Building and Working with Food Webs

1. For each organism in the chart, use the information in the **Food Source** column provided to fill in the **Niche** column using the codes below:
   P = Producer; **H** = Herbivore; **O** = Omnivore; **C** = Carnivore; **D** = Decomposer/Detritivore
2. Build a food web for the organisms in the chart. Choose 3 Producers and space them out evenly along the long bottom edge of your page. If you want, you could use a different color for each food chain that begins with a specific producer
3. Check the **Food Source** column to find organisms that eat each of your Producers. Add them to the web.
4. Connect organisms with an **arrow (meaning "is eaten by") pointing from the one being eaten to the one eating it.**
5. Use **each organism only once**, even if it is needed in more than one chain. Simply draw an arrow to where the organism already appears. Your chains will develop into a more complex web, showing how organisms are interdependent. You will not need every single organism in the chart – it depends which producers you chose. When the animal is filling the niche of scavenger, write [dead] beside the food source (*e.g.*, great-horned owl [dead] → skunk)
6. Each chain is finished when you can't find anything that eats certain animals. These are top predators.

Questions
1. Autotrophs and Heterotrophs:

	Name 3	How can you be sure they're in this category?	What trophic level do they fill?
Autotrophs			
Primary Consumers			
Secondary Consumers			
Tertiary Consumers			
Quaternary Consumers			

2. a) How do you identify a top carnivore?
b) Name all of the top carnivores in your web.

3. a) Carnivores may be predators or scavengers and some are both. Scavengers are animals that eat carrion (dead animals) List the animals that are predators.
b) List the animals that are scavengers.

4. a) What is the difference between a decomposer and a detritivore?
b) Name all of the decomposers and detritivores in your web.

5. a) Does your web have high or low biodiversity? How can you tell?
b) Why is high biodiversity important in an ecosystem?
c) A **keystone species** is a species that keeps the ecosystem in balance. Which organisms do you consider to be keystone species?

6. Certain organisms play important roles in food webs and removing them would change the web significantly.
a) What would be the effect of eliminating the skunk and the crow from the food web?
b) What would be the effect of eliminating bacteria from the food web?
c) What would be the effect of eliminating producers from the food web?
d) What would be the effect of eliminating predators from the food web?

Niche	Organism	Food Source
	Algae	Photosynthesis
	Bacteria	Dead plants or animals; living plants or animals
	Bear	Insects, fruit, young birds, eggs, rodents, dead animals
	Cattails	Photosynthesis
	Cottontail rabbit	Grasses & other green plants
	Crayfish	Insect larvae, snails, tadpoles, and water plants
	Cricket	Plant material, other insects, and dead animals
	Crow	Seeds, grass, fruits, insects, frogs, birds, eggs, small mammals, and dead animals
	Dandelion	Photosynthesis
	Daphnia (water flea)	Bacteria, algae
	Fox	Small mammals, birds, eggs, fruits, and insects
	Frog	Slugs, snails, beetles, wood lice, caterpillars, spiders, centipedes, mites, crayfish
	Fungi	Dead plant or animal matter
	Grass	Photosynthesis
	Gypsy moth larvae	Oak trees
	Meadow vole	Grasses, bark, and insects
	Millipedes	Grasses and other green plants
	Mink	Crayfish, frogs, fish, small mammals, birds, and dead animals
	Muskrat	Roots and leaves of water plants, sometimes crayfish and fish
	Minnow	Small aquatic insects, daphnia, and smaller fish
	Deer mouse	Seeds, fruits, and insects
	Oak tree	Photosynthesis
	Great-horned owl	Frogs, birds, fish, rabbits, muskrats, voles, rodents, and skunks
	Raccoon	Fruit, nuts, corn, insects, grain, eggs, and crayfish
	Timber rattlesnake	Frogs, rabbits, fish, eggs, rodents
	Skunks	Insects, mice, frogs, eggs, small birds, crayfish, leaves, grain, and dead animals
	Skylark	Seeds, leaves, worms, insects, millipedes, and spiders
	Snail	Bacteria, algae, and plants
	Spider vole (rodent)	Grasses and other green plants
	Tadpole	Bacteria, daphnia, and algae
	Water lily	Photosynthesis
	Wild plum tree	Photosynthesis
	Wood duck	Seeds and leaves of water plants and cattails

Food Web Scoring Rubric			
	3	2	1
Required Elements	3 producers chosen	2 producers chosen	1 producer chosen
Connections	Chains interconnect many ways – no noticeable missing links	Chains interconnect some but noticeable connections are missing or incorrect	Chains are missing many connections or do not interconnect at all