language structures, of a few high-frequency words, and/or of sound-symbol relationships</i>)</p>	<p>Saying</p> <p><i>"I knew it said 'spider', 'cause I used the picture."</i></p> <p><i>"I know that says 'the'."</i></p> <p><i>"I made my voice loud here because it gets dark (pointing at the bold print)."</i></p> <p><i>"I changed the word on the sign. Now it says 'fragile'. I thought it was a 'J', but then I looked on the box and I saw how to write it."</i></p> <p>Doing</p> <p>During independent reading, a child points to the words, looks at the pictures, and rereads after several miscues when she realizes that what she has read doesn't make sense.</p> <p>Representing</p> <p>A group of children decide to make the dramatic play area into a bookstore.</p> <p>A group of children decide to reorganize the books so that people can read everywhere not just in the books area.</p>	<p>Responding</p> <p>The educators scaffold the children's application of reading strategies by thinking aloud and asking questions or making comments such as:</p> <p><i>"What are some other strategies you can use to figure out words you don't know?"</i></p> <p><i>"I noticed you tried several words before the sentence sounded right to you."</i></p> <p>Challenging</p> <p><i>"If you think the word is 'jump', what letter will we see at the beginning when we lift the sticky note?"</i></p> <p>Extending</p> <p>Assessment information reveals that a small group of children know a number of high-frequency words, have knowledge of letter and sound correspondence(s), and are able to read simple patterned text. The educators determine that this group of children would benefit from a guided reading lesson using a non-fiction text.</p>

OE10

As children progress through the Kindergarten program, they:
demonstrate literacy behaviours that enable beginning writers to communicate with others

 See the Professional Learning Conversation following the chart.

Conceptual Understandings

- Written communication enables us to make thoughts, ideas, and feelings visible to others.
- We write for a variety of reasons and purposes.
- It is important for others to understand what we are trying to say through writing.
- Writers think first about the purpose and audience for their writing and then about what form of writing would best convey their desired meaning.
- Writers use different tools and resources to help them write.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
10.1 demonstrate an interest in writing (e.g., choose a variety of writing materials, such as adhesive notes, labels, envelopes, coloured paper, markers, crayons, pencils) and choose to write in a variety of contexts (e.g., draw or record ideas in learning areas)	Saying <i>"Why do all the 'A's look different?"</i> <i>"What does this say?"</i> <i>"I wrote down all the parts of our marble run."</i> <i>"I want to make a sign for my structure that says, 'Delicate. Please be careful'."</i> <i>"I am going to write a note for my friend."</i> <i>"I showed a rain storm in my picture because I made a lot of raindrops."</i>	Responding <i>"How do you know that all of these letters are 'A's?"</i> <i>"How will labelling the different parts of the marble run help the other children who want to build one?"</i> <i>"You wrote a note to your friend. Writers write for so many different reasons."</i>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>10.2 demonstrate an awareness that text can convey ideas or messages (<i>e.g., ask the educator to write out new words for them</i>)</p>	<p>Doing</p> <p>A group of children notice that the instructions for putting the new tables together are printed, in words and pictures, on a label on the underside of the tables. They refer to the instructions when helping to construct the tables.</p> <p>Representing</p> <p>When their marble run is ready for testing, the children decide that someone should write down what happens when each child's marble goes down the run.</p>	<p>Challenging</p> <p>The educators ask questions such as:</p> <p><i>“What do you notice about the steps in the instructions? Why do you think the instructions are written this way?”</i></p> <p><i>“Where else might we find instructions for doing something? How do you think they might look the same as – or different from – these instructions?”</i></p> <p>Extending</p> <p>After a class visit to a farmers' market, the children decide to use the vegetables they bought to make soup. In a guided writing time, the children work with an educator to write the steps they think they will need to follow to make soup. They check their steps against the actual process and edit their steps as necessary.</p>
<p>10.3 write simple messages (<i>e.g., a grocery list on unlined paper, a greeting card made on a computer, labels for a block or sand construction</i>), using a combination of pictures, symbols, knowledge of the correspondence between letters and sounds (phonics), and familiar words</p>	<p>Saying</p> <p><i>“I used the word wall to help me write [the word].”</i></p> <p><i>“I wrote ‘CLOSED’ on the bookstore so the customers would know we’ve gone home.”</i></p> <p><i>“We made a map so people would know where to drive on our roads. Now we are making signs for the streets with numbers, too, so people know the house numbers.”</i></p>	<p>Responding</p> <p>To support children's use of written communication in many contexts, the educators post signs children have written in their home languages. The children's families who use written communication in their home language contribute to the signs. The parents who are unable to come into the school join via web conference.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>The educators observe a child working on a graphic illustration over a few days, adding details each time. The child then asks to take a photograph of his pictures for an app to make a movie with <i>“those things that come out of the mouths”</i> (referring to the speech bubbles in a comic book).</p> <p>Representing</p> <p>A child who is reluctant to write with paper and pencil creates a drawing of her family on the computer and labels all of the family members.</p> <p>A child who is learning English writes labels for her picture in her home language.</p>	<p>Challenging</p> <p>An educator is sitting beside a child who is writing a description of her inquiry about making a ball roll faster down the ramp. To support the child in hearing and recording sounds, the educator uses prompts such as:</p> <p><i>“Stretch the word and listen to the sounds.”</i></p> <p><i>“What sound do you hear at the beginning (in the middle, at the end) of that word?”</i></p> <p><i>“It starts like your name.”</i></p> <p>Extending</p> <p>The educators talk with children about the purposes people have for writing and all the ways people use written communication. They make a list (identifying “making a list” as one of the purposes). Families begin to participate and contribute via blog and e-mail as examples of other purposes for writing.</p> <p>A child has lost a favourite hat at school. After checking the Lost and Found box, she decides to make a poster to put up in the hallway to ask other children and staff to help her find it. She explains that people make signs for “lost cats” and thought the same thing might work for a hat.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>10.4 use classroom resources to support their writing (e.g., a classroom word wall that is made up of children's names, words from simple patterned texts, and words used repeatedly in shared or interactive writing experiences; signs or charts in the classroom; picture dictionaries; alphabet cards; books)</p>	<p>Saying</p> <p>"I know – I can use the name wall." "That is the same as a word from the book." "I know this is how you write it because I saw it on the card."</p> <p>Doing</p> <p>While playing with blocks, a group of children decide they need a secret password for their structure. To write the password, they use the word wall to help them figure out the letters for the words they want to write.</p> <p>Representing</p> <p>To reflect the various cultures in their class, the children begin to create a set of alphabet cards that are meaningful to them and their classmates.</p>	<p>Responding</p> <p>The educators place photographs of the children beside their names on the name wall. In addition, they place class lists in several learning areas as a resource for children's writing.</p> <p>The educators discuss with the children the fact that writers use many tools and resources to support their communication of ideas. They talk together with the children about words writers have to know because they use them all the time (high-frequency words). The educators negotiate and problem solve with the children about where the best place would be to post those kinds of words so that the children can locate them easily from all places in the classroom.</p> <p>See additional examples at:</p> <p> Video title: "Literacy Through the Day" – see the clip "Rethinking the learning environment to support literacy – Co-constructing the learning environment with the children". Also see "The Third Teacher: Designing the Learning Environment for Mathematics and Literacy, K–8", <i>Capacity Building Series</i> (July 2012).</p> <p>Challenging</p> <p><i>"What could you use to help you figure out how to write the word?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>Extending</p> <p>The educators put words from the word wall on binder rings so they are portable and children can use them at various places in the room.</p> <p><i>“How can you remind the other children about the new words we have learned when you are working with them in our room?”</i></p>
<p>10.5 experiment with a variety of simple writing forms for different purposes and in a variety of contexts</p> <p>10.6 communicate ideas about personal experiences and/or familiar stories, and experiment with personal voice in their writing (e.g., make a story map of “The Three Little Pigs” and retell the story individually to a member of the educator team during a writing conference)</p>	<p>Saying</p> <p><i>“I’ll make the menu.”</i></p> <p><i>“I am writing an invitation to my party.”</i></p> <p><i>“I put these labels on my drawing of my structure.”</i></p> <p><i>“I made this ‘ha, ha, ha’ coming out of the mouth in my picture to show my papa laughing.”</i></p> <p>Doing</p> <p>A child in the dramatic play area decides to create an appointment book for the “doctor’s office”. The child also writes appointment cards for the “patients”.</p> <p>Representing</p> <p>A small group of children use the digital photographs of their neighbourhood walk to innovate on a familiar story. An educator helps</p>	<p>Responding</p> <p>The educators observe that children in the dramatic play area are making menus for the class café. One of the educators joins the play and prompts the children to think about other ways in which coffee shops use writing.</p> <p>Challenging</p> <p>An educator works in the writing centre with a small group of children who are designing a mailbox similar to one they have seen outside. A child shows the educator a page with some writing on it and says, <i>“I think someone wrote me a note, but I don’t know who.”</i> The educator challenges the child by saying, <i>“I wonder how you could find out?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>them to put the images into a computer program where they can record their retelling. They send it to their families by e-mail and show the principal their non-fiction book. They plan to make a fiction text about their neighbourhood next.</p>	<p>Extending</p> <p>A group of children are building structures out of commercial building blocks. Their classroom has a large variety of pieces, and they plan to purchase more. They do research using online catalogues and discover that the blocks are usually sold in sets that allow for building only a particular design. They decide to write to the company president to ask why the company doesn't sell the blocks in a format that allows children to build whatever they choose.</p>

 **Professional Learning Conversation**

Re. OE10: The educators post the stages of picture making and the stages of writing in the writing area and on the Family Information Board. They also post pedagogical documentation that shows the children's thinking and learning. The children have been drawing and writing to communicate a memory, retell an experience, describe a point of view, describe a structure, and/or gather data from their classmates. At subsequent family conferences,

the educators ask parents to share the kinds of writing that children do at home, and discuss with parent(s) how the samples of the children's work illustrate the stages of picture making and writing. Together, the educators and the parent(s) discuss the children's thinking, learning, and progress. At their drop-in coffee mornings, several parents comment that talking about the documentation has helped them understand their child's learning process.

OE13

As children progress through the Kindergarten program, they:

use the processes and skills of an inquiry stance (i.e., questioning, planning, predicting, observing, and communicating)

