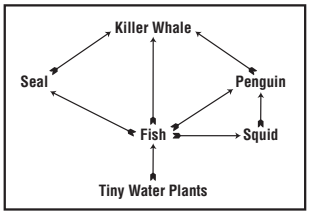
Name _____

23. Look at the model of a food web below. Use this model to answer Part A and Part B.



Part A Suppose the fish in this food web become sick and die. What might happen to all the animals that eat the fish?

Possible answer: The fish are food for most of the food web. Without fish to eat, the squid, penguin, and seal may die. Then the whales at the top of the web will not get enough food, and they may die.

Part B How might the loss of the fish affect the tiny water plants?

Possible answer: Fish eat the tiny water plants. If the fish die, there may be too many water plants. This might affect the habitat for the rest of the food chain.

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Understanding Ecosystems

Vocabulary 4 points each

Match each term in Column B with its meaning in Column A.

	Column A	Column B
F	1. All the living and nonliving things around us	A. habitat restoration
E	2. The living and nonliving things in a particular place	B. biotic
B	3. Having to do with the living factors of an ecosystem	C. community
H	4. A group of the same kind of plant or animal, living in the same ecosystem	D. diversity
A	5. Work done to repair damaged ecosystems	E. ecosystem
G	6. Harmful substances mixed with water, air, or soil	F. environment
C	7. All the groups of plants and animals living in the same ecosystem	G. pollution
D	8. Variety in living things	H. population

Science Concepts 4 points each

Write the letter of the best choice.

B **9.** Which of these is **not** an example of a nonliving part of an ecosystem?
- **A.** air
- **B.** monkey
- **C.** water
- **D.** soil

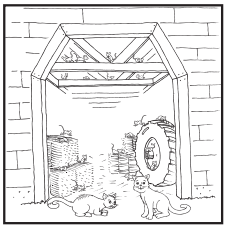
H **10.** Which is an example of an abiotic factor?
- **F.** insects
- **G.** plants
- **H.** water
- **J.** trees

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D **11.** In which climate would ecosystems have the most diversity?
- **A.** desert
- **B.** savannah
- **C.** taiga
- **D.** tropical rain forest

H **12.** The diagram shows two populations in a barn community. The cat population has just joined the barn community. What is most likely to happen?



- **F.** mouse and cat populations both go up
- **G.** mouse and cat populations both go down
- **H.** mouse population goes down as cat population goes up
- **J.** mouse population goes up as cat population goes down

C **13.** A landfill closes. The city covers the top with soil and then plants trees. What is this an example of?
- **A.** a biotic factor
- **B.** erosion
- **C.** habitat restoration
- **D.** pollution

G **14.** Oil drips from cars onto a parking lot. Then rain washes the oil into a pond, where fish get sick and die. What is this an example of?
- **F.** adaptation
- **G.** pollution
- **H.** population
- **J.** restoration

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B **15.** Meesha's lawn is an ecosystem. It includes grass, soil, air, insects, earthworms, and birds. Meesha puts extra water and fertilizer on her lawn. Which parts of the ecosystem will change?
- **A.** none
- **B.** all parts, because everything in an ecosystem interacts
- **C.** just the soil, because she's making it moister and richer
- **D.** just the grass, because that's why she's adding water and fertilizer

J **16.** Bittersweet vines grow quickly up trees, where they block light and cause the trees to die. What is this an example of?
- **F.** trees meeting a basic need
- **G.** climate changing a population
- **H.** pollution harming an ecosystem
- **J.** a biotic factor changing an ecosystem

Inquiry Skills 8 points each

17. **Compare and contrast** the energy resources used by a car and a bicycle and the effects that a car and a bicycle have on an ecosystem.

Possible answer: A car uses gasoline, a fuel that cannot be replaced, while a bicycle uses a fuel that can be replaced (energy from food that you eat). A car gives off pollution, which hurts an ecosystem. Riding a bicycle does not give off any pollution and does not affect an ecosystem.

