

Grade 9 Science: Food Web Assignment

1. From the pictures of organisms provided, choose 9 – 10 species that could live together in a particular ecosystem.
2. On a sheet of blank paper, arrange your chosen species in trophic levels. Before you glue your species onto the page, check:
 - a. Do your consumers have a variety of food to eat?
 - b. Have you included a decomposer?
3. Draw arrows to show the direction of energy flow from species to species, beginning with energy flowing from the sun. (Remember, the arrow points TO the hungry species.) Colour code your food web. Draw a green border around all of the producers in your food web. Choose appropriate colours for the other organisms as well (primary, secondary, and tertiary consumers), and create a legend to identify them.
4. Label each consumer as an herbivore, carnivore, omnivore, decomposer, or scavenger.
5. On your food web, draw or describe at least three abiotic factors found in the ecosystem.
6. Once your food web is complete, answer the questions on the back of this page.

Evaluation:

Criteria	Level 4	Level 3	Level 2	Level 1	Level R
Contains sufficient species and abiotic factors	11+ species; 4+ abiotic factors	9 – 10 species; 3 abiotic factors	7 – 8 species; 2 abiotic factors	5 – 6 species; 1 abiotic factor	Insufficient organisms to demonstrate a food chain or web; no abiotic factors
Chooses and connects suitable species	Includes producers, consumers, and decomposers. Most organisms are connected to multiple other organisms through realistic feeding relationships	Includes producers, consumers, and decomposers. Many organisms are connected to multiple others through realistic feeding relationships	Includes producers, consumers, and decomposers. Some feeding relationships may not be realistic and/or few species have multiple connections	May be missing one class of species. A few feeding relationships may be realistic and/or very few species have multiple connections	Missing one or more classes of species. Realistic feeding relationships are not shown. Species do not have multiple connections
Labels and colour codes	All present and correct	Mostly present and correct	Some are missing and / or incorrect	Many are missing and / or incorrect	Most / all are missing and / or incorrect
Neatness and Organization	Exceptionally attractive in terms of design, layout, and neatness. All organisms are appropriately placed in their trophic levels.	Attractive in terms of design, layout, and neatness. Most organisms are placed in their proper trophic levels.	Acceptable. Generally attractive, but some parts may be a bit messy or disorganized. Some organisms are placed in their proper trophic levels.	Many messy or disorganized parts. Trophic levels are difficult to identify.	No discernable organization. Illegible and / or unattractive.
Answers to questions	Complete and correct.	Mostly complete and correct	Somewhat complete and correct	Limited completion / correctness	Incomplete and / or incorrect answers

- a. Your food web should contain a number of food chains, all interwoven together. In the space below, write out two different food chains that form parts of your food web.

- b. What would happen to the other species in the **food chain** you drew above (in part a) if the population of decomposers suddenly
 - i. increased?

 - ii. decreased?

- c. What would happen to the other species in your **food web** if that same species suddenly
 - i. increased?

 - ii. decreased?

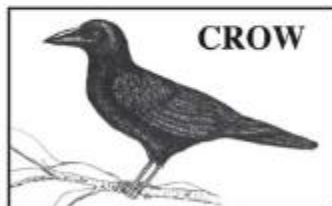
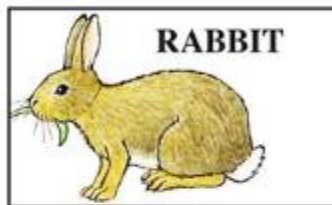
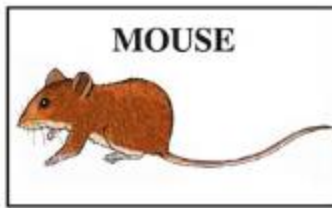
- d. If you were to eliminate one group of plants or animals from the food web, which would have the greatest impact? Why?

- e. Provide at least 5 examples of human activities or natural disasters that could affect your food web.

- f. Do you think there are more food chains or food webs in nature? Explain.

- g. Where do humans fit into most food chains?

- h. Which organism is most important in your food web? Why?



What do I eat?

mouse — grass, plants, mushrooms, berries

rabbit — grass, plants, mushrooms, berries, tree buds

raccoon — mushrooms, fish, mouse, bird eggs, berries, nuts and cones

squirrel — grass, plants, mushrooms, berries, nuts and cones

bear — mushrooms, fish, berries, nuts, mouse, grasshopper, rabbit, chipmunk, squirrel

fox — bird eggs, berries, nuts, mouse, grasshopper, rabbit, chipmunk, squirrel

eagle — mouse, rabbit, chipmunk, squirrel, snake, small raccoon, baby weasel

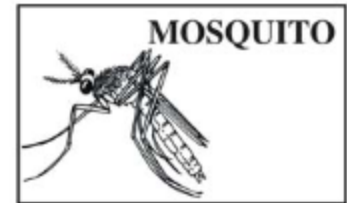
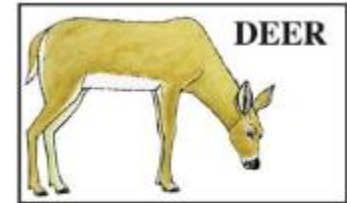
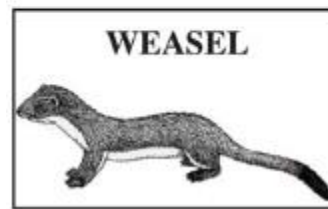
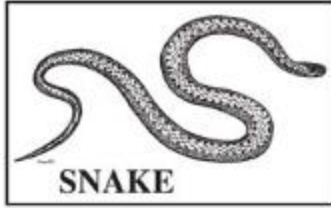
chipmunk — grass, plants, mushrooms, berries, nuts and cones

falcon — crow (small birds), mice, grasshopper

bobcat — squirrels, rabbits, chipmunks, foxes, mice

coyote — deer, rabbits, mice, squirrels, and other animals, as well as animal carcasses

crow — mushrooms, grasshopper, berries, nuts & cones



What do I eat?

snake — mouse, grasshopper

deer — grass, plants, mushrooms, berries

grasshopper — grass, plants, berries

weasel — mouse, grasshopper, rabbit, chipmunk, squirrel

owl — mice, chipmunks, and occasionally foxes and weasels

mosquito — blood

mushrooms — dead or decaying organisms