Conceptual Understandings

- People have the capacity to feel a sense of wonder about the world.
- Curiosity is part of an inquiry stance.
- Wonderings, questions, ideas, and theories can be created through inquiry.
- The inquiry process helps us to discover new information and to confirm or question our theories about the world.
- The inquiry process is organized and systematic but not necessarily linear.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>13.1 state problems and pose questions in different contexts and for different reasons (e.g., before, during, and after inquiries)</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>“My tower keeps falling down!”</i></p> <p><i>“This bridge doesn’t work.”</i></p> <p><i>“We are trying to figure out a new way to use the tiles.”</i></p> <p><i>“I am trying to build a machine that can go under the water.”</i></p> <p><i>“How come the letter ‘W’ starts with the sound ‘D’?”</i></p>	<p>Responding</p> <p>The educators introduce the inquiry process by asking the children questions that will lead to more questions throughout the inquiry. They listen to children’s contributions with respect and support them in finding answers.</p> <p><i>“How did you build your tower?”</i></p> <p><i>“What do you want your bridge to do?”</i></p> <p><i>What isn’t working?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>Two children are building a structure together, and they look for a way to stabilize it: <i>“I wonder what would happen if we put the bigger blocks on the bottom?”</i></p> <p><i>“I think we need something in the middle to keep it from falling down. What else can we use?”</i></p> <p>Representing</p> <p>With the help of an educator, some of the children record their questions about an investigation on sticky notes and post them for others to think about.</p>	<p>Challenging</p> <p>The educators pose questions that cause children to think logically and use language to represent their thinking:</p> <p><i>“Who is going to use the bridge? What do they need the bridge to do for them? What do you know about bridges that will help you build one for the people who need it? How might your bridge need to be different from those in the pictures, to do what it needs to do?”</i></p> <p><i>“Would you feel safe on that bridge? What are some safety things you need to think about?”</i></p> <p><i>“How will you build the first row of your tower?”</i></p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clip “The Power of Wait Time”.</p> <p>Extending</p> <p>As the children prepare to plant their seeds in plastic pots, an educator asks them if they can think of ways to plant them that is better for the environment and for the plants. The children brainstorm ideas and select a few to try the next day. The educators place a set of letters out for children to explore, asking, <i>“What do you notice about the letters?”</i> This leads to numerous questions from the children. Among other things, they wonder, <i>“What would happen if we didn’t have letters?”</i> (e.g., <i>“If we didn’t have letters, we couldn’t talk.”</i>).</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>13.2 make predictions and observations before and during investigations</p>	<p>Saying</p> <p><i>“I think we need to put more blocks on the bottom. Then our tower won’t fall over this time.”</i></p> <p><i>“I think the banana will change just like the apple did.”</i></p> <p><i>“I think my shadow will move when I move.”</i></p> <p>Doing</p> <p>At the water table, several children test their boats, observing how many shells each can hold before it sinks.</p> <p>Children rotate various shapes, moving them in space and predicting what will result when they put two shapes together.</p> <p>The children try to make water move through a funnel and tube system at different speeds.</p> <p>The children create a large spiral pattern.</p> <p>Representing</p> <p>As one child places shells in a boat, another keeps track of the number of shells using a simple tally.</p> <p>The children decide to try to make spirals with different materials and in different quantities.</p> <p>They make predictions about how much space they will need.</p>	<p>Responding</p> <p>The educators decide to listen more and wait before they ask questions or prompt children’s thinking. As a result they learn more about the children’s thinking (to support assessment <i>for</i> learning) and then use their observations to inform the timing and the kinds of prompts/questions they use.</p> <p><i>“What did you notice?”</i></p> <p><i>“What do you think will happen?”</i></p> <p><i>“What might we notice when we go back to the woods now that it is winter?”</i></p> <p><i>“Yesterday was sunny. Now it’s raining. What are some of the things you might see outside today that you didn’t yesterday?”</i></p> <p>The educators remove irrelevant materials, such as the sea creatures, from the water table to allow the children to focus on finding new ways to increase the speed of the water moving through a funnel and tube system.</p> <p>Challenging</p> <p>An educator talks with the children about their observations and thinking about how different elements in their design of the funnelling system are affecting the speed of the water.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p><i>“How does your hand look when you see it through a magnifying glass? What do you see that you didn’t see without the glass?”</i></p> <p><i>“What can you change in your design to make the boat hold more shells?”</i></p> <p>Extending</p> <p><i>“You’ve tried that size of funnel. I wonder what would happen if you tried it with sand in the sand table?”</i></p> <p>The educators remove the shells and modelling clay from the water table and replace them with pieces of tinfoil and small washers. They invite the children to apply their learning from building their clay boats to help them build boats from tinfoil that will hold the most washers.</p>
<p>13.3 select and use materials to carry out their own explorations</p>	<p>Saying</p> <p><i>“Here are some bungs we can use for wheels.”</i></p> <p><i>“Let’s plant this seed in stones and see if it grows.”</i></p> <p>Doing</p> <p>A small group of children choose materials that they think will prevent their ice cube from melting.</p> <p>Representing</p> <p>The children show, in words and pictures, the rate of growth of their bean plants.</p>	<p>Responding</p> <p><i>“What are you investigating? What materials are you thinking of using? Why? What tools will you need?”</i></p> <p>Challenging</p> <p><i>“What can you do to your ice cube holder to make it better?”</i></p> <p>Extending</p> <p>After the children’s ice-cube inquiry, the educators ask the children: <i>“How can you use what we learned about preventing ice cubes from melting to design a way to keep hot chocolate hot?”</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>13.4 communicate results and findings from individual and group investigations (<i>e.g., explain and/or show how they made their structure; state simple conclusions from an experiment; record ideas using pictures, numbers, and labels</i>)</p>	<p>Saying</p> <p><i>“We made a sign so that the cars would know where to go.”</i></p> <p><i>“We found out that the plant in the sun grew best.”</i></p> <p><i>“When we added water to the sand it made it stick together.”</i></p> <p>Doing</p> <p>The children build a sand city. They explain what they are doing and which materials and tools are most useful and why.</p> <p>Representing</p> <p>Some children make sketches to show how they started their plants and what happened to the plants that didn't get any sunlight.</p>	<p>Responding</p> <p><i>“How can you show that the plants in the sun grew faster than the plants in the shade?”</i></p> <p><i>“What conclusion can you make from our plant experiments?”</i></p> <p>Challenging</p> <p><i>“Did things turn out the way you thought they would? Why? Were there any surprises?”</i></p> <p><i>“What did you find out when you looked at the leaf just with your eye? What did you find out when you looked at it with the magnifying glass?”</i></p> <p>Extending</p> <p>The children tell the educators that when they first added water to the sand, it didn't stick together very well but when they added too much it was too wet. The educators introduce the concept of using “trial and error” in an inquiry and encourage the children to try again with some dry sand.</p>

 **Professional Learning Conversation**

Re. SE13.1: (1) The educators observe and listen to children as they engage in play. They then decide to talk with children about the “bigger concepts” in relation to their working theories. The educators reflect that they used to be concerned that the children’s interests would change so quickly that they wouldn’t be able to effectively respond to them. This led them to plan “themes” that were based on the children’s interests (e.g., nouns – “Dinosaurs”, “Cars”, “Fishing”). Focusing instead on the children’s thinking

now causes them to move away from their former planning model, which was carried out away from the children and often focused on isolated activities.

(2) The educators view a video of children investigating the properties of water. As they watch, they compare their observations, noting the way children approach and learn from the experience. They then discuss among themselves ways of extending the children’s learning by providing further opportunities for exploration and inquiry.

OE14

As children progress through the Kindergarten program, they:

demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings

Conceptual Understandings

- People have the capacity to feel a sense of wonder about the world.
- The natural and built worlds are connected and have an impact on one another.
- Human-built and natural systems interact with one another.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>14.2 sort and classify groups of living and non-living things in their own way (e.g., using sorting tools such as hula hoops, sorting circles, paper plates, T-charts, Venn diagrams)</p>	<p>Saying</p> <p><i>“These things are all round.”</i></p> <p>(To an educator who joins the group in the class “restaurant”): <i>“I put all the fruit on this plate and all the meat on that plate.”</i></p> <p>Doing</p> <p>The children put away materials in the blocks area, separating the wooden blocks from the foam blocks and then sorting each type by size and colour.</p> <p>Representing</p> <p>The children sort items and then use a T-chart to show how the items have been classified.</p>	<p>Responding</p> <p><i>“Tell me how you sorted these things.”</i></p> <p><i>“Which things are the same in some way? Which ones are different?”</i></p> <p><i>“What is the name for all the things in this group?”</i></p> <p><i>“How does sorting [these things] in this way help us learn?”</i></p> <p>Challenging</p> <p><i>“What are some other ways that you could sort the same things?”</i></p> <p><i>“Why do people need to sort things?”</i></p> <p>Extending</p> <p>An educator works with children who are creating menus for the class café. Keeping in mind their growing understanding of how and why we sort things, he encourages the children to think about how the items on their menus could be sorted. The educator prompts the children to think about sorting objects that have one common attribute but differ in other attributes – such as triangles of different sizes – and asks how this can help them decide how to list things on their menus.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>14.3 recognize, explore, describe, and compare patterns in the natural and built environment (<i>e.g., patterns in the design of buildings, in flowers, on animals' coats</i>)</p>	<p>Saying</p> <p><i>"The floor of our classroom has a pattern."</i></p> <p><i>"Day, night; day, night; day, night – that's a pattern."</i></p> <p><i>"The next leaf on the twig would be on this side because the pattern is: this side, that side; this side, that side."</i></p> <p>Doing</p> <p>In the sorting area, a child uses the transportation shapes to make a pattern: big truck, small truck, blue car; big truck, small truck, blue car.</p> <p>Representing</p> <p>On a walk in the neighbourhood, children use a marker and a photograph of the street to highlight the patterns they see – in bricks or shingles on a house, in slats in a fence, in a spider web, and in the rings on a tree stump.</p>	<p>Responding</p> <p><i>"What patterns do you see ...?"</i></p> <p><i>"Is the pattern in the ... like another pattern you have seen elsewhere? In what way?"</i></p> <p>The educators share with the children that patterns are predictable and have an element of repetition.</p> <p>Challenging</p> <p><i>"I know this is a pattern because ..."</i></p> <p><i>"What comes next in the pattern? How do you know?"</i></p> <p><i>"What do you notice when both sides of your buildings match?"</i></p> <p><i>"Why do you think some things look the same on both sides (show symmetry) in nature and in buildings?"</i></p> <p>Extending</p> <p>The educators review with the children what they know about growing and shrinking patterns. They then project images from nature to see if what they already know about growing and shrinking patterns applies in the natural world.</p>

OE20

As children progress through the Kindergarten program, they:

apply the mathematical processes to support the development of mathematical thinking, to demonstrate understanding, and to communicate thinking and learning in mathematics, while engaged in play-based learning and in other contexts

Conceptual Understandings

- We use the mathematical processes embedded in many different contexts to make sense of our experiences and communicate our thinking.
- **Problem solving:** Problems can be solved collaboratively. There are many ways to solve a problem. Solving problems helps us learn how to think like mathematicians.
- **Reasoning and proving:** Observing mathematical strategies and talking about them help make us aware of our mathematical thinking. When we explain our thinking and reasoning, we all learn more.
- **Reflecting:** Reflective statements and questions deepen our understanding by helping us think critically about our answers/solutions.
- **Selecting tools and strategies:** The processes of thinking about and choosing tools and strategies help us to understand ideas and solve problems.
- **Connecting:** Connections can be made between the mathematics in play-based learning and questions related to our interests and daily experiences.

- **Representing:** There are many ways to represent our ideas and thinking. We can show our thinking by using concrete materials, pictures, numbers, and gestures, or by using physical actions, such as hopping, tapping, or clapping, or in various other ways.
- **Communicating:** Mathematical thinking can be communicated in many ways, including oral, visual, and concrete means.

Note: : The specific expectations in the following chart are used as examples to illustrate that the mathematical processes are relevant to and embedded in **all** expectations that relate to demonstrating mathematics behaviours, regardless of their particular focus (e.g., on number sense and numeration or measurement or geometry and spatial sense).

In the following chart, the mathematical processes that are most relevant in the examples provided are identified in square brackets. (Other mathematical processes may also be involved, but are not stated.)

