

SNC 1D: Ecology Review

W12

Questions 1 to 4 are all based on this food web!!

1. Look at the food web to the right and identify:

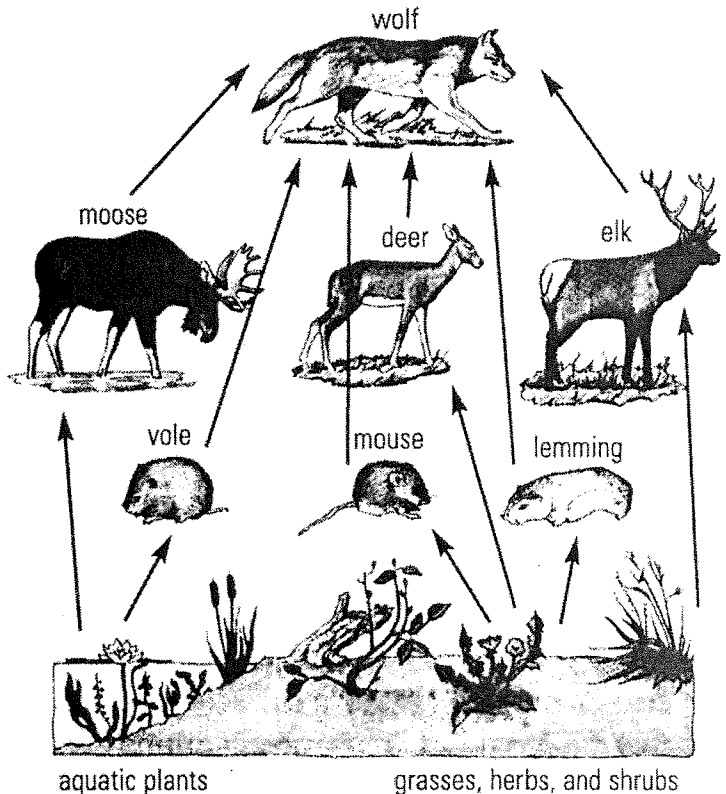
a) one producer = grasses

b) one consumer = vole

c) one carnivore = wolf

d) one herbivore = moose

e) the top carnivore = wolf



2. In the space below, write an example of a food chain that is present within this food web.

grasses → deer → wolf

3. Identify two abiotic factors in the food web.

water, air, Sun, wind, soil (anything not living)

Identify two biotic factors in the food web.

grasses, aquatic plants, deer, elk (many others – anything living)

4. Mange is a disease that causes the fur to fall out of wolves. As a result, many wolves freeze to death during the winter months.

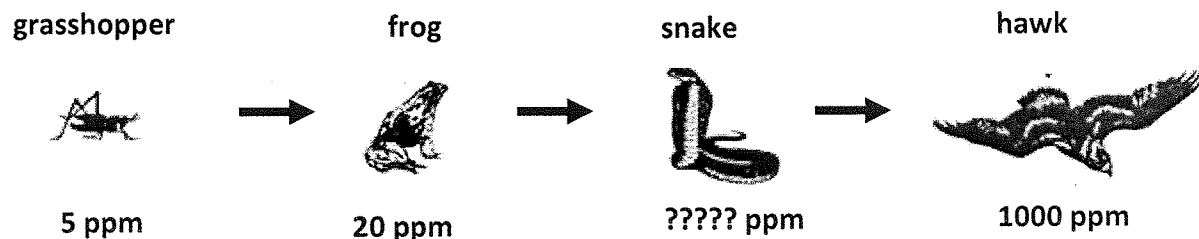
a) Predict what would happen to the population of moose in an area where mange in wolves is a big problem.

The population of moose would increase because there would be fewer wolves eating them (they have frozen to death)

b) Predict what would happen to the population of grasses, herbs and shrubs in an area where mange in wolves is a big problem.

The population of grasses, herbs, and shrubs would decrease because there is more herbivores (moose, deer, elk) eating them.

5. Below are the values, in ppm, of a pesticide in a terrestrial food chain.



a) How many grasshoppers did the frog eat to have 20 ppm of a pesticide?

