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Term One Curriculum Newsletter
2020-2021

6/7A Math

6/7A- Grade 6

Math

Numbers, Patterns & Shapes in Everyday Life

Extending place value to one million and decimal thousandths

- identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and specify which growing patterns are linear
- read and represent whole numbers up to and including one million, using appropriate tools and strategies, and describe various ways they are used in everyday life
- create and describe patterns to illustrate relationships among whole numbers and decimal numbers

Facts, Expressions & Equations including Area of Various Shapes

- add monomials with a degree of 1 that involve whole numbers, using tools
- use the properties of operations, and the relationships between operations, to solve problems involving whole numbers, decimal numbers, fractions, ratios, rates, and whole number percents, including those requiring multiple steps or multiple operations
- evaluate algebraic expressions that involve whole numbers and decimal tenths
- solve equations that involve multiple terms and whole numbers in various contexts, and verify solutions

Number Patterns and Number Relationships

Finding factors
- understand the divisibility rules and use them to determine whether numbers are divisible by 2, 3, 4, 5, 6, 8, 9, and 10
- represent composite numbers as a product of their prime factors, including through the use of factor trees
- round decimal numbers, both terminating and repeating, to the nearest tenth, hundredth, or whole number, as applicable, in various contexts

Working with integers
- read and represent integers, using a variety of tools and strategies, including horizontal and vertical number lines
- compare and order integers, decimal numbers, and fractions, separately and in combination, in various contexts
- plot and read coordinates in all four quadrants of a Cartesian plane, and describe the translations that move a point from one coordinate to another

Data, and Introduction to Mathematical Modelling

Collecting, organizing, and representing data

- describe the difference between discrete and continuous data, and provide examples of each
- collect qualitative data and discrete and continuous quantitative data to answer questions of interest about a population, and organize the sets of data as appropriate, including using intervals
- select from among a variety of graphs, including histograms and broken-line graphs, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs
- create an infographic about a data set, representing the data in appropriate ways, including in tables, histograms, and broken-line graphs, and incorporating any other relevant information that helps to tell a story about the data
- determine the range as a measure of spread and the measures of central tendency for various data sets, and use this information to compare two or more data sets
- analyse different sets of data presented in various ways, including in histograms and broken-line graphs and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions

Posing a real-life situation that requires the process of mathematical modelling and involves the collection, organization, representation and analysis of data.
- apply the process of mathematical modelling to represent, analyse, make predictions, and provide insight into real-life situations

Transformations & Coding

Creating, describing, and performing transformations
- describe and perform combinations of translations, reflections, and rotations up to 360 on a grid, and predict the results of these transformations
- plot and read coordinates in all four quadrants of a Cartesian plane, and describe the translations that move a point from one coordinate to another
- solve problems and create computational representations of mathematical situations by writing and executing efficient code, including code that involves conditional statements and other control structures
- read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code

Comparison of Measures,Quantities & Expressions

Comparing measures spatially
- construct three- dimensional objects when given their top, front, and side views
- create and use nets to demonstrate the relationship between the faces of prisms and pyramids and their surface areas
- determine the surface areas of prisms and pyramids by calculating the areas of their two-dimensional faces and adding them together
- Comparing measures using standard units
- use a protractor to measure and construct angles up to 360, and state the relationship between angles that are measured clockwise and those that are measured counterclockwise
- use the properties of supplementary angles, complementary angles, opposite angles, and interior and exterior angles to solve for unknown angle measures
- measure length, area, mass, and capacity using the appropriate metric units, and solve problems that require converting smaller units to larger ones and vice versa

Comparing integers, fractions, and decimal numbers
- read, represent, compare, and order decimal numbers up to thousandths, in various contexts

- compare and order integers, decimal numbers, and fractions, separately and in combination, in various contexts
- describe relationships and show equivalences among fractions and decimal numbers up to thousandths, using appropriate tools and drawings, in various contexts

Comparing two expressions
- solve inequalities that involve two operations and whole numbers up to 100, and verify and graph the solutions

6/7A- Grade 7

Math

Numbers, Patterns & Shapes in Everyday Life

Extending the range of numbers
- represent and compare whole numbers up to and including one billion, including in expanded form using powers of ten, and describe various ways they are used in everyday life
- read, represent, compare, and order rational numbers, including positive and negative fractions and decimal numbers to thousandths, in various contexts
- evaluate and express repeated multiplication of whole numbers using exponential notation, in various contexts

Using characteristics to classify
- identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing patterns on the basis of their constant rates and initial values
- describe and classify cylinders, pyramids, and prisms according to their geometric properties, including plane and rotational symmetry

Facts, Expressions, Equations & Inequalities

Working with square numbers
- identify and represent perfect squares, and determine their square roots, in various contexts

Use patterning and the application of addition and subtraction facts of whole numbers to integers
- create and describe patterns to illustrate relationships among integers
- use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of integers
- solve inequalities that involve multiple terms and whole numbers, and verify and graph the solutions

Checking solutions is an application of evaluating algebraic expressions
- add and subtract monomials with a degree of 1 that involve whole numbers, using tools
- evaluate algebraic expressions that involve whole numbers and decimal numbers
- solve equations that involve multiple terms, whole numbers, and decimal numbers in various contexts, and verify solutions

Transformations & Coding

Creating, describing, and performing transformations

- solve problems and create computational representations of mathematical situations by writing and executing efficient code, including code that involves events influenced by a defined count and/or sub- program and other control structures
- read and alter existing code, including code that involves events influenced by a defined count and/or sub- program and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code
- perform dilations and describe the similarity between the image and the original shape
- describe and perform translations, reflections, and rotations on a Cartesian plane, and predict the results of these transformations

Data & Introduction to Mathematical Modelling

Collecting, organizing, and representing data
- explain why percentages are used to represent the distribution of a variable for a population or sample in large sets of data, and provide examples
- collect qualitative data and discrete and continuous quantitative data to answer questions of interest, and organize the sets of data as appropriate, including using percentages
- select from among a variety of graphs, including circle graphs, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs
- construct circles when given the radius, diameter, or circumference
- create an infographic about a data set, representing the data in appropriate ways, including in tables and circle graphs, and incorporating any other relevant information that helps to tell a story about the data

Analysing data using measures of central tendency, and shape and distribution
- determine the impact of adding or removing data from a data set on a measure of central tendency, and describe how these changes alter the shape and distribution of the data
- analyse different sets of data presented in various ways, including in circle graphs and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions

Posing a real-life situation that requires the process of mathematical modelling and involves the collection, organization, representation and analysis of data.*
- apply the process of mathematical modelling to represent, analyse, make predictions, and provide insight into real-life situations**

Proportionality

Using proportional reasoning
- understand and recall commonly used percents, fractions, and decimal equivalents
- use mental math strategies to increase and decrease a whole number by 1%, 5%, 10%, 25%, 50%, and 100%, and explain the strategies used
- identify proportional and non-proportional situations and apply proportional reasoning to solve problems

Use factors and multiples to create equivalent fractions
- determine the greatest common factor for a variety of whole numbers up to 144 and the lowest common multiple for two and three whole numbers
- generate fractions and decimal numbers between any two quantities
- add and subtract fractions, including by creating equivalent fractions, in various contexts
- use equivalent fractions to simplify fractions, when appropriate, in various contexts

Developing fluency with operations

- multiply and divide fractions by fractions, using tools in various contexts
- convert between fractions, decimal numbers, and percents, in various contexts
- multiply and divide decimal numbers by decimal numbers, in various contexts
- identify and compare exchange rates, and convert foreign currencies to Canadian dollars and vice versa