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

<p>Specific Expectations <i>As children progress through the Kindergarten program, they:</i></p>	<p>Ways in Which Children Might Demonstrate Their Learning</p>	<p>The Educators' Intentional Interactions</p>
<p>20.1 demonstrate an understanding of number relationships for numbers from 0 to 10, through investigation (<i>e.g., show small quantities using fingers or manipulatives</i>)</p> <p>20.2 use, read, and represent whole numbers to 10 in a variety of meaningful contexts (<i>e.g., use a hundreds chart to read whole numbers; use magnetic and sandpaper numerals to represent the number of objects in a set; put the house number on a house built in the blocks area; find and recognize numbers in the environment; write numerals on imaginary bills at the restaurant in the dramatic play area</i>)</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>“There are five on each hand.”</i> [reasoning and proving; communicating]</p> <p><i>“I wanted to put the same number of cubes on both sides so they would [be the] same.”</i> [reasoning (algebraic) and proving; reflecting; communicating]</p> <p><i>“Two of these blocks make one of these.”</i> [reasoning (proportional) and proving, representing, communicating]</p> <p><i>“The number on that house is ‘one-two-three’. That is how we count: ‘one, two, three.’</i>” [reasoning (enumerating) and proving; reflecting; communicating]</p> <p>Doing</p> <p>An educator works with a child to co-construct learning and explore the child’s thinking about quantities and equivalent sides of the balance scale. The educator listens to and records the child’s thinking in a video, to revisit at a later time. The educator hears evidence that the child is using <i>algebraic thinking, connecting quantity and measurement, applying a process for selecting tools and materials, problem solving, and reasoning</i>. Each time the educators view the video with the child (to support assessment <i>for</i> learning and assessment</p>	<p>Responding</p> <p><i>“Are there other ways we can show five?”</i></p> <p><i>“What else do we use numbers for?”</i></p> <p><i>“Where else do you see numbers?”</i></p> <p><i>“What other house numbers might look like this one?”</i></p> <p> See “Kindergarten Matters: Re-imagining Literacy and Mathematics Throughout the Day” – the clip “Small-Group Learning About Numbers”.</p> <p>Challenging</p> <p>The educators work with a small group of children with a hundreds chart. They ask the children, <i>“What do you notice about the numbers?”</i> They document what the children say (to support assessment <i>for</i> learning). They hear children talk about the numbers in ways they never expected. The children begin to notice a pattern:</p> <p><i>“All of these have ones in them.”</i></p> <p><i>“Look, all of these have twos and so do these (pointing out rows and columns).”</i></p> <p>Over time, more children take part in the discussions.</p> <p>(<i>Note:</i> The hundreds chart started at 0 and went to 99.)</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>as learning), they discover more evidence of the child's mathematical thinking. The child is invited to share his thinking with the rest of the class.</p>  Video title: "Numeracy Through the Day" – see the clip "Co-constructing learning". <p>Representing</p> <p>Some children make menus for the class café. One child, after being out for dinner with her family, observes that the menus in the restaurant had prices on them, but their café menus do not. An educator asks the children:</p> <p><i>"Why do menus have prices on them?"</i></p> <p><i>"Where else might we see numbers at a restaurant?"</i></p> <p>[problem solving; connecting; representing]</p>	<p>Extending</p> <p>The educators wonder with the children how they can make sure that they don't sell more tickets for their bus than they have seats. The children determine that they could number the seats and then make the same number of tickets to sell. They ask some children to try out their system as a way to check their thinking.</p>
<p>20.3 compose pictures, designs, shapes, and patterns, using two-dimensional shapes; predict and explore reflective symmetry in two-dimensional shapes (e.g., visualize and predict what will happen when a square, a circle, or a rectangle is folded in half); and decompose two-dimensional shapes into smaller shapes and rearrange the pieces</p>	<p>Saying</p> <p><i>"My house has four sides. See – I counted them. Even when you turn it around, it still has the same sides."</i></p> <p>[reasoning and proving; reflecting; communicating]</p> <p><i>"I am trying to make it so the roof can open."</i></p> <p>[problem solving; communicating]</p>	<p>Responding</p> <p>The educators place some magnetic shapes on a cookie sheet for the children to use to compose and decompose pictures and designs. They ask:</p> <p><i>"What shapes can you use to make something that looks like an ice cream cone?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>into other shapes, using various tools and materials (e.g., stickers, geoboards, pattern blocks, geometric puzzles, tangrams, a computer program)</p> <p>20.4 build three-dimensional structures using a variety of materials and identify the three-dimensional figures their structure contains</p>	<p><i>"I put these two triangles together and they make a square, but these two triangles don't. I think it is because they are a different size."</i> [reasoning; selecting tools and strategies; reflecting; communicating]</p> <p>Doing</p> <p>A child uses the geoboard to make the letters in his name. [selecting tools and strategies; connecting]</p> <p>A small group of children use pattern blocks, stacking them together to make new shapes (e.g., using two squares to make a rectangle). [The educators document the children's talk and gestures (to support assessment <i>for learning</i>). When they analyse the pedagogical documentation they observe that the children have been using several mathematical processes, including <i>reflecting, problem solving, and reasoning.</i>]</p> <p>A child uses the geoboard to make triangles of different sizes. <i>"See, they have three sides just like we learned."</i> [reasoning and proving; reflecting]</p> <p>Representing</p> <p>After reading aloud a story that is illustrated with tangram designs, an educator asks the children to make one of the designs in the story. The children place the tangram pieces on a design template and then re-create the design by placing the pieces in the same pattern beside the template. Some of the</p>	<p>Challenging</p> <p>To engage children's thinking about the mathematical processes, the educators ask: <i>"You used many different shapes to design your picture. How did you decide what shapes to use? What did you learn about using shapes to create a picture? What might you do differently if you were doing another picture?"</i></p> <p>Extending</p> <p>The educators ask themselves: <i>"How do children compose and decompose shapes when they are building with blocks?"</i> They observe and document (to support assessment <i>for learning</i>) as the children work in the blocks area. Later they share the documentation with the children. The children clarify, add to, and communicate their thinking. The educators project the image of the structure on the whiteboard and flip it to prompt children to engage in spatial reasoning.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>children then use the tangrams to create their own designs and then create design templates for other children to use. Some of the children innovate on the designs and create their own by tracing outside the shape and then challenging their friends. [problem solving; reasoning and proving; representing]</p> <p>(<i>Note:</i> Having the outline around the perimeter of the design is more challenging for children than having each of the shapes outlined.)</p>	
<p>20.5 investigate and describe how objects can be collected, grouped, and organized according to similarities and differences (<i>e.g., attributes like size, colour</i>)</p> <p>20.6 use mathematical language (<i>e.g., “always/sometimes/never”; “likely/unlikely”</i>) in informal discussions to describe probability in familiar, everyday situations (<i>e.g., “Sometimes Kindergarten children like pizza more than hot dogs”; “It is likely that January will be a snowy month”</i>)</p>	<p>Saying</p> <p><i>“I sorted my animals by size.”</i> [reasoning and proving; communicating]</p> <p><i>“In both stories, Goldilocks ate the porridge.”</i> [reasoning and proving; communicating]</p> <p><i>“There are five people standing in the laces row and fifteen people standing in the Velcro row.”</i></p> <p><i>“More people like to eat rice than broccoli. I know because there are more names in this row. I counted them.”</i></p> <p><i>“There are only two people left on the graph that are four [years old].”</i></p> <p>[The three preceding examples involve reasoning and proving, and communicating]</p>	<p>Responding</p> <p><i>“How else might you have sorted the animals?”</i></p> <p><i>“How many children are younger than four? How many children are older than four?”</i></p> <p><i>“How many children are less than five years old?”</i></p> <p>Challenging</p> <p><i>“How else are the stories about Goldilocks the same? In what ways are they different?”</i></p> <p>The educators want to provoke the children’s thinking about probability. They put out a paper bag that is filled with coloured cubes and encourage the children to repeatedly take a cube from the bag. They help the children to keep track of the colours</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p><i>"My brother always meets me at the bus stop after school."</i> [connecting; communicating]</p> <p><i>"Maybe we will have spaghetti for dinner tonight."</i> [connecting, communicating]</p> <p>Doing</p> <p>A small group of children sort books, based on the types of pictures on the front cover, and describe the reasons behind their sorting. [reasoning and proving; connecting; communicating]</p> <p>Representing</p> <p>Some children decide to conduct a survey on pet ownership among their classmates. They use pictures they find online to create a recording sheet with several columns. They then ask classmates to sign their name by the pet that they have. Midway through the survey, they have to add another column that says "No pets". In order to share their findings the children create a graph with separate columns showing the number of children who have cats, dogs, birds, hamsters, and fish. [The example demonstrates the mathematical processes of <i>problem solving, communicating, selecting tools and strategies, reflecting, connecting, and representing.</i>]</p>	<p>that they draw in a concrete graph. After everyone has had a few turns to draw a cube, the educators ask the children to predict what colour of cube will be drawn next, based on the results shown in the graph.</p> <p>Extending</p> <p>The educators model probability language such as "likely", "probable", and "certain" in discussing the following with the children:</p> <p><i>"If you asked five more people whether they like to eat rice or broccoli better, what would you predict they would say?"</i></p> <p><i>"If you drew five more cubes from the bag, what colour would you predict you would draw? Why would you say that?"</i></p> <p>[The examples demonstrate the mathematical processes of <i>problem solving, communicating, selecting tools and strategies, reflecting, connecting, and representing.</i>]</p>


Professional Learning Conversation

Re. SE20.2: The educators decided they needed to know more about probability before they could intentionally provide rich opportunities for the children to explore the concept in play. After doing some professional reading individually, they came back together to talk about what each of them had learned and to determine how they might begin to provide provocations for

the children. They decided to introduce the concept of probability with the whole class, using a coin toss. They explained the idea of “heads” and “tails” to the children and modelled probability language, such as “chance of ...” and “likely to ...”, as they kept a tally of the results of multiple tosses of the coin.

OE22

As children progress through the Kindergarten program, they:

communicate their thoughts and feelings, and their theories and ideas, through various art forms

Conceptual Understandings

- There are many ways to communicate thinking, theories, ideas, and feelings.
- We can discover and interpret the world around us through the arts.
- Through the arts, we can become critically literate and creative citizens of the world.
- The arts provide a natural vehicle through which we can explore and express ourselves in a variety of creative ways.
- We develop our ability to communicate through our engagement in imaginative and innovative thought and action.

Making Thinking and Learning Visible – Where both children and educators are observers and inquirers

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>22.1 communicate their ideas about something (e.g., a book, the meaning of a word, an event or an experience, a mathematical pattern, a motion or movement) through music, drama, dance, and/or the visual arts</p>	<p>Saying</p> <p><i>“We saw a snake in our garden plot. It moved like this.”</i> (The child melts to the ground and inches across the floor on her tummy.)</p> <p><i>“I saw this picture in a book, so I wanted to make a mini version (on a sticky note). See this part here where the circle is supposed to show a close-up of its bones?”</i></p> <p><i>“My painting is a pattern just like on my shirt.”</i></p> <p><i>“That storybook is like a song because ...”</i></p> <p>Doing</p> <p>While listening to a read-aloud story, a child matches the moods and feelings of the characters in the story through his facial expressions.</p> <p>Representing</p> <p>A group of children make drawings to represent their understanding of the beat and rhythm of a poem.</p> <p>A child uses blocks and found materials to show an experience he has had with his family.</p>	<p>Responding</p> <p>The educators model for the children how to use music to communicate their responses to a new poem:</p> <p><i>“You said that part of the poem made you feel sad. Listen to the sound the drum makes when you beat it slowly. It makes a very sad sound.”</i></p> <p>Challenging</p> <p><i>“The drum makes a sad sound. How can you move your body to show the feeling of sadness?”</i></p> <p>Extending</p> <p><i>“How can we show a sad feeling in a painting?”</i></p> <p>Children use actions and gestures to communicate their ideas.</p> <p> Video title: “Literacy Through the Day” – see the clip “Making Learning Visible – Observing, documenting, analysing and taking informed action. Coming together as a community of literacy learners”.</p>

OE23

As children progress through the Kindergarten program, they:

use problem-solving strategies, on their own and with others, when experimenting with the skills, materials, processes, and techniques used in drama, dance, music, and visual arts

Conceptual Understandings

- Exploration of materials and modes promotes creative expression and thought.
- The arts provide ways of perceiving, interpreting, organizing, and questioning various aspects of our world through exploration and experimentation.
- There are many collaborative ways to solve a problem.
- We can explore and create original “artistic texts” in kinesthetic, visual, spatial, aural, and dramatic ways.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators’ Intentional Interactions
<p>23.1 use problem-solving skills and their imagination to create drama and dance (e.g., try out different voices for parts of a story or chant; find different ways to move to music, trying to connect the movement with the mood and speed of the music; create a sequence of movements)</p>	<p>Saying</p> <p>“I can march to the music. Hup, two, three, four.”</p> <p>“I made up a dance. My feet hop and skip and my arms go from side to side like this.”</p> <p>Doing</p> <p>A small group of children create a musical version of a favourite pattern book for the whole class to present at the school assembly.</p>	<p>Responding</p> <p>“Why did you decide to march to the music?”</p> <p>“How did other children move to that piece of music? Why do you think they moved differently from you?”</p> <p>Challenging</p> <p>“How can you change your dance while using the same movements?”</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>Two children decide to work with different rhythm instruments. One plays a rhythm and the other echoes it. They continue to try to represent each other's rhythm patterns.</p>	<p>Extending</p> <p><i>"Tell me how you would change this song so that it would help a baby go to sleep."</i></p>
<p>23.2 use problem-solving skills and their imagination to create visual art forms (<i>e.g., choose materials to make a three-dimensional structure stable; choose an alternative way to fasten their materials if the first way is unsuccessful</i>)</p>	<p>Saying</p> <p><i>"I found a way to stick these two together."</i></p> <p><i>"Our sculpture keeps falling apart."</i></p> <p><i>"I want to make the schoolyard look all bumpy."</i></p> <p>Doing</p> <p>The children construct a "school bus" from a large cardboard box. They create a stop sign and then try to figure out how to make it swing out from the side of the bus when the door is opened.</p> <p>Representing</p> <p>After listening to a piece of music, children use materials from the visual arts area to create art works to show how the music made them feel (<i>e.g., sad, happy, scared</i>).</p>	<p>Responding</p> <p><i>"I wonder how you could make sure your sculpture doesn't collapse."</i></p> <p><i>"I noticed that you are looking at the illustrations in the book we read this morning. How did the illustrator make the sidewalks look rough?"</i></p> <p>Challenging</p> <p><i>"How can you make the lights on your bus look as if they are flashing on and off?"</i></p> <p>Extending</p> <p>The educators discuss with the children the different techniques that children have used to portray feelings (<i>e.g., sad, happy, scared</i>) in their art works.</p>
<p>23.3 use problem-solving skills and their imagination to create music (<i>e.g., experiment with different instruments to create a rhythm pattern to accompany a familiar song; contribute to making a variation on a familiar song with the class</i>)</p>	<p>Saying</p> <p><i>"We tried it this way, and it didn't work, so we tried again and this is what it sounds like."</i></p> <p><i>"We changed this part so it sounds different."</i></p>	<p>Responding</p> <p><i>"How can you change your voice when we sing the song this time?"</i></p> <p><i>"What rhythms can we make with our bodies?"</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Doing</p> <p>A small group of children create a musical version of a favourite pattern book for the whole class to present at the school assembly.</p> <p>Representing</p> <p>Two children decide to work with different rhythm instruments. One plays a rhythm and the other echoes it. They continue to try to represent one another's rhythm patterns.</p>	<p>Challenging</p> <p><i>"We should use your song to share at our next assembly. You said you would like to add some instruments. Which ones would you like to add?"</i></p> <p>Extending</p> <p><i>"Tell me how you would change this song so that it would help a baby go to sleep."</i></p>
<p>23.4 communicate their understanding of something (e.g., a familiar story, an experience, a song, a play) by representing their ideas and feelings through the arts</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>"I'm making a picture of the girl in the story we read. I stuck the hair on straight out because in the story the wind was blowing."</i></p> <p><i>"I used the triangle to make the sound of the rain on our cabin roof."</i></p> <p><i>"I know a scary part is coming because of the music."</i></p> <p>Doing</p> <p>After viewing a close-up photograph of a goldfish, a child makes a playdough sculpture of the class's pet fish, using a pickup stick to make repeated curved lines for its scales. Later, in response to a challenge in the gym, the child tells the educator, <i>"This is how the goldfish in the picture swims in the water."</i></p>	<p>Responding</p> <p><i>"I notice that you are using your puppets to retell the story we read yesterday."</i></p> <p><i>"How will you make your mask look scary?"</i></p> <p><i>"How would you make happy music?"</i></p> <p>Challenging</p> <p><i>"How can you use colours to show how children in our class felt when ... (e.g., we were dancing, the class fish died, we were tired)?"</i></p> <p>A small group of children build a structure and then attach a visual representation at its base to respond to an educator who says, <i>"I wonder what is below the building."</i></p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>Representing</p> <p>A child makes his thinking visible to the educator: <i>“The actor who wore green pants and a green shirt and green socks and green shoes was supposed to be a frog. That was a good costume for a frog.”</i></p>	<p>Extending</p> <p>The educators work with a small group of children to explore how actors use their bodies and the volume and tone of their voices to help the audience understand the character they are playing. The children practise these techniques when rehearsing the play they have created.</p>

 **Professional Learning Conversation**

Re. SE23.4: The educators invite a parent who is an artist working in various media to discuss the educators’ plans to improve the Kindergarten visual arts program. Together, they map out a plan to provide opportunities for the children to explore photography and clay sculpture in addition to the usual painting and drawing. They also discuss plans for the parent/artist

to work with the educator team and the children on one day a week to broaden the educators’ knowledge about how to observe and assess the children’s accomplishments. Throughout the process, the educators work with the children to collect samples of their paintings, photographs, and sculptures for a “Gallery Opening” to be held at the end of the term.

