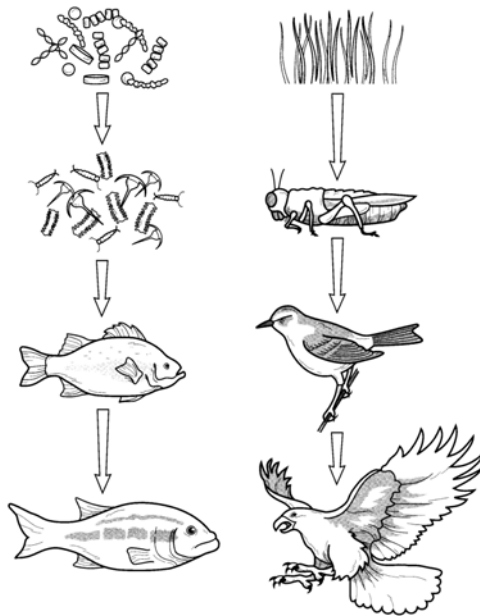
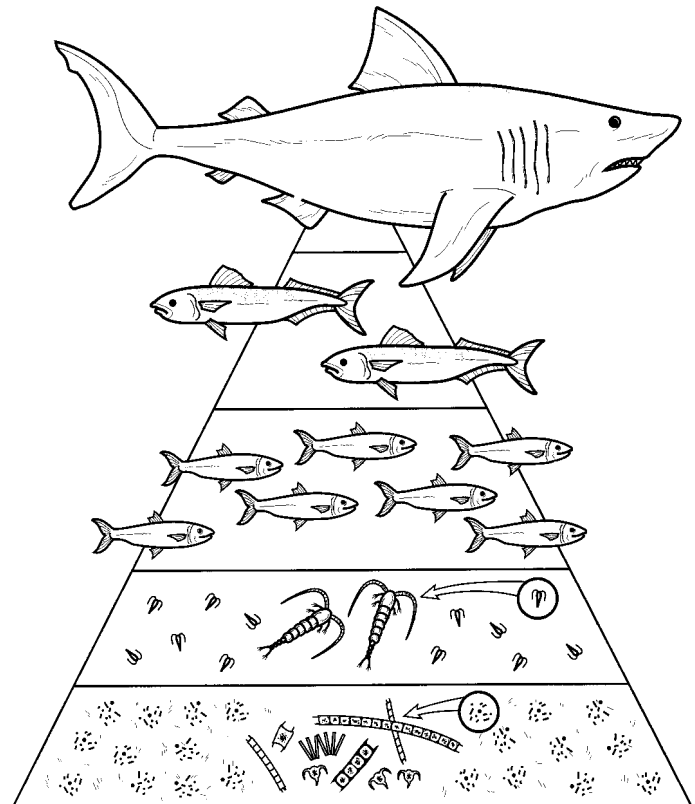


