

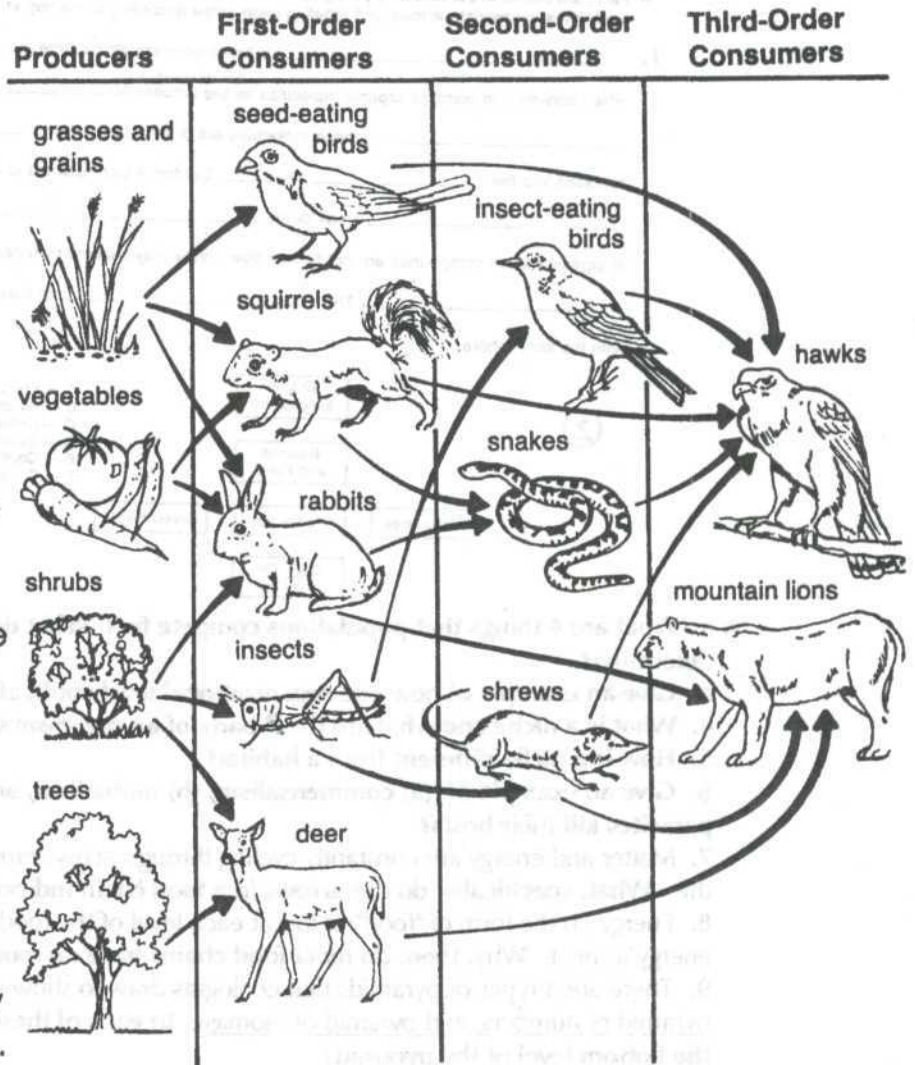
ECOLOGICAL RELATIONSHIPS

Name _____

Food Webs

Use the food web below to answer questions 1-5.

- When the hawk is the third-order consumer, the number of second-order consumers is _____.
- The food chain that includes insect-eating birds is _____.
- The animal that consumes the largest number of different types of first-order and second-order consumers is the _____.
- All the animals that are herbivores are _____ consumers.
- If there were no snakes in this food web, the squirrels and rabbits could still be eaten by the _____.



Ecological Terms

Fill in the blanks with the words from the list below.

community	decomposers	ecosystem	habitat
herbivore	niche	omnivore	scavenger

- A group of independent organisms in a particular environment is a(an) _____.
- Organisms that break down complex compounds and dead tissue are _____.
- All the living and nonliving things in a selected area form a(an) _____.
- The particular environment to which a particular species is adapted is its _____.
- The special role and place of an organism within its habitat is its _____.
- An animal that eats both plants and animals is a(an) _____.
- Members of a single species that occupy a common area form a(an) _____.
- Animals that feed only on dead organisms are _____.