OE24

As children progress through the Kindergarten program, they:

use technological problem-solving skills, on their own and with others, in the process of creating and designing (i.e., questioning, planning, constructing, analysing, redesigning, and communicating)

Conceptual Understandings

- Inventions change our relationship with the world.
- We use technology and design for different purposes.
- Function and design are interrelated.
- Safety is an important design consideration.

Making Thinking and Learning Visible – *Where both children and educators are observers and inquirers*

(Note: Children are not expected to demonstrate their learning in all three ways shown in column 2.)

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
<p>24.1 identify practices that ensure their personal safety and the safety of others, and demonstrate an understanding of the importance of these practices</p>	<p>Saying</p> <p><i>“That’s not safe!”</i></p> <p><i>“I need to wear my safety goggles when I work in the take-apart area.”</i></p> <p><i>“I’m going to get some paper towels to clean up the water we spilled so we don’t slip and fall down.”</i></p> <p>Doing</p> <p>A child “fixing” a car in the blocks area borrows a set of earphones (for “ear protectors”) from the listening station.</p> <p>A group of children who have made a snack for the class wash up the utensils and put them back in the storage basket.</p> <p>A child reminds another child to walk, not run, on the way to the library.</p> <p>Representing</p> <p>A group of children design a sign to remind those working at the sand table to sweep up the sand on the floor so others do not slip on it.</p>	<p>Responding</p> <p><i>“I noticed that you put the scissors back in the bin when you were finished using them.”</i></p> <p><i>“Why is it important to clean up water when it spills on the floor?”</i></p> <p><i>“Why does the custodian wear ear protectors when he mows the school lawn?”</i></p> <p>Challenging</p> <p>An educator displays a variety of safety items and devices (<i>e.g., various kinds of ear and eye protection, orange cones, child safety devices, pictures of familiar warning signs</i>). The children are invited to discuss questions such as who would use the devices and why, where they might commonly see the signs, and what message(s) they convey.</p> <p>Extending</p> <p>The children decide to make a “safe city” in the sand. The educators support the children and negotiate with them to determine what materials they will need throughout the construction process. The educators discuss with the class a safety problem they are having with the outdoor play</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		equipment. Together, the children and the educators determine how to make the slide a safer place to play.
24.2 state problems and pose questions as part of the process of creating and designing	<p>Saying</p> <p><i>"I want to build a house that looks just like mine."</i></p> <p><i>"I'm going to make something that can cook when you tell it what to cook."</i></p> <p><i>"I'm going to make an invention."</i></p> <p>Doing</p> <p>Children think aloud, posing questions to address problems and make choices as they build their houses: <i>"I wonder how I can make my door open like a real door."</i> <i>"I need to make windows for my house. What should I use?"</i></p> <p>Representing</p> <p>With help from the educators, the class draws up a list of questions that might be used to initiate a design challenge. The children categorize the questions as those that open up thinking (i.e., those that can lead to a rich investigation) or those that close thinking (i.e., those that are more likely to be answered with a simple "yes" or "no").</p>	<p>Responding</p> <p>The educators think together with the children about a design process. They prompt discussion to get at the concepts that items are created for different purposes and that the design of an item reflects its purpose. They continue to ask questions that will lead to further questions throughout the process. They listen to the children's contributions with respect and support them in finding answers to questions such as:</p> <p><i>"What does your house look like? What are some of its parts?"</i></p> <p><i>"How do you cook rice? How will you make that happen in your rice cooker?"</i></p> <p><i>"What is your invention going to do? How will your invention make something easier or better for someone else?"</i></p> <p>Challenging</p> <p>The educators and the children think together about the evolving design of toothbrushes. They watch videos of commercials for dental care products online. They notice how the design changes depending on who it is for.</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>Extending</p> <p>The children begin to wonder about other everyday items, such as chairs. They begin to think about and design chairs for different people and for different purposes.</p>
<p>24.3 make predictions and observations as part of the process of creating and designing</p> <p> See the Professional Learning Conversation following the chart.</p>	<p>Saying</p> <p><i>"If we use this scoop on our crane, it will fill the dump truck faster than the smaller scoop."</i></p> <p><i>"Here's my guess – I guess that the birds will like my birdhouse better than the others because mine has a bigger hole for them to get through."</i></p> <p><i>"I think that my design will keep it from falling over. Let's test it out."</i></p> <p>Doing</p> <p>A small group of children test out their predictions in the sand before incorporating the scoop into the creation of their crane.</p> <p>After researching birds that are common in their school community, some of the children change the design of their birdhouses.</p> <p>Representing</p> <p>The children record the number of big scoops and small scoops it takes to fill the pail. They</p>	<p>Responding</p> <p>The educators model predictive questions that invite children to construct a hypothesis about the outcome of an investigation: <i>"What will happen if...?"</i></p> <p>Challenging</p> <p>Once the children have made predictions, the educators challenge them to think of ways in which they can find out how accurate their predictions are. Children try out ideas to explore their predictions. The educators then ask the children to reflect both on the accuracy of their predictions, based on the results of their explorations, and on how making predictions helps their thinking and learning.</p> <p>Extending</p> <p>After discussing with the children the importance of thinking carefully about their predictions and making accurate observations, the educators</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>compare their findings to their predictions. Some of the children decide to see if the results would be different using water instead of sand.</p>	<p>arrange for the children to observe some of the Grade 6 students testing their paper airplanes to see which will fly the farthest. In order to measure growth in children's learning, the educators observe and note the children's predictions about which plane will fly the farthest and why, and what the children notice and say about the flights and the results of the tests.</p>
<p>24.4 select and use tools, equipment, and materials to construct things</p>	<p>Saying</p> <p><i>"I can see through the plastic wrap. I can't see through the tinfoil. So the plastic wrap would be better for my windows than the tinfoil."</i></p> <p><i>"I need a hole punch to make my book."</i></p> <p><i>"I used these blocks to make a vehicle that can drive on frozen lakes so that people can get across the lake safely."</i></p> <p>Doing</p> <p>A small group of children design a pulley system at the sand table to move sand with a machine instead of shovelling it by hand. They test it out using different amounts of sand and different sizes of scoops. The educators support their process by observing closely and inserting some prompts when the children pause to think.</p> <p>Representing</p> <p>As part of the design plan, children record in pictures and words which tools, equipment, and materials they used.</p>	<p>Responding</p> <p><i>"How will you decide which material is the best one to use for your windows?"</i></p> <p><i>"What other tools might you need to use to finish your book?"</i></p> <p><i>"I saw you change the design. What was your thinking?"</i></p> <p>Challenging</p> <p><i>"What materials will you need to change or add to adapt your design so it is safe for your baby brother?"</i></p> <p>Extending</p> <p>The educators decide to involve the Kindergarten class more authentically in the school's environmental education initiatives. After a class meeting to determine ways in which the children think they can be involved, the children decide to consider the impact on the environment when choosing tools, equipment, and materials for their designs. The educators</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
		<p>support the children's decision by ensuring that recycled materials and energy-saving tools are available for use throughout the learning areas in the classroom, and that children understand what goes in the recycling bin and what goes in the garbage.</p> <p><i>"I noticed you took some paper out of the recycling bin to sketch your design and again when you were making rugs for your house. Why did you do that?"</i></p> <p><i>"Why did you choose to use the glue stick rather than the low-temperature glue gun to attach your windows?"</i></p>
<p>24.5 communicate and record results and findings either individually or in groups (e.g., explain and/or show how they made their structure; record ideas using pictures, words, numbers on labels, or in charts)</p>	<p>Saying</p> <p><i>"When I pull the string, my toy moves."</i></p> <p><i>"We made our tower wider at the bottom so that we could build it taller. Now it doesn't fall down."</i></p> <p><i>"I tried this outside, and the wind made it spin. It worked."</i></p> <p><i>"I tested all three of the spinning tops, and this one spun the longest every time."</i></p> <p>Doing</p> <p>A small group of children make several attempts to build a tower as tall as they are. Through trial and error, they discover that if they make the bottom</p>	<p>Responding</p> <p><i>"Tell us how you solved the problem."</i></p> <p><i>"Show us how your device works."</i></p> <p>Challenging</p> <p><i>"How might what you found out this time change how you solve the problem next time?"</i></p> <p>Extending</p> <p>After making a little greenhouse for their seedlings, the children decide that they would like to share their construction with their families as well as with the other children. One child reminds the others of a commercial</p>

Specific Expectations <i>As children progress through the Kindergarten program, they:</i>	Ways in Which Children Might Demonstrate Their Learning	The Educators' Intentional Interactions
	<p>of the tower wider they can build it taller. They record the finished product in pictures and label the pictures to show their solution.</p> <p>Representing</p> <p>After creating a device for keeping their spinners from falling off the table, a group of children communicate their strategy to children who have been using dice that keep sliding off the table and changing the number that is rolled.</p> <p>The children playing the board game use the plan to keep their dice on the table and then improve on the device so the device can't be knocked off the table accidentally.</p>	<p>that is currently running on television. The group decide to perform a commercial showing how they made their greenhouse and how it works because they think a demonstration will be more interesting than just talking about their process. They ask the educators to make a video of their commercial so that it can be shared outside the classroom.</p>

 **Professional Learning Conversation**

Re. SE24.3: The educators meet to discuss what types of books might be added to some of the learning areas in the classroom. A team member notes that the children have been asking questions about how simple machines work. The educators decide to start by adding age-appropriate non-fiction

books about simple machines to the blocks area. The educators meet later to discuss how they can support the children's use of these books when they are working on their own designs.

APPENDIX: OVERALL EXPECTATIONS WITH RELATED SPECIFIC EXPECTATIONS

In this chart, the four “frames” in the Kindergarten program are represented by the four columns on the right, as follows:

BC – Belonging and Contributing

SRWB – Self-Regulation and Well-Being

DLMB – Demonstrating Literacy and Mathematics Behaviours

PSI – Problem Solving and Innovating

An **x** in a column indicates that the expectation is associated with that frame. An expectation may be associated with more than one frame.

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
1. communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts	X	X	X	X
1.1 explore sounds, rhythms, and language structures, with guidance and on their own			X	
1.2 listen and respond to others, both verbally and non-verbally (<i>e.g., using the arts, using signs, using gestures and body language</i>), for a variety of purposes (<i>e.g., to exchange ideas, express feelings, offer opinions</i>) and in a variety of contexts (<i>e.g., after read-alouds and shared reading or writing experiences; while solving a class math problem; in imaginary or exploratory play; in the learning areas; while engaged in games and outdoor play; while making scientific observations of plants and animals outdoors</i>)	X		X	X
1.3 use and interpret gestures, tone of voice, and other non-verbal means to communicate and respond (<i>e.g., respond to non-verbal cues from the educator; vary tone of voice when dramatizing; name feelings and recognize how someone else might be feeling</i>)		X	X	
1.4 sustain interactions in different contexts (<i>e.g., with materials, with other children, with adults</i>)			X	X
1.5 use language (verbal and non-verbal communication) in various contexts to connect new experiences with what they already know (<i>e.g., contribute ideas during shared or interactive writing; contribute to conversations in learning areas; respond to educator prompts</i>)			X	X
1.6 use language (verbal and non-verbal communication) to communicate their thinking, to reflect, and to solve problems		X	X	X
1.7 use specialized vocabulary for a variety of purposes (<i>e.g., terms for things they are building or equipment they are using</i>)			X	X

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
1.8 ask questions for a variety of purposes (e.g., for direction, for assistance, to innovate on an idea, to obtain information, for clarification, for help in understanding something, out of curiosity about something, to make meaning of a new situation) and in different contexts (e.g., during discussions and conversations with peers and adults; before, during, and after read-aloud and shared reading experiences; while exploring the schoolyard or local park; in small groups, in learning areas)		X	X	X
1.9 describe personal experiences, using vocabulary and details appropriate to the situation			X	X
1.10 retell experiences, events, and familiar stories in proper sequence (e.g., orally; in new and creative ways; using drama, visual arts, non-verbal communication, and representations; in a conversation)			X	X
1.11 demonstrate an awareness that words can rhyme, can begin or end with the same sound, and are composed of phonemes that can be manipulated to create new words			X	
2. demonstrate independence, self-regulation, and a willingness to take responsibility in learning and other endeavours		X		
2.1 demonstrate self-reliance and a sense of responsibility (e.g., make choices and decisions on their own; take care of personal belongings; know when to seek assistance; know how to get materials they need)		X		
2.2 demonstrate a willingness to try new experiences (e.g., experiment with new materials/tools; try out activities in a different learning area; select and persist with things that are challenging; experiment with writing) and to adapt to new situations (e.g., having visitors in the classroom, having a different educator occasionally, going on a field trip, riding the school bus)		X		
2.3 demonstrate self-motivation, initiative, and confidence in their approach to learning by selecting and completing learning tasks (e.g., choose learning tasks independently; try something new; persevere with tasks)		X		
2.4 demonstrate self-control (e.g., be aware of and label their own emotions; accept help to calm down; calm themselves down after being upset) and adapt behaviour to different contexts within the school environment (e.g., follow routines and rules in the classroom, gym, library, playground)		X		
2.5 develop empathy for others, and acknowledge and respond to each other's feelings (e.g., tell an adult when another child is hurt/sick/upset; have an imaginary conversation with a tree or an insect; role-play emotions with dolls and puppets)		X		
3. identify and use social skills in play and other contexts	X	X		
3.1 act and talk with peers and adults by expressing and accepting positive messages (e.g., use an appropriate tone of voice and gestures; give compliments; give and accept constructive criticism)	X	X		
3.2 demonstrate the ability to take turns during activity and discussions (e.g., while engaged in play with others; in discussions with peers and adults)		X		