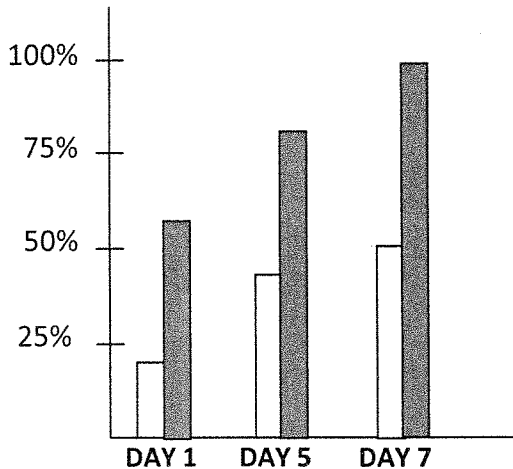
4 grasshoppers (5 ppm each x 4 eaten = 20 ppm)

b) How many ppm will the snake have if it eats 10 frogs? 200 ppm

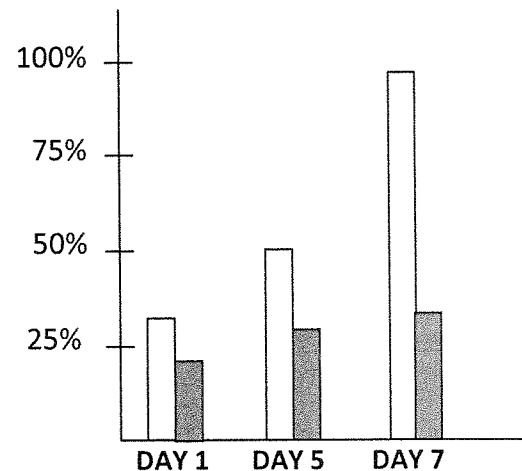
(20 ppm per frog x 10 eaten = 200 ppm)

6. The graphs below are from a lab that germinated Mung Beans. The control is the WHITE BAR and the variable is the SHADED BAR.

□ CONTROL: Germinated at 22°C
■ VARIABLE: Germinated at 30°C



□ CONTROL: Germinated in WATER
■ VARIABLE: Germinated at ACID



- a) Did germinating seeds at a temperature higher than 22°C increase the % of seeds germinated (i.e. did more seeds germinated at 30°C compared to the seeds germinated at 22°C)? What is your proof, use numbers from the graph.

Yes more seeds germinated at 30°C than 22°C. On Day 7 100% of the seeds had germinated at 30°C compared to only 50% at 22°C.

- b) Did germinating seeds in acid increase the % of seeds germinated (i.e. did more seeds germinated in acid compared to the seeds germinated in water)? What is your proof, use numbers from the graph above.

No, germinating seeds in acid did not increase the percentage of seeds germinated, it actually decreased germination percentage. On Day 7, only ~30% of the seeds had germinated in acid compared to 100% of the seeds germinated in water.

7. Write out the chemical reaction for photosynthesis.

carbon dioxide + water + energy (sunlight) → sugar + oxygen

8. Write out the chemical reaction for respiration.

sugar + oxygen → carbon dioxide + water + energy

9. The lithosphere is the part of the biosphere made up of a layer of gases. T F

10. The LIVING THINGS in an ecosystem are called abiotic factors. T F

11. CONSUMERS make their own food. T F

12. Plants take in CARBON DIOXIDE and release OXYGEN. T F

13. A HERBIVORE is an animal that feeds on other animals. T F

14. Complete the following table.

Vocabulary Words		Choices
abiotic	D	A) maximum number of species an ecosystem can support.
photosynthesis	E	B) an organism that makes its own food through photosynthesis.
food chain	H	C) number of different organisms in an area
Population	G	D) non-living factors in ecosystems
biosphere	E	E) the space on Earth where all life exists
carrying capacity	A	F) process of producing sugar from carbon dioxide, water, and sunlight
producer	B	G) a group of members of the same species that live in the same area
biodiversity	C	H) the transfer of energy from one organism to the next.