ECOSYSTEMS

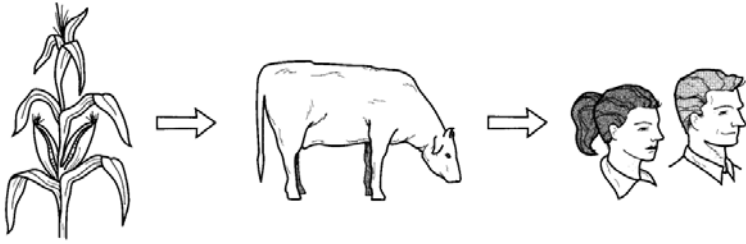
TROPHIC LEVELS



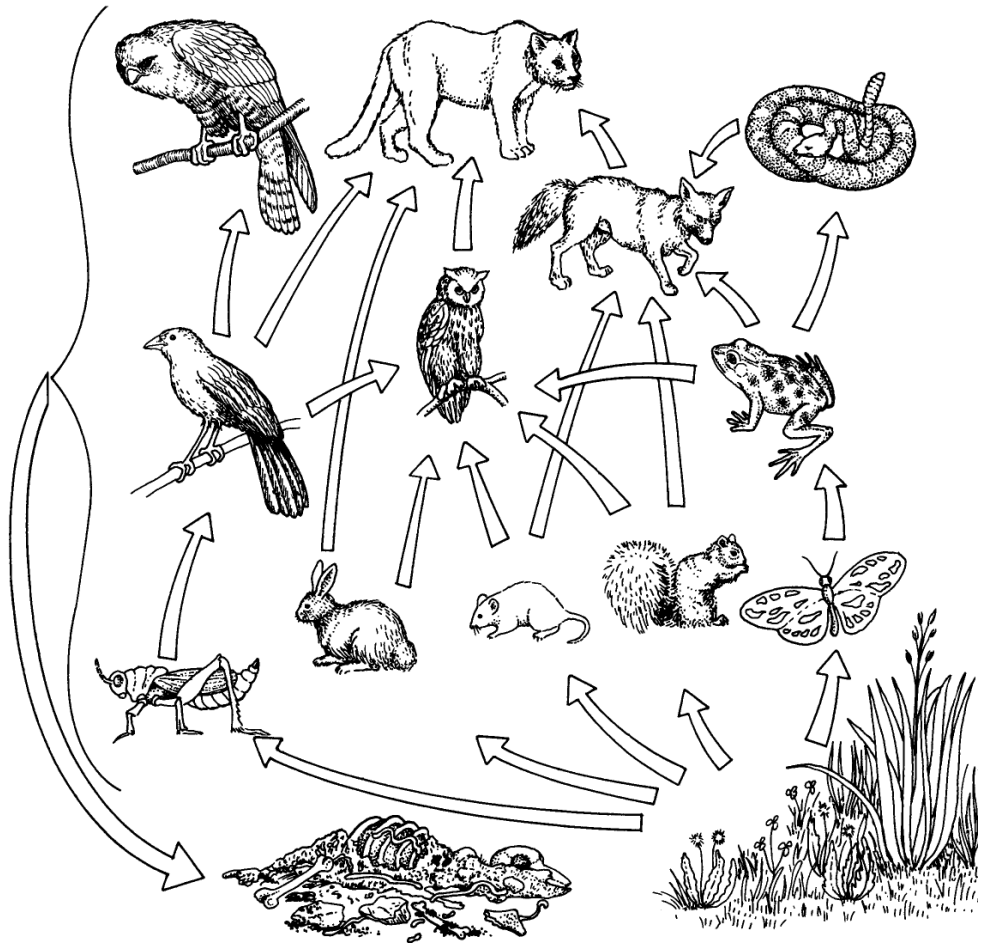
ECOLOGICAL PYRAMIDS



FOOD CHAIN



FOOD WEBS



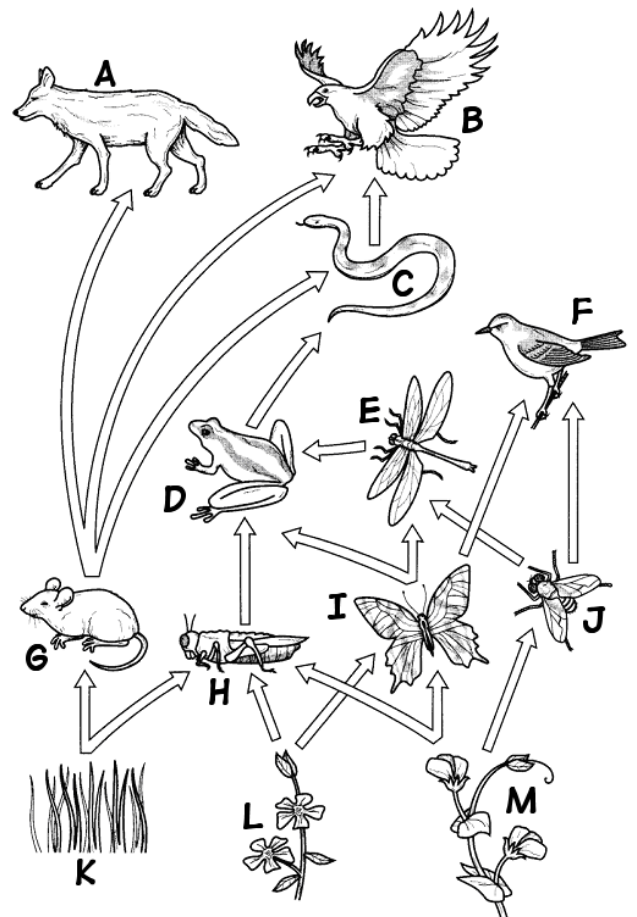
QUESTIONS

1. Define ecosystem. _____

2. Identify the trophic level described in each of the following. Use the key to indicate your answers.

- A. Detritivores
- B. Primary consumers
- C. Primary producers
- D. Secondary consumers
- E. Tertiary consumers

- _____ Autotrophs
- _____ Convert sun energy into chemical energy
- _____ Plants, photosynthetic protists, cyanobacteria, chemosynthetic bacteria
- _____ Herbivores
- _____ Eat primary producers
- _____ Primary carnivores
- _____ Eat primary consumers
- _____ Secondary carnivores
- _____ Eat secondary consumers
- _____ Consumers that obtain their energy by consuming dead plants and animals
- _____ Fungi, bacteria, nematodes, earthworms, insects, scavengers
- _____ Letters K, L, and M
- _____ Letters G, H, I and J
- _____ Letters D, E, and F
- _____ Letter C



- _____ Letter A
- _____ Letter B

3. What is the source of energy for each of the following?

Primary producer	
Primary consumer	
Secondary consumer	
Tertiary consumer	
Detritivores	

4. Describe the efficiency of energy transfer between trophic levels.

5. How does the amount of energy available at each trophic level affect the structure of the ecosystem?

6. If the cells in the dead terrestrial plant material that washed into the lake contained a commercially produced toxin, what would be the likely effects of this toxin on the food web on page 2? Explain.

7. Water cycle: What effect does each of the following processes have on the water cycle?

Evaporation	
Condensation	
Transpiration	
Respiration	
Precipitation	

8. Carbon Cycle: What is the role of each of the following in the carbon cycle?

Photosynthesis	
Respiration	
Eating	
Burning	

9. Nitrogen Cycle: Match the description with the correct term.

- | | |
|--------------------|----------------------|
| A. Ammonification | D. Nitrification |
| B. Assimilation | E. Nitrogen-fixation |
| C. Denitrification | |

- _____ Soil bacteria or bacteria in the soil convert nitrogen gas (N_2) into usable forms
- _____ Bacteria convert ammonium (NH_4^+) into nitrites (NO_2^-) and nitrates (NO_3^-)
- _____ Decomposers and some nitrogen-fixing bacteria produce ammonium (NH_4^+)
- _____ Plants absorb nitrates from the soil and animals eat plants or other animals to obtain nitrogen-containing compounds
- _____ Bacteria convert nitrates into nitrogen gas

10. Phosphorus Cycle: Answer the following questions.

a. What acts as the reservoirs of phosphorus in the environment?

b. How do plants obtain (assimilate) phosphorus?

c. How do animals obtain (assimilate) phosphorus?

d. What is the role of decomposers in the phosphorus cycle?

11. List three impacts humans have had on ecosystems.

12. Describe what happens during the greenhouse effect.