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
3.3 demonstrate an awareness of ways of making and keeping friends (<i>e.g., sharing, listening, talking, helping, entering into play or joining a group with guidance from the educators</i>)		X		
4. demonstrate an ability to use problem-solving skills in a variety of contexts, including social contexts	X	X		X
4.1 use a variety of strategies to solve problems, including problems arising in social situations (<i>e.g., trial and error, checking and guessing, cross-checking – looking ahead and back to find material to add or remove</i>)	X	X		X
5. demonstrate an understanding of the diversity among individuals and families and within schools and the wider community	X			
5.1 demonstrate respect and consideration for individual differences and alternative points of view (<i>e.g., help a friend who speaks another language; adapt behaviour to accommodate a classmate's ideas</i>)	X			
5.2 talk about events and retell, dramatize, or represent stories or experiences that reflect their own heritage and cultural background and the heritage and cultural backgrounds of others (<i>e.g., traditions, cultural events, myths, Canadian symbols, everyday experiences</i>)	X			
6. demonstrate an awareness of their own health and well-being		X		X
6.1 demonstrate an understanding of the effects of healthy, active living on the mind and body (<i>e.g., choose a balance of active and quiet activities throughout the day; remember to have a snack; drink water when thirsty</i>)		X		X
6.2 investigate the benefits of nutritious foods (<i>e.g., nutritious snacks, healthy meals, foods from various cultures</i>) and explore ways of ensuring healthy eating (<i>e.g., choosing nutritious food for meals and snacks, avoiding foods to which they are allergic</i>)		X		X
6.3 practise and discuss appropriate personal hygiene that promotes personal, family, and community health		X		X
6.4 discuss what action to take when they feel unsafe or uncomfortable, and when and how to seek assistance in unsafe situations (<i>e.g., acting in response to inappropriate touching; seeking assistance from an adult they know and trust, from 911, or from playground monitors; identifying substances that are harmful to the body</i>)		X		X
6.5 discuss and demonstrate in play what makes them happy and unhappy, and why		X		X
7. participate actively and regularly in a variety of activities that require the application of movement concepts		X		
7.1 participate actively in creative movement and other daily physical activities (<i>e.g., dance, games, outdoor play, fitness breaks</i>)		X		

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
7.2 demonstrate persistence while engaged in activities that require the use of both large and small muscles (e.g., tossing and catching beanbags, skipping, lacing, drawing)		X		
7.3 demonstrate strategies for engaging in cooperative play in a variety of games and activities		X		
8. develop movement skills and concepts as they use their growing bodies to move in a variety of ways and in a variety of contexts		X		
8.1 demonstrate spatial awareness in activities that require the use of large muscles		X		
8.2 demonstrate control of large muscles with and without equipment (e.g., climb and balance on playground equipment; roll, throw, and catch a variety of balls; demonstrate balance and coordination during parachute games; hop, slide, wheel, or gallop in the gym or outdoors)		X		
8.3 demonstrate balance, whole-body and hand-eye coordination, and flexibility in movement (e.g., run, jump, and climb; walk on the balance beam; play beach-ball tennis; catch a ball; play hopscotch)		X		
8.4 demonstrate control of small muscles (e.g., use a functional grip when writing) while working in a variety of learning areas (e.g., sand table, water table, visual arts area) and when using a variety of materials or equipment (e.g., using salt trays, stringing beads, painting with paintbrushes, drawing, cutting paper, using a keyboard, using bug viewers, using a mouse, writing with a crayon or pencil)		X		
8.5 demonstrate spatial awareness by doing activities that require the use of small muscles		X		
9. demonstrate literacy behaviours that enable beginning readers to make sense of a variety of texts			X	X
9.1 use reading behaviours to make sense of familiar and unfamiliar texts in print (e.g., use pictures; use knowledge of oral language structures, of a few high-frequency words, and/or of sound-symbol relationships)			X	X
10. demonstrate literacy behaviours that enable beginning writers to communicate with others			X	X
10.1 demonstrate an interest in writing (e.g., choose a variety of writing materials, such as adhesive notes, labels, envelopes, coloured paper, markers, crayons, pencils) and choose to write in a variety of contexts (e.g., draw or record ideas in learning areas)			X	X
10.2 demonstrate an awareness that text can convey ideas or messages (e.g., ask the educator to write out new words for them)			X	X
10.3 write simple messages (e.g., a grocery list on unlined paper, a greeting card made on a computer, labels for a block or sand construction), using a combination of pictures, symbols, knowledge of the correspondence between letters and sounds (phonics), and familiar words			X	X

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
10.4 use classroom resources to support their writing (e.g., a classroom word wall that is made up of children’s names, words from simple patterned texts, and words used repeatedly in shared or interactive writing experiences; signs or charts in the classroom; picture dictionaries; alphabet cards; books)			X	X
10.5 experiment with a variety of simple writing forms for different purposes and in a variety of contexts			X	X
10.6 communicate ideas about personal experiences and/or familiar stories, and experiment with personal voice in their writing (e.g., make a story map of “The Three Little Pigs” and retell the story individually to a member of the educator team during a writing conference)			X	X
11. demonstrate an understanding and critical awareness of a variety of written materials that are read by and with their educators			X	
11.1 demonstrate an interest in reading (e.g., expect to find meaning in pictures and text; choose to look at reading materials; respond to texts read by the educator team; reread familiar text; confidently make attempts at reading)			X	
11.2 identify personal preferences in reading materials (e.g., choose fiction and non-fiction books, magazines, posters, or computerized interactive texts that they enjoy) in different contexts (e.g., educator team read-alouds, shared experiences in reading books, independent reading time)			X	
11.3 demonstrate an awareness of basic book conventions and concepts of print when a text is read aloud or when they are beginning to read print (e.g., start at the beginning of the book; recognize that print uses letters, words, spaces between words, and sentences; understand that printed materials contain messages)			X	
11.4 respond to a variety of materials that have been read aloud to them (e.g., paint, draw, or construct models of characters or settings)			X	
11.5 make predictions regarding an unfamiliar text that is read by and with the educator team, using prior experience, knowledge of familiar texts, and general knowledge of the world around them (e.g., use the cover pictures and/or title to determine the topic and/or text form)			X	
11.6 use prior knowledge to make connections (e.g., to new experiences, to other books, to events in the world) to help them understand a diverse range of materials read by and with the educator team			X	
11.7 use illustrations to support comprehension of texts that are read by and with the educator(s)			X	
11.8 demonstrate knowledge of most letters of the alphabet in different contexts (e.g., use a variety of capital and lower-case manipulative letters in letter play; identify letters by name on signs and labels in chart stories, in poems, in big books, on traffic signs; identify the sound that is represented by a letter; identify a word that begins with the letter)			X	

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
11.9 retell, orally or with non-verbal communication, familiar experiences or stories in proper sequence (e.g., in new and creative ways, using drama, visual arts, non-verbal communication, and representations; in a conversation)			X	
11.10 retell information from non-fiction materials that have been read by and with the educator team in a variety of contexts (e.g., read-alouds, shared reading experiences), using pictures and/or props			X	
12. demonstrate an understanding and critical awareness of media texts			X	
12.1 respond critically to animated works (e.g., cartoons in which animals talk, movies in which animals go to school)			X	
12.2 communicate their ideas, verbally and non-verbally, about a variety of media materials (e.g., describe their feelings in response to seeing a DVD or a video; dramatize messages from a safety video or poster; paint pictures in response to an advertisement or CD)			X	
13. use the processes and skills of an inquiry stance (i.e., questioning, planning, predicting, observing, and communicating)				X
13.1 state problems and pose questions in different contexts and for different reasons (e.g., before, during, and after inquiries)				X
13.2 make predictions and observations before and during investigations				X
13.3 select and use materials to carry out their own explorations				X
13.4 communicate results and findings from individual and group investigations (e.g., explain and/or show how they made their structure; state simple conclusions from an experiment; record ideas using pictures, numbers, and labels)				X
14. demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings			X	X
14.1 ask questions about and describe some natural occurrences, using their own observations and representations (e.g., drawings, writing)			X	
14.2 sort and classify groups of living and non-living things in their own way (e.g., using sorting tools such as hula hoops, sorting circles, paper plates, T-charts, Venn diagrams)				X
14.3 recognize, explore, describe, and compare patterns in the natural and built environment (e.g., patterns in the design of buildings, in flowers, on animals' coats)				X
15. demonstrate an understanding of numbers, using concrete materials to explore and investigate counting, quantity, and number relationships			X	
15.1 investigate (e.g., using a number line, a hundreds carpet, a board game with numbered squares) the idea that a number's position in the counting sequence determines its magnitude (e.g., the quantity is greater when counting forward and less when counting backward)			X	

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
15.2 investigate some concepts of quantity and equality through identifying and comparing sets with more, fewer, or the same number of objects (e.g., find out which of two cups contains more or fewer beans [i.e., the concept of one-to-one correspondence]; investigate the ideas of more, less, or the same, using concrete materials such as counters or five and ten frames; recognize that the last number counted represents the number of objects in the set [i.e., the concept of cardinality])			X	
15.3 make use of one-to-one correspondence in counting objects and matching groups of objects			X	
15.4 demonstrate an understanding of the counting concepts of stable order (i.e., the concept that the counting sequence is always the same – 1 is followed by 2, 2 by 3, and so on) and of order irrelevance (i.e., the concept that the number of objects in a set will be the same regardless of which object is used to begin the counting)			X	
15.5 subitize quantities to 5 without having to count, using a variety of materials (e.g., dominoes, dot plates, dice, number of fingers) and strategies (e.g., composing or decomposing numbers)			X	
15.6 use information to estimate the number in a small set (e.g., apply knowledge of quantity; use a common reference such as a five frame; subitize)			X	
15.7 explore and communicate the function/purpose of numbers in a variety of contexts (e.g., use magnetic and sandpaper numerals to represent the number of objects in a set [to indicate quantity]; line up toys and manipulatives, and identify the first, second, and so on [to indicate ordinality]; use footsteps to discover the distance between the door and the sink [to measure]; identify a favourite sports player: “My favourite player is number twenty-four” [to label or name])			X	
15.8 explore different Canadian coins, using coin manipulatives (e.g., role-play the purchasing of items at the store in the dramatic play area; determine which coin will purchase more – a loonie or a quarter)			X	
15.9 compose and decompose quantities to 10 (e.g., make multiple representations of numbers using two or more colours of linking cubes, blocks, dot strips, and other manipulatives; play “shake and spill” games)			X	
15.10 investigate addition and subtraction in everyday experiences and routines through the use of modelling strategies and manipulatives (e.g., join two sets of objects, one containing a greater number than the other, and count all the objects; separate out the smaller number of objects and determine how many remain) and counting strategies (e.g., use a counting sequence to determine how many objects there are altogether; count backward from the largest number to determine how many objects remain)			X	
See also OE20: SE20.1 and SE20.2				

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
16. measure, using non-standard units of the same size, and compare objects, materials, and spaces in terms of their length, mass, capacity, area, and temperature, and explore ways of measuring the passage of time, through inquiry and play-based learning			X	
16.1 select an attribute to measure (e.g., <i>capacity</i>), determine an appropriate non-standard unit of measure (e.g., <i>a small margarine container</i>), and measure and compare two or more objects (e.g., <i>determine which of two other containers holds the most water</i>)			X	
16.2 investigate strategies and materials used when measuring with non-standard units of measure (e.g., <i>why feet used to measure length must be placed end to end with no gaps and not overlapping, and must all be the same size; why scoops used to measure water must be the same size and be filled to the top</i>)			X	
17. describe, sort, classify, build, and compare two-dimensional shapes and three-dimensional figures, and describe the location and movement of objects through investigation			X	
17.1 explore, sort, and compare the attributes (e.g., <i>reflective symmetry</i>) and the properties (e.g., <i>number of faces</i>) of traditional and non-traditional two-dimensional shapes and three-dimensional figures (e.g., <i>when sorting and comparing a variety of triangles: notice similarities in number of sides, differences in side lengths, sizes of angles, sizes of the triangles themselves; see smaller triangles in a larger triangle</i>)			X	
17.2 communicate an understanding of basic spatial relationships (e.g., <i>use terms such as “above/below”, “in/out”, “forward/backward”; use visualization, perspective, and movements [flips/reflections, slides/translations, and turns/rotations]</i>) in their conversations and play, in their predictions and visualizations, and during transitions and routines			X	
17.3 investigate and explain the relationship between two-dimensional shapes and three-dimensional figures in objects they have made (e.g., <i>explain that the flat surface of a cube is a square</i>)			X	
See also OE20: SE20.3 and SE20.4.				
18. recognize, explore, describe, and compare patterns, and extend, translate, and create them, using the core of a pattern and predicting what comes next			X	
18.1 identify and describe informally the repeating nature of patterns in everyday contexts (e.g., <i>patterns in nature such as morning-noon-night, the four seasons, or the arrangement of leaves on the stem of a plant; the pattern on a piece of clothing; the pattern made by floor tiles; the pattern of words in a book or poem; the pattern on a calendar or in a schedule; the pattern of the beat or rhythm in songs</i>), using appropriate terminology (e.g., <i>“goes before”, “goes after”, “repeats”</i>) and gestures (e.g., <i>pointing, nodding, using slap/claps</i>)			X	

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
18.2 explore and extend patterns (e.g., fill in missing elements of a repeating pattern) using a variety of materials (e.g., beads, shapes, words in a poem, beat and rhythm in music, objects from the natural world)			X	
18.3 identify the smallest unit (the core) of a pattern (e.g., ABBABBABB – the core is ABB) and describe why it is important (e.g., it helps us to know what comes next; it helps us make generalizations)			X	
18.4 create and translate patterns (e.g., re-represent “red-blue-blue, red-blue-blue, red-blue-blue” as “circle-square-square, circle-square-square, circle-square-square”)			X	
19. collect, organize, display, and interpret data to solve problems and to communicate information, and explore the concept of probability in everyday contexts			X	
19.1 ask questions that can be answered through data collection (e.g., “What is your favourite ...?”; “How many pets do our classmates have?”; “Which month had the most snowy days – January or February?”), collect data, and make representations of their observations, using graphs (e.g., concrete graphs such as people graphs or graphs using representational objects; picture graphs)			X	
19.2 interpret data presented in graphs (e.g., “There are more children in the pizza line than in the hot dog line – that means more children like pizza”; “The blue bar is twice as long as the yellow bar”; “There were twice as many snowy days in January as snowy days in February”) and draw conclusions (e.g., “We need to order more pizza than hot dogs for play day”; “January was more snowy than February”)			X	
19.3 respond to and pose questions about data collection and graphs			X	
See also OE20: SE20.5 and SE20.6				
20. apply the mathematical processes to support the development of mathematical thinking, to demonstrate understanding, and to communicate thinking and learning in mathematics, while engaged in play-based learning and in other contexts*			X	X
20.1 demonstrate an understanding of number relationships for numbers from 0 to 10, through investigation (e.g., show small quantities using fingers or manipulatives)			X	X

*The specific expectations listed for OE20 are used as examples to illustrate that the mathematical processes are relevant to and embedded in all expectations that relate to demonstrating mathematics behaviours, regardless of their particular focus (e.g., on number sense and numeration or measurement or geometry and spatial sense).