18. A highway crew clears the weeds off half of a hillside. After a rainstorm, the weedy part of the hill is the same, but most of the soil is washed away from the bare part. **Draw a conclusion** about the interaction of weeds and soil.

Possible answer: Weeds prevent soil erosion because their roots keep soil from washing away.

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Critical Thinking **10 points each**

19. Describe steps that society can take to reduce air and water pollution.

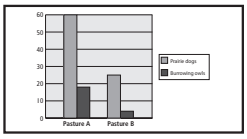
Possible answer: People might put special devices on the tailpipes of their cars to control pollution. Factories could reduce the amount of chemicals they release into the air and not dump waste into rivers and streams.

20. Burrowing owls live in underground holes made by mammals such as prairie dogs. Burrowing owls eat mice, crickets, grasshoppers, and other small animals. Prairie dogs, mice, and grasshoppers all live in grasslands.

Part A What are two basic needs that burrowing owls can meet in a grassland, and how can they meet them?

The owls can find shelter in the prairie dog holes, and they can find food, such as mice and grasshoppers.

Part B The graph shows the populations of prairie dogs and burrowing owls in two pastures. Is there a relationship between the number of prairie dogs and the number of burrowing owls? Explain your answer, using information from the graph.



Possible answer: Pasture A has more prairie dogs than Pasture B. Pasture A also has more burrowing owls than Pasture B. So, the sizes of the two populations are directly related.

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Energy Transfer in Ecosystems

Vocabulary **4 points each**

Match each term in Column B with its meaning in Column A.

	Column A	Column B
G	**1.** Green plants, which make their own food	**A.** habitat
B	**2.** Animals, which cannot make their own food	**B.** consumers
E	**3.** Animals that eat only plants	**C.** decomposers
A	**4.** An environment that meets the needs of an organism	**D.** carnivores
		E. herbivores
F	**5.** Movement of food energy in a series of organisms	**F.** food chain
		G. producers
C	**6.** Living things that feed on the wastes and remains of plants and animals	**H.** predators
H	**7.** Consumers that eat prey	
D	**8.** Animals that eat only meat	

Science Concepts **4 points each**

Write the letter of the best choice.

D **9.** What is an environment that meets the needs of an organism?
A. energy pyramid **C.** food web
B. food chain **D.** habitat

G **10.** From where does a first-level consumer get most of its energy?
F. predators **H.** second-level consumers
G. producers **J.** top-level consumers

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B **11.** Which organism is **not** an omnivore?
A. hyena **C.** bear
B. lion **D.** human

H **12.** Where do green plants get most of the energy they need to make their own food?
F. carbon dioxide
G. oxygen
H. sunlight
J. water

C **13.** What is the term for the role that each living thing has in its habitat?
A. food web **C.** niche
B. fossil **D.** prey

G **14.** Which animal is a carnivore?
F. cow
G. lion
H. mouse
J. rabbit

C **15.** What is the term for food chains that overlap?
A. consumer **C.** food web
B. extinction **D.** producer

F **16.** Miguel is writing a report about producers, consumers, herbivores, carnivores, and omnivores. Which of the following is a false statement that he should **not** include in his report?
F. Producers eat consumers.
G. Herbivores eat only plants, or producers.
H. Omnivores eat both plants and other animals.
J. Carnivores eat only other animals.

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Inquiry Skills **8 points each**

17. How would you **compare** the diet of a carnivore to the diet of a herbivore?

Possible answer: A carnivore feeds only on other animals. Herbivores are animals that feed only on plants.

18. Joan saw a mushroom growing on the stump of a dead tree. What could Joan **infer** about the role of the mushroom?

Possible answer: The mushroom is a decomposer, feeding on the tree stump and breaking it down.

Critical Thinking **10 points each**

19. The diagram shows a simple food chain. Which organism is the producer? Which organism is the first-level consumer? Explain.



The grain is the producer and the mouse is the first-level consumer. Plants make their own food and are producers. First-level consumers eat producers.

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