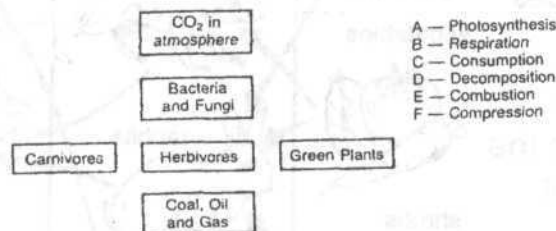
Carbon and Nitrogen Cycles

Carbon and nitrogen are vital to all organisms and are continuously supplied through the actions of natural cycles. During these cycles, carbon and nitrogen are found in various chemical compounds, yet they ultimately become available to organisms in the proper chemical form.

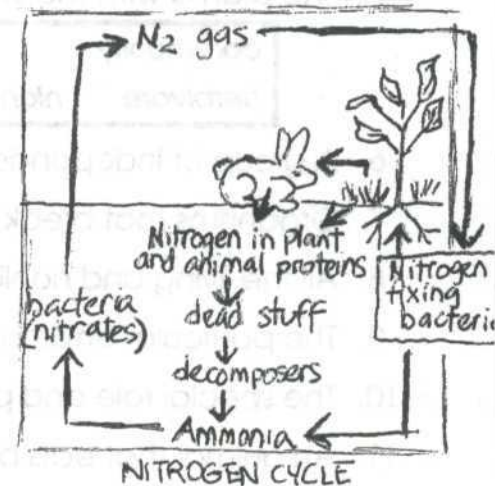
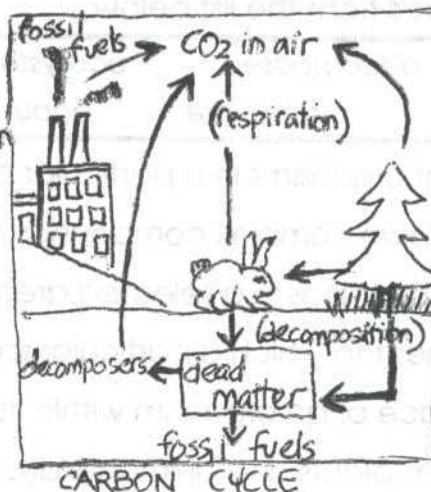
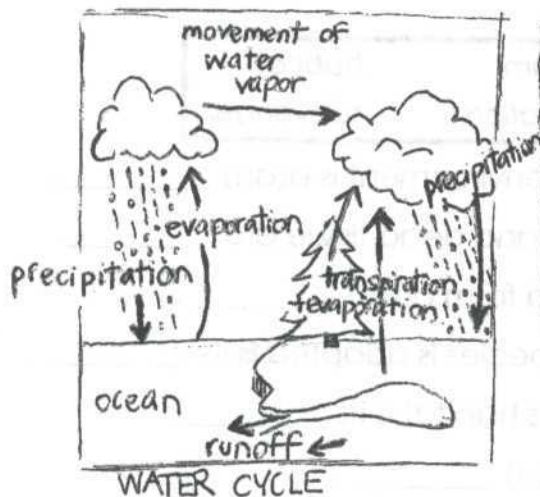
- Fill in the blanks in the following paragraph, which describes the carbon cycle. Then complete the diagram by adding the appropriate arrows and labeling each arrow according to the key at the right of the diagram.

1. Carbon _____ is taken from the atmosphere by _____ which convert it to complex organic molecules by the process of _____. During _____, these molecules are broken down and _____ is released into the _____. Carbon is also returned to the atmosphere when _____ break down _____ and dead plants and animals. If organic carbon compounds are not broken down, they may become compressed and converted into _____. The _____ of these fossil fuels releases carbon into the atmosphere.

2



- What are 4 things that populations compete for? What does competition for these things determine?
 - Give an example of how one organizational level could affect another.
- What is a niche and what are the 3 parts of an organism's niche?
- How is a niche different from a habitat?
- Give an example of (a) commensalism, (b) mutualism, and (c) parasitism. Why don't parasites kill their hosts?
- Matter and energy are constantly cycling through ecosystems. A food chain is one way of showing this. What, specifically, do the arrows in a food chain indicate?
- Energy (in the form of "food") is lost at each level of the food chain because all organisms give off energy as heat. Why, then, do most food chains have no more than five links?
- There are 3 types of pyramids that ecologists draw to show energy relationships: Pyramid of energy, pyramid of numbers, and pyramid of biomass. In each of these, what type of organism is usually the bottom level of the pyramid?
- What energy powers all pyramids?
- Explain what it means to say that nutrients and energy are cycled.
- Look at the cycles below and answer the questions that go with them.



- In what forms does water exist in the water cycle?
- Explain the role of plants, animals, and decomposers in the carbon cycle.
- How are plants and animals involved in the nitrogen cycle?