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
20.2 use, read, and represent whole numbers to 10 in a variety of meaningful contexts (e.g., use a hundreds chart to read whole numbers; use magnetic and sandpaper numerals to represent the number of objects in a set; put the house number on a house built in the blocks area; find and recognize numbers in the environment; write numerals on imaginary bills at the restaurant in the dramatic play area)			X	X
20.3 compose pictures, designs, shapes, and patterns, using two-dimensional shapes; predict and explore reflective symmetry in two-dimensional shapes (e.g., visualize and predict what will happen when a square, a circle, or a rectangle is folded in half); and decompose two-dimensional shapes into smaller shapes and rearrange the pieces into other shapes, using various tools and materials (e.g., stickers, geoboards, pattern blocks, geometric puzzles, tangrams, a computer program)			X	X
20.4 build three-dimensional structures using a variety of materials and identify the three-dimensional figures their structure contains			X	X
20.5 investigate and describe how objects can be collected, grouped, and organized according to similarities and differences (e.g., attributes like size, colour)			X	X
20.6 use mathematical language (e.g., “always/sometimes/never”; “likely/unlikely”) in informal discussions to describe probability in familiar, everyday situations (e.g., “Sometimes Kindergarten children like pizza more than hot dogs”; “It is likely that January will be a snowy month”)			X	X
21. express their responses to a variety of forms of drama, dance, music, and visual arts from various cultures and communities			X	
21.1 express their responses to drama and dance (e.g., by moving, by making connections to their experiences with drama and dance, by talking about drama and dance)			X	
21.2 dramatize rhymes, stories, legends, and folk tales from various cultures and communities (e.g., use actions, pictures, words, or puppets to tell a story in the dramatic play area or in the blocks area)			X	
21.3 express their responses to music by moving, by making connections to their own experiences, or by talking about the musical form			X	
21.4 respond to music from various cultures and communities (e.g., folk songs, Indigenous chants, songs in different languages, Inuit throat singing)			X	
21.5 express their responses to visual art forms by making connections to their own experiences or by talking about the form			X	
21.6 respond to a variety of visual art forms (e.g., paintings, fabrics, sculptures, illustrations) from various cultures and communities			X	

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
22. communicate their thoughts and feelings, and their theories and ideas, through various art forms	X	X	X	X
22.1 communicate their ideas about something (e.g., a book, the meaning of a word, an event or an experience, a mathematical pattern, a motion or movement) through music, drama, dance, and/or the visual arts	X	X	X	X
23. use problem-solving strategies, on their own and with others, when experimenting with the skills, materials, processes, and techniques used in drama, dance, music, and visual arts				X
23.1 use problem-solving skills and their imagination to create drama and dance (e.g., try out different voices for parts of a story or chant; find different ways to move to music, trying to connect the movement with the mood and speed of the music; create a sequence of movements)				X
23.2 use problem-solving skills and their imagination to create visual art forms (e.g., choose materials to make a three-dimensional structure stable; choose an alternative way to fasten their materials if the first way is unsuccessful)				X
23.3 use problem-solving skills and their imagination to create music (e.g., experiment with different instruments to create a rhythm pattern to accompany a familiar song; contribute to making a variation on a familiar song with the class)				X
23.4 communicate their understanding of something (e.g., a familiar story, an experience, a song, a play) by representing their ideas and feelings through the arts				X
24. use technological problem-solving skills, on their own and with others, in the process of creating and designing (i.e., questioning, planning, constructing, analysing, redesigning, and communicating)				X
24.1 identify practices that ensure their personal safety and the safety of others, and demonstrate an understanding of the importance of these practices				X
24.2 state problems and pose questions as part of the process of creating and designing				X
24.3 make predictions and observations as part of the process of creating and designing				X
24.4 select and use tools, equipment, and materials to construct things				X
24.5 communicate and record results and findings either individually or in groups (e.g., explain and/or show how they made their structure; record ideas using pictures, words, numbers on labels, or in charts)				X

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
25. demonstrate a sense of identity and a positive self-image	X			
25.1 recognize personal interests, strengths, and accomplishments	X			
25.2 identify and talk about their own interests and preferences	X			
25.3 express their thoughts (e.g., about a science discovery, about something they have made) and share experiences (e.g., experiences at home, cultural experiences)	X			
26. develop an appreciation of the multiple perspectives encountered within groups, and of ways in which they themselves can contribute to groups and to group well-being	X			
26.1 understand that everyone belongs to a group/community (e.g., a family, a class, a religious community), and that people can belong to more than one group/community at a time	X			
26.2 understand that different groups/communities may have different ways of being and working together	X			
26.3 describe, both verbally and non-verbally, ways in which they contribute to the various groups to which they belong	X			
27. recognize bias in ideas and develop the self-confidence to stand up for themselves and others against prejudice and discrimination	X			
27.1 develop strategies for standing up for themselves, and demonstrate the ability to apply behaviours that enhance their personal well-being, comfort, and self-acceptance and the well-being, comfort, and self-acceptance of others (e.g., speaking confidently, stating boundaries, making choices)	X			
27.2 think critically about fair/unfair and biased behaviour towards both themselves and others, and act with compassion and kindness	X			
27.3 recognize discriminatory and inequitable practices and behaviours and respond appropriately	X			
28. demonstrate an awareness of their surroundings	X			
28.1 recognize people in their community and talk about what they do (e.g., farmer, park ranger, police officer, nurse, Indigenous healer, store clerk, engineer, baker)	X			
28.2 recognize places and buildings within their community, both natural and human-made, and talk about their functions (e.g., farm, church, hospital, mosque, sweat lodge, arena, mine, cave)	X			
28.3 develop an awareness of ways in which people adapt to the places in which they live (e.g., children in cities may live in high-rise buildings and use sidewalks and the subway; children in the country may take the bus to school)	X			

OVERALL EXPECTATIONS AND RELATED SPECIFIC EXPECTATIONS	BC	SRWB	DLMB	PSI
29. demonstrate an understanding of the natural world and the need to care for and respect the environment	X			
29.1 identify similarities and differences between local environments (<i>e.g., between a park and a pond, between a schoolyard and a field</i>)	X			
29.2 describe what would happen if something in the local environment changed (<i>e.g., if trees in the park were cut down, if the pond dried up, if native flowers were planted in the school garden</i>)	X			
29.3 identify ways in which they can care for and show respect for the environment (<i>e.g., feeding the birds in winter, reusing and recycling, turning off unnecessary lights at home, walking to school instead of getting a ride</i>)	X			
29.4 participate in environmentally friendly experiences in the classroom and the schoolyard (<i>e.g., plant and tend to plants; use local products for snack time; properly sort recycling</i>)	X			
30. demonstrate an awareness of themselves as dramatists, actors, dancers, artists, and musicians through engagement in the arts	X			
30.1 demonstrate an awareness of personal interests and a sense of accomplishment in drama and dance (<i>e.g., contribute their own ideas to role playing; create their own actions to accompany a song or chant and/or follow actions created by a classmate</i>); in music (<i>e.g., contribute their own ideas to a class song</i>); and in visual arts (<i>e.g., create a sculpture from clay</i>)	X			
30.2 explore a variety of tools, materials, and processes of their own choice (<i>e.g., blocks, puppets, flashlights, streamers, castanets, rhythm sticks, natural and recycled materials</i>) to create drama, dance, music, and visual art forms in familiar and new ways	X			
31. demonstrate knowledge and skills gained through exposure to and engagement in drama, dance, music, and visual arts	X			
31.1 explore different elements of drama (<i>e.g., character, setting, dramatic structure</i>) and dance (<i>e.g., rhythm, space, shape</i>)	X			
31.2 explore different elements (<i>e.g., beat, sound quality, speed, volume</i>) of music (<i>e.g., clap the beat of a song; tap their feet on carpet and then on tile, and compare the sounds; experiment with different instruments to accompany a song</i>)	X			
31.3 explore different elements of design (<i>e.g., colour, line, shape, texture, form</i>) in visual arts	X			

REFERENCES

Resources that can be accessed directly through links in the body of the document may not appear in this list.

ADEEWR (Australia Department of Education, Employment, and Workplace Relations). (2009). *Belonging, being and becoming: The early years learning framework for Australia*. Canberra, Commonwealth of Australia: Author. Retrieved January 15, 2016, from: http://docs.education.gov.au/system/files/doc/other/belonging_being_and_becoming_the_early_years_learning_framework_for_australia.pdf.

Alexander, C., and Ignjatovic, D. (November 27, 2012). Early childhood education has widespread and long lasting benefits. *TD Economics Special Report*. Retrieved March 15, 2016, from: http://www.td.com/document/PDF/economics/special/di1112_EarlyChildhoodEducation.pdf.

Ardell, D. (1982). *14 days to a wellness lifestyle*. Mill Valley, CA: Whatever Publishing.

Awartani, M., Whitman, V.C., & Gordon, J. (2007). *The voice of children: Student well-being and the school environment*. Middle East Pilot. Preliminary Survey Results: Palestine, Jordan and Lebanon. Ramallah, Palestine: Universal Education Foundation.

Awartani, M., Whitman, C., & Gordon, J. (2008, March). Developing instruments to capture young people's perceptions of how school as a learning environment affects their well-being. *European Journal of Education*, 43(1), 51–70.

Balfanz, R. (1999). Why do we teach children so little mathematics? Some historical considerations. In J.V. Copley (Ed.), *Mathematics in the early years* (pp. 3–10). Reston, VA: National Council of Teachers of Mathematics.

Barbanell, P. (2008, April). The importance of the A in literAcy. *Educator's Voice* (1), 30.

Baroody, A., Lai, M., & Mix, K. (2006). The development of young children's early number and operation sense and its implications for early childhood education. In B. Spodek & O. Saracho (Eds.), *Handbook of research on the education of young children* (2nd ed., pp. 187–221). London: Routledge.

Baumeister, R.F., & Vohs, K.D. (2011). *Handbook of self-regulation: Research, theory, and applications*. New York: Guilford Press.

Bernhard, J., Freire, M., and Mulligan, V. (2004). *Canadian Parenting Workshops*. Toronto: Chestnut.

Best Start Expert Panel on Early Learning. (2007). *Early learning for every child today: A framework for Ontario early childhood settings*. Toronto: Ministry of Children and Youth Services. Available at: www.edu.gov.on.ca/childcare/oelf/continuum/continuum.pdf.

Best Start Resource Centre. (2010). *Founded in culture: Strategies to promote early learning in First Nations children in Ontario*. Toronto: Author. Retrieved April 15, 2016, from: http://www.beststart.org/resources/hlthy_chld_dev/pdf/FC_K13A.pdf.

Bilmes, J. (2012). Chaos in Kindergarten. *Educational Leadership* (October), 32–35.

Birch, S., & Ladd, G. (1997). The teacher-child relationship and children's early school adjustment. *Journal of School Psychology*, 35(1), 61–79.

Bodrova, E., & Leong, D.J. (2008, March). Developing self-regulation in Kindergarten. In National Association for the Education of Young Children, *Beyond the journal – Young children on the web*. Retrieved November 20, 2015, from: http://www.naeyc.org/files/yc/file/200803/BTJ_Primary_Interest.pdf.

Booth, D., & Hachiya, M. (Eds.). (2004). *The arts go to school*. Markham, ON: Pembroke Publishers.

Booth Church, E. (n.d.). Learning through the arts. *Early Childhood Today*. Retrieved January 15, 2016, from: <https://www.scholastic.com/teachers/article/learning-through-arts>.

Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York: Basic Books.

Brietzke, R., & Peterson, K.D. (1994). *Building collaborative cultures: Seeking ways to reshape urban schools*. Urban Monograph Series. Oak Brook, IL: North Central Regional Educational Laboratory (NCREL). Retrieved January 15, 2016, from: <http://files.eric.ed.gov/fulltext/ED378286.pdf>.

Bringuier, J.-C. (1980). *Conversations with Jean Piaget*. Chicago: University of Chicago Press.

British Columbia Ministry of Education. (2008). *British Columbia early learning framework*. Victoria, BC: Ministry of Education, Ministry of Health, Ministry of Children and Family Development, & Early Advisory Group. Retrieved January 15, 2016, from: <http://www2.gov.bc.ca/gov/content/education-training/early-learning/teach/early-learning-framework>.

British Columbia Ministry of Education. (2009). *Understanding the British Columbia early learning framework: From theory to practice*. Retrieved January 15, 2016, from: <http://www2.gov.bc.ca/gov/content/education-training/early-learning/teach/early-learning-framework>.

Brochu, P., Deussing, M.-A., Houme, K., & Chuy, M. (2013). *Measuring up: Canadian results of the OECD PISA study*. Council of Ministers of Education, Canada (CMEC). Retrieved January 15, 2016, from: http://cmec.ca/Publications/Lists/Publications/Attachments/318/PISA2012_CanadianReport_EN_Web.pdf.

Bronson, M.B. (2000). *Self-regulation in early childhood: Nature and nurture*. New York: Guilford Press.

Brown, S. (2009). *Play: How it shapes the brain, opens the imagination and invigorates the soul*. New York: Avery.

Casey, B.M., Andrews, N., Schindler, H., Kersh, J.E., Samper, A., & Copley, J. (2008). The development of spatial skills through interventions involving block building activities. *Cognition and Instruction*, 26, 269–309.

Center on the Developing Child at Harvard University. (2007). *The science of early childhood development* (in brief). Retrieved March 15, 2016, from: <http://developingchild.harvard.edu/resources/inbrief-science-of-eecd/>.

Center on the Developing Child at Harvard University. (2011). *Building the brain's "air traffic control" system: How early experiences shape the development of executive function*. Working paper no. 11. Retrieved January 15, 2016, from: <http://developingchild.harvard.edu/resources/building-the-brains-air-traffic-control-system-how-early-experiences-shape-the-development-of-executive-function/>.

Center on the Developing Child at Harvard University. (n.d.). *In brief: The science of early childhood development: Brain architecture*. Retrieved March 15, 2016, from: <http://developingchild.harvard.edu/science/key-concepts/brain-architecture/>.

- Centre for Educational Research and Innovation. (2008). *21st century learning: Research, innovation and policy: Directions from recent OECD analyses*. Retrieved January 15, 2016, from: <http://www.oecd.org/site/educeri21st/40554299.pdf>.
- Chumak-Horbatsch, R. (2012). *Linguistically appropriate practice: A guide for working with young immigrant children*. Toronto: University of Toronto Press.
- Claessens, A., Duncan, G., & Engel, M. (2009). Kindergarten skills and fifth-grade achievement: Evidence from the ECLS-K. *Economics of Education Review*, 28, 415–27.
- Claessens, A., & Engel, M. (2011). How important is where you start? Early mathematics knowledge and later school success. Paper presented at the 2011 Annual Meeting of the American Educational Research Association (AERA). New Orleans: AERA. *Teachers College Record*, 115 (June 2013). Retrieved January 15, 2016, from: <http://www.tcrecord.org/Content.asp?ContentId=16980>.
- Clay, M.M. (2000). *Running records for classroom teachers*. Portsmouth, NH: Heinemann.
- Clements, D.H., & Sarama, J. (2009). *Learning and teaching early math: The learning trajectories approach*. New York: Routledge.
- Clements, D.H., & Sarama, J. (2011). Early childhood teacher education: The case of geometry. *Journal of Mathematics Teacher Education*, 14, 133–48.
- Clements, D.H., & Sarama, J. (2013). Rethinking early mathematics: What is research-based curriculum for young children? In L.D. English & J.T. Mulligan (Eds.), *Reconceptualizing early mathematics learning* (pp. 121–47). Berlin: Springer.
- Clements, D.H., & Sarama, J. (2014). The importance of the early years. In R.E. Slavin (Ed.), *Science, technology & mathematics (STEM)* (pp. 5–9). Thousand Oaks, CA: Corwin.
- Clinton, J. (2013a). The power of positive adult-child relationships: Connection is the key. *Think, feel, act: Lessons from research about young children*. Toronto: Queen's Printer for Ontario. Available at: <http://www.edu.gov.on.ca/childcare/positive.html>. Also available at: <http://www.edu.gov.on.ca/childcare/Clinton.pdf>.
- Clinton, J. (2013b). *Think, feel act: Lessons from research about young children. Positive relationships and brain development*. Video: *Connecting vs. directing*. Available at: <http://www.edu.gov.on.ca/childcare/positive.html>.
- CMEC (Council of Ministers of Education, Canada). (2011). *Canada's ministers of education move ahead on pan-Canadian priorities*. Press release, February 23. Retrieved January 15, 2016, from: http://cmec.ca/278/Press-Releases/Press-Releases-Detail/Canada-s-Ministers-of-Education-Move-Ahead-on-Pan-Canadian-Priorities.html?id_article=256.
- CMEC (Council of Ministers of Education, Canada). (2012). "Statement on play-based learning." Retrieved January 15, 2016, from: http://www.cmec.ca/Publications/Lists/Publications/Attachments/282/play-based-learning_statement_EN.pdf.
- Council for Learning outside the Classroom (Shrewsbury, UK). (2009). *Benefits for early years of learning outside the classroom*. Retrieved January 15, 2016, from: <http://www.lotc.org.uk/wp-content/uploads/2010/12/Benefits-for-Early-Years-LOtC-Final-5AUG09.pdf>.
- Crompton, M., & Jackson, R. (2004). *Spiritual well-being of adults with Down syndrome*. Southsea: Down Syndrome Educational Trust.
- Dartnell, L. (n.d.). Maths and art: The whistlestop tour. *Plus*. Retrieved April 15, 2016, from: https://plus.maths.org/content/os/issue33/features/dartnell_art/index.

deVries, E., Thomas, L., & Warren, E. (2007). Teaching mathematics and play-based learning in an Indigenous early childhood setting: Early childhood teachers' perspectives. *Playing with mathematics: Play in early childhood as a context for mathematical learning* (pp. 719–22). Fremantle, Western Australia: MERGA (Mathematics Education Reference Group of Australasia) Inc.

Dewey, J. (1938). *Experience and education*. New York: Macmillan.

Dickinson, D., & Neuman, S. (2005). *Handbook of early literacy research* (2nd ed.). New York: Guilford.

Donaldson, M., Grieve, R., and Pratt, C. (1983). *Early childhood development and education: Readings in psychology*. Oxford: Basil Blackwell.

Duncan, G.J., Dowsett, C.J., Claessens, A., Magnuson, K., Hutson, A.C., Klebanov, P., & Japel, C. (2007). School readiness and later achievement. *Developmental Psychology*, *43*, 1428–46.

Dyment, J.E., & Bell, A.C. (2008). Grounds for movement: Green school grounds as sites for promoting physical activity. *Health Education Research*, *23*(6), 952–62.

Earl, L., & Hannay, L. (2011). Educators as knowledge leaders. In J. Robertson & H. Timperley (Eds.), *Leadership and learning* (pp. 186–201). Thousand Oaks, CA: Sage.

Early Years Matters. (2016). Transitions. Early Years Foundation Stage (EYFS) website. Retrieved April 15, 2016, from: <http://earlyyearsmatters.co.uk/index.php/eyfs/positive-relationships/transitions/>.

Edwards, C., Gandini, L., & Forman, G. (Eds.). (1998). *Hundred languages of children: The Reggio Emilia approach to early childhood education* (2nd ed.). Toronto: Elsevier Science.

Eisenburg, N., & Mussen, P.H. (1989). *The roots of prosocial behaviour in children*. Cambridge: Cambridge University Press.

ELECT (*Early Learning for Every Child Today*). See Best Start Expert Panel on Early Learning (2007).

First Nation Trustees Council of the Ontario Public School Boards' Association. (2011). *Input on the draft curriculum for Ontario's Full-Day Early Learning–Kindergarten Program*. Toronto: Author.

First Nations Education Steering Committee. (n.d.). *First peoples principles of learning*. Retrieved January 15, 2016, from: <http://www.fnesc.ca/wordpress/wp-content/uploads/2015/05/PUB-LFP-POSTER-Principles-of-Learning-First-Peoples-poster-11x17.pdf>.

Fosnot, C.T. (2005a). Constructivism revisited: Implications and reflections. *The Constructivist*, *16*(1). Retrieved January 15, 2016, from: <http://www.uen.org/utahstandardsacademy/math/downloads/level-1/3-1-ConstructivismRevisited.pdf>.

Fosnot, C.T. (Ed.). (2005b). *Constructivism: Theory, perspectives, and practice* (2nd ed.). New York: Teachers College Press.

Frankel, E., & Underwood, K. (2012). Early intervention for young children. In I. Brown and M. Percy (Eds.), *Developmental disabilities in Ontario* (3rd ed.). Toronto: Ontario Association on Developmental Disabilities.

Fraser, S. (2012). *Authentic childhood: Experiencing Reggio Emilia in the classroom* (3rd ed.). Toronto: Nelson Education.

Freire, P. (1970). *Pedagogy of the oppressed*. New York: Continuum.

- FRP Canada (The Canadian Association of Family Resource Programs). (2011). *Family is the foundation: Why family support and early childhood education must be a collaborative effort*. Ottawa: Author. Retrieved January 15, 2016, from: <http://www.frp.ca/document/docWindow.cfm?fuseaction=document.viewDocument&documentid=995&documentFormatId=1731>.
- Fullan, M. (2013). *Great to excellent: Launching the next stage of Ontario's education agenda*. Retrieved January 15, 2016, from: <http://www.michaelfullan.ca/media/13599974110.pdf>.
- Fullan, M., & Hargreaves, A. (1991). *What's worth fighting for? Working together for your school*. Toronto: Ontario Public School Teachers' Federation.
- Fullan, M., & Langworthy, M. (2014). *A rich seam: How new pedagogies find deep learning*. New York: Pearson. Retrieved January 15, 2016, from: http://www.michaelfullan.ca/wp-content/uploads/2014/01/3897.Rich_Seam_web.pdf.
- g2g Outside. (2013). *The benefits of outdoor play*. Retrieved September 15, 2014, from: <https://g2goutside.wordpress.com/benefits-of-outdoor-play/>.
- Gandini, L. (1998). Educational and caring spaces. In C. Edwards, L. Gandini, & G. Forman (Eds.), *The hundred languages of children: The Reggio Emilia approach to early childhood education – Advanced reflections* (pp. 161–78). Norwood, NJ: Ablex.
- Gandini, L., & Kaminsky, J.A. (2004). Reflections on the relationship between documentation and assessment in the American context. An interview with Brenda Fyfe. *Innovations in Early Education: The International Reggio Exchange*, 11(1), 5–17. Retrieved March 20, 2016, from: <http://reggioalliance.org/downloads/reflectionsfyfe:gandinikaminsky.pdf>.
- Ginsberg, H.P. (2006). Mathematical play and playful mathematics: A guide for early education. In D. Singer, R.M. Golinkoff, & K. Hirsh-Pasek (Eds.), *Play = learning: How play motivates and enhances children's cognitive and social-emotional growth* (pp. 145–65). Oxford: Oxford University Press.
- Ginsburg, H., & Ertle, B. (2008). Knowing the mathematics in early childhood mathematics. In O.N. Saracho & B. Spodek (Eds.), *Contemporary perspectives in mathematics in early childhood education* (pp. 45–66). Charlotte, NC: Information Age Publishing.
- Ginsberg, H.P., Lee, J.S., & Boyd, J.S. (2008). Math education for young children: What it is and how to promote it. *Social Policy Report: Giving Child and Youth Development Knowledge Away*, 22(1), 3–23.
- Gopnik, A. (2011). Why preschool shouldn't be like school. *Slate Magazine* (1–2). Retrieved April 20, 2012, from: http://www.slate.com/articles/double_x/doublex/2011/03/why_preschool_shouldnt_be_like_school.html.
- Hadjioannou, X., & Fu, D. (2007). Critical literacy as a tool for preparing prospective educators for teaching in a multicultural world. *New England Reading Association Journal*, 43(2), 43–48.
- Hamre, B.K., & Pianta, R.C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72(2) (March/April), 625–38.
- Harwood, D. (2008). Deconstructing and reconstructing Cinderella: Theoretical defence of critical literacy for young children. *Language and Literacy* 10(2), 1–13.
- Hattie, J.A. (2008). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement* (1st ed.). New York: Routledge.
- Heard, G., & McDonough, J. (2009). *A place for wonder: Reading and writing nonfiction in the primary grades*. Portland, ME: Stenhouse Publishers.
- Heckman, J. (2008). The case for investing in disadvantaged young children. In First Focus (Ed.), *Big ideas for children: Investing in our nation's future* (pp. 49–58). Washington, DC: In Focus.

- Helm, J.H., Beneke, S., & Steinheimer, K. (2007). *Windows on learning: Documenting young children's work* (2nd ed.). New York: Teachers College Press.
- Hewes, J. (2006, November 8). *Let the children play: Nature's answer to early learning. Lessons in Learning*. Ottawa: Canadian Council on Learning.
- Hoffman, J. (2013). How biological states affect children's behaviour. (Written to accompany the book by Stuart Shanker, *Calm, alert, and learning: Classroom strategies for self-regulation* [Toronto: Pearson Canada]). Retrieved January 15, 2016, from: http://www.pearsoncanadaschool.com/media/canada/cal/1-1_HowBioStates.pdf.
- Hunting, R. (2010). Little people, big play and big mathematical ideas. In MERGA (Mathematics Education Reference Group of Australasia) 33, *Shaping the future of mathematics education* (pp. 725–30). 2010 Conference Report. Fremantle, Western Australia: MERGA Inc.
- Isenberg, J.P., & Quisenberry, N. (2002). A position paper of the Association for Childhood Education International – Play: Essential for all children. *Childhood Education* 79(1), 33–39.
- Jang, H., Reeve, J., & Deci, E.L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, 10(3), 588–600.
- Katz, S., & Dack, L.A. (2012). *Intentional interruption: Breaking down learning barriers to transform professional practice*. Thousand Oaks, CA: Corwin.
- Kellert, S.R. (2005). Reflections on children's experience of nature. *C&NN [Children & Nature Network] Leadership Writing Series*, 1(2), 1-5. Retrieved January 15, 2016, from: https://www.childrenandnature.org/wp-content/uploads/2015/04/LWS_Vol1_02.pdf.
- Kilpatrick, J., Swafford, J., & Findell, B. (Eds.). (2001). *Adding it up: Helping children learn mathematics*. Washington, DC: National Academy Press [National Research Council].
- Kohm, B., & Nance, B. (2009). Creating collaborative cultures. *Educational Leadership*, 67(2), 67–72.
- Kraft-Sayre, M.E., & Pianta, R.C. (2000). *Enhancing the transition to Kindergarten: Linking children, families, & schools*. Charlottesville, VA: University of Virginia, National Center for Early Development & Learning: Kindergarten Transition Studies. Retrieved January 15, 2016, from: <http://www.pakeys.org/uploadedContent/Docs/Transition%20into%20Formal%20Schooling/Enhancing%20the%20Transition%20to%20Kindergarten%20rev.PDF>.
- Libow Martinez, S., & Stager, G. (2013). *Invent to learn: Making, tinkering, and engineering in the classroom*. Torrance, CA: Constructing Modern Knowledge Press.
- Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin Books.
- Luke, A. (2007). *Learn, teach, lead*. Video: *The new literacies*. Retrieved January 15, 2016, from: <http://learnteachlead.ca/projects/allan-luke-the-new-literacies/?pcat=1084&sess=0>.
- Luke, A., & Freebody, P. (1997). The social practices of reading. In S. Muspratt, A. Luke, & P. Freebody. *Constructing critical literacies: Teaching and learning textual practice* (pp. 185–226). Cresskill, NJ: Hampton Press.

Luke, A., & Freebody, P. (1999). Further notes on the four resources model. *Reading Online* (pp. 1–4). Retrieved January 15, 2016, from: <http://kingstonnetworknumandlitteam.wikispaces.com/file/view/Further+Notes+on+t he+Four+Resources+Model-Allan+Luke.pdf>.

McLaughlin, M., & DeVoogd, G.L. (2013). *Critical literacy: Enhancing students' comprehension of text*. New York: Scholastic Teaching Resources.

Malaguzzi, L. (1993). For an education based on relationships. *Young Children*, 49(1), 9–12.

NAEYC (National Association for the Education of Young Children). (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8: A position statement of the National Association for the Education of Young Children*. Washington, DC: National Association for the Education of Young Children.

NAHO (National Aboriginal Health Organization). (2009, April). *Early childhood development and First Nations, Inuit and Métis children*. Fact sheet. Ottawa: Author. Retrieved November 20, 2015, from: <http://www.naho.ca/documents/naho/english/factSheets/earlyChildhood.pdf>.

New Brunswick Department of Education and Early Childhood Development. (2007). *For now. For life. Be ready: New Brunswick curriculum framework for early learning and child care*. Fredericton: Department of Social Development.

New Zealand Ministry of Education. (1996). *Te Whāriki: Early childhood curriculum*. Wellington: Learning Media Limited.

OECD/CERI (Organisation for Economic Co-operation and Development/ Centre for Educational Research and Innovation). (2008). *21st century learning: Research, innovation, and policy*. Retrieved January 15, 2016, from: <http://www.oecd.org/site/educeri21st/40554299.pdf>.

Ontario Ministry of Children and Youth Services. (2012). *Stepping stones: A resource on youth development*. Toronto: Author. Available at: www.children.gov.on.ca/htdocs/English/documents/topics/youthopportunities/steppingstones/SteppingStones.pdf.

Ontario Ministry of Education. (2007). *Supporting English language learners in Kindergarten: A practical guide for Ontario educators*. Toronto: Author.

Ontario Ministry of Education. (2010). *Growing success: Assessment, evaluation, and reporting in Ontario schools*. Toronto: Author. Available at: www.edu.gov.on.ca/eng/policyfunding/success.html.

Ontario Ministry of Education. (2011). *Getting started with student inquiry. Capacity Building Series*. Toronto: Author.

Ontario Ministry of Education. (2012). *Pedagogical documentation. Capacity Building Series, K–2*. Secretariat Special Edition 30. Toronto: Author.

Ontario Ministry of Education. (2014a). *Achieving excellence: A renewed vision for education in Ontario*. Toronto: Author.

Ontario Ministry of Education. (2014b). *Excerpts from ELECT: Foundational knowledge from the 2007 publication of “Early learning for every child today: A framework for Ontario early childhood settings”*. Toronto: Author.

Ontario Ministry of Education. (2014c). *How does learning happen? Ontario's pedagogy for the early years: A resource about learning through relationships for those who work with young children and their families*. Toronto: Author.

Ontario Ministry of Education. (2014d). *Understanding the whole child and youth – a key to learning: An interview with Dr. Lise Bisnaire, Dr. Jean Clinton, and Dr. Bruce Ferguson*. In *Conversation*, 4(4).

Ontario Ministry of Education. (2016). *Growing success – The Kindergarten addendum: Assessment, evaluation, and reporting in Ontario Schools*. Available at: www.edu.gov.on.ca/eng/policyfunding/success.html.

- OWP/P Architects, VS Furniture, & Bruce Mau Design. (2010). *The third teacher: 79 ways you can use design to transform teaching and learning* (1st ed.). New York: Harry N. Abrams.
- Pacini-Ketchabaw, V., Kocher, L., Sanchez, A., & Chan, C. (2009). Rhizomatic stories of immanent becomings and intra-activity: Professional development reconceptualized. In L. Iannacci & P. Whitty (Eds.), *Early childhood curricula: Reconceptualist perspectives* (pp. 87–119). Calgary, AB: Destilig.
- Partnership for 21st Century Skills. (2009). *Framework for 21st century learning*. Retrieved January 15, 2016, from: http://www.p21.org/storage/documents/P21_Framework.pdf.
- Pascal, C. (2009a). *Every child, every opportunity: Curriculum and pedagogy for the early learning program*. (A compendium report to C. Pascal, [2009], *With our best future in mind: Implementing early learning in Ontario*). Toronto: Queen's Printer for Ontario.
- Pascal, C. (2009b). *With our best future in mind: Implementing early learning in Ontario*. Toronto: Queen's Printer for Ontario.
- Pelo, A. (2009). A pedagogy for ecology. *Rethinking schools* website. Retrieved December 20, 2015 from: http://www.rethinkingschools.org/restrict.asp?path=archive/23_04/peda234.shtml.
- Perry, N.E., Phillips, L., & Dowler, J. (2004). Examining features of tasks and their potential to promote self-regulated learning. *Teachers College Record*, 106(9), 1854–1878.
- Ponitz, C.C., McClelland, M.M., Matthews, J.S., & Morrison, F.J. (2009). A structured observation of behavioral self-regulation and its contribution to Kindergarten outcomes. *Developmental Psychology*, 45(3) (May), 605–19.
- Rinaldi, C. (2004). The relationship between documentation and assessment. *Innovations in early education: The international Reggio Exchange*, 11(1), 1–4. Retrieved January 15, 2016, from: <http://reggioalliance.org/resources/innovations/>
- Rinaldi, C. (2006). *In dialogue with Reggio Emilia: Listening, researching and learning*. New York: Routledge.
- Rivkin, M. (1995). *The great outdoors: Restoring children's right to play outside*. Washington, DC: National Association for the Education of Young Children.
- Sarama, J., & Clements, D. (2008). Mathematics in early childhood. In O. Saracho & B Spodek (Eds.), *Contemporary perspectives on mathematics in early childhood education* (pp. 67–94). Charlotte, NC: Information Age Publishing.
- Sarama, J., & Clements, D. (2009a) Building blocks and cognitive building blocks: Playing to know the world mathematically. *American Journal of Play*, 1, 313–37.
- Sarama, J., & Clements, D.H. (2009b). *Early childhood mathematics education research: Learning trajectories for young children*. New York: Routledge.
- Saskatchewan Ministry of Education. (April 2008; reprint 2013). *Play and exploration: Early learning program guide*. Retrieved July 10, 2012, from: <http://www.education.gov.sk.ca/Default.aspx?DN=c711842e-23aa-4e82-b33d-4a530f8d4b2f>.
- Scottish Consultative Council on the Curriculum. (2012). *Curriculum framework for children 3–5*. Livingstone: Learning and Teaching Scotland.
- The sense of place. (2015). In website *The art of geography: Bringing the sense of place to life*. Retrieved November 30, 2015 from: <http://www.artofgeography.com/info/the-sense-of-place>.

- Seo, K-H., & Ginsburg, H.P. (2004). What is developmentally appropriate in early childhood mathematics education? Lessons from new research. In D.H. Clements, J. Sarama, & A.M. DiBiase (Eds.), *Engaging young children in mathematics: Standards for early childhood mathematics education* (pp. 91–104). Mahwah, NJ: Lawrence Erlbaum.
- Shanker, S.G. (2010). The development of self-regulation. Presentation delivered at People for Education Conference, York University, Toronto, November 13, 2010. Retrieved November 20, 2015, from: <http://www.peopleforeducation.ca/wp-content/uploads/2011/09/P4E-Conference-2010-Stuart-Shanker-Presentation.pdf>.
- Shanker, S. (2013a). *Calm, alert and happy*. Toronto: Queen's Printer for Ontario. Available at: <http://edu.gov.on.ca/childcare/selfRegulate.html>.
- Shanker, S.. (2013b). *Calm, alert and learning: Classroom strategies for self-regulation*. Toronto: Pearson Canada.
- Sophian, C. (2004). A prospective developmental perspective on early mathematics instruction. In D.H. Clements, J. Sarama, & A-M. DiBiase (Eds.), *Engaging young children in mathematics: Standards for early childhood mathematics education* (pp. 253–66). Mahwah, NJ: Lawrence Erlbaum.
- State of Victoria Department of Education and Early Childhood Development. (2009). *Numeracy in practice: Teaching, learning and using mathematics*. Paper no.18 (June). Melbourne: Author. Retrieved January 15, 2016, from: https://www.eduweb.vic.gov.au/edulibrary/public/publ/research/nws/Numeracy_in_practice_Paper_No_18.pdf.
- Steen, L.A. (Ed.). (2001). *Mathematics and democracy: The case for quantitative literacy*. The National Council on Education and the Disciplines. Retrieved January 15, 2016, from: <http://www.maa.org/sites/default/files/pdf/QL/MathAndDemocracy.pdf>.
- Sulzby, E., & Teale, W.H. (1991). Emergent literacy. In R. Barr, M.L. Kamil, P.B. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 727–57). White Plains, NY: Longman.
- Touhill, L., & Radich, J. (2012). Talking about practice: Environment makeover – Learning environments. A workshop delivered at Campbell Street Childcare and Early Education Centre, Australia. Retrieved March 15, 2016, from: <http://www.earlychildhoodaustralia.org.au/nqsplp/wp-content/uploads/2012/11/Environment-makeover-campbell-street-workshop-240312.pdf>.
- Trawick-Smith, J., & Dziurgot, T. (2010). Untangling teacher–child play interactions: Do teacher education and experience influence “good-fit” responses to children’s play? *Journal of Early Childhood Teacher Education*, 31(2), 106–28. London: Taylor and Francis.
- Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. San Francisco: Jossey-Bass.
- United Nations Human Rights Office of the High Commissioner. (1990). Article 31: Convention on the rights of the child. Retrieved January 14, 2016, from: <http://www.ohchr.org/en/professionalinterest/pages/crc.aspx>.
- Vasquez, V. (2003). *Negotiating critical literacies with young children*. Language, Culture, and Teaching Series. New York: Routledge/Lawrence Erlbaum Associates, Inc.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes* (rev. ed.). Boston: Harvard University Press.
- Wells, G. (2001). *Action, talk & text: Learning & teaching through inquiry*. New York: Teachers College Press.

Wheatley, G.H., Brown, D.L., & Solano, A. (1994). Long-term relationship between spatial ability and mathematical knowledge. In D. Kirshner (Ed.), *Proceedings of the sixteenth annual meeting North American chapter of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 225–31). Baton Rouge, LA: Louisiana State University.

Wien, C.A. (2005). Six short reasons why pedagogy matters in schools. *Canadian Children*, 30(1), 21.

Wien, C.A. (2013). Making learning visible through pedagogical documentation. In Ontario Ministry of Education, *Think, feel, act: Lessons from research about young children* (pp. 27–30). Toronto: Ontario Ministry of Education.

William, D. (2011). What is assessment for learning? *Studies in Educational Evaluation*, 37, 3–14.

Witmer, J.M., & Sweeney, T.J. (1998). Toward wellness: The goal of counseling. In T.J. Sweeney (Ed.), *Adlerian counseling: A practitioner's approach* (pp. 43–99). Philadelphia: Accelerated Development, Taylor & Francis Group.

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