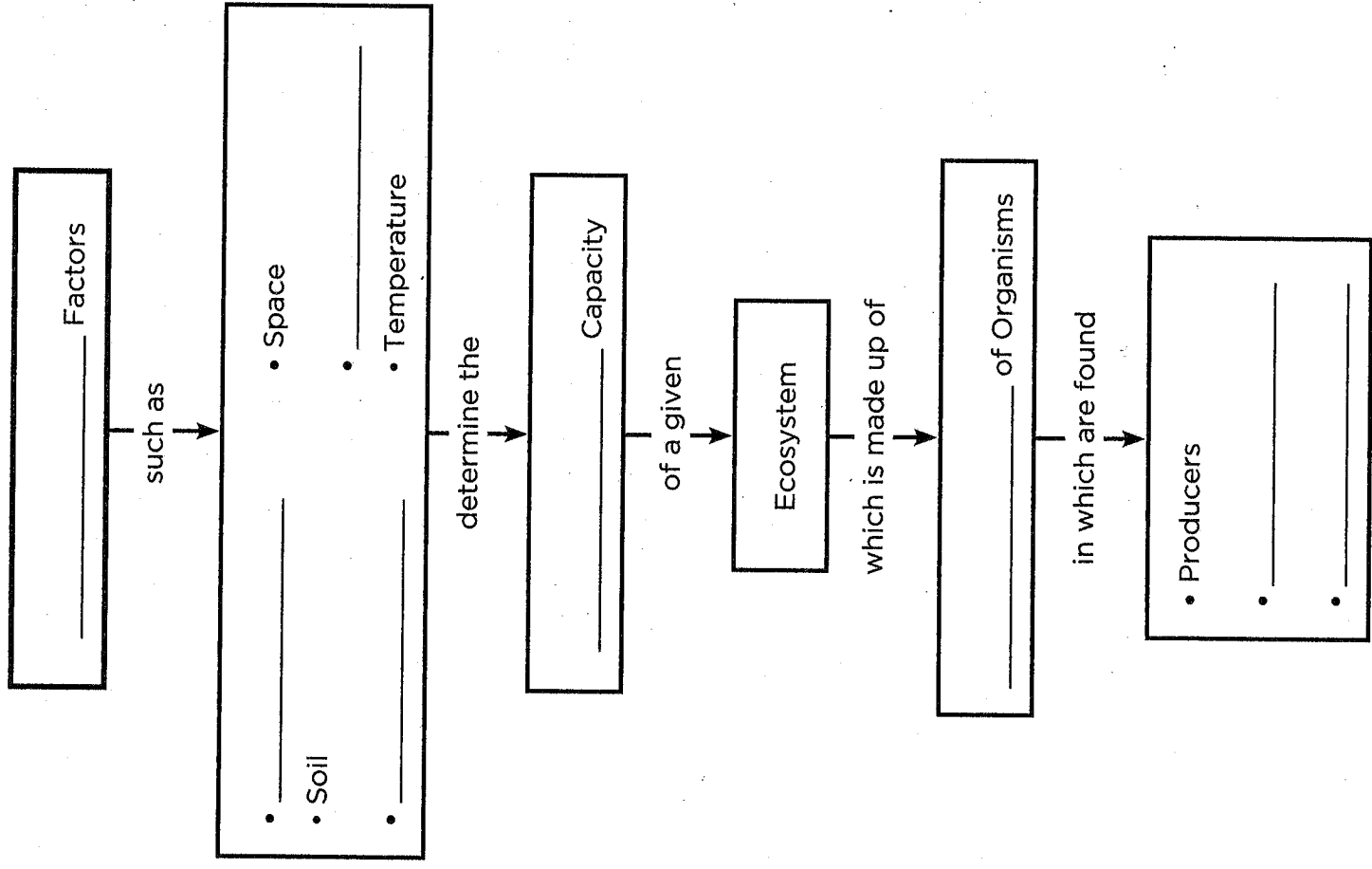


Interactions in Ecosystems

Complete the concept map about relationships within ecosystems.



Energy Flow in Ecosystems

Use your textbook to help you fill in the blanks.

What is an ecosystem?

1. The living things in an environment are _____ factors.
2. The nonliving things in an environment are _____ factors.
3. All the living and nonliving things interacting in an environment make up a(n) _____.
4. All the members of a species within an ecosystem are a(n) _____.
5. Together, the populations in an ecosystem form a(n) _____.

How are food chains alike?

6. The path that energy takes in an ecosystem as it flows from organism to organism is a(n) _____.
7. At the base of each food chain are _____ that use the Sun's energy to make sugar and oxygen during _____.
8. The sugars provide food for _____, or plant-eating animals.

Name _____ Date _____

LESSON
Outline

9. Organisms in an ecosystem that break down dead or decaying plants and animals are _____.
10. Animals such as vultures and raccoons are _____ that eat dead bodies after they have started to rot.

What are food webs made of?

11. A network of food chains that share some links is a(n) _____.

How do energy pyramids compare?

12. A diagram that shows the energy that is available at each level of an ecosystem is a(n) _____.
13. At each level of an energy pyramid, about _____ percent of the energy from the level below is lost.

How does change affect a food web?

14. Removing a species from a food web can throw an ecosystem out of _____.

Critical Thinking

15. What would happen if producers were removed from an ecosystem?

Energy Flow in Ecosystems

Who am I? What am I?

Choose a word from the word box that answers each question.

- | | | |
|-------------------|---------------|-------------|
| a. community | d. food chain | g. predator |
| b. ecosystem | e. food web | h. prey |
| c. energy pyramid | f. population | |

1. _____ I include all living things in an ecosystem.
What am I?
2. _____ I am a diagram that shows the amount of energy available at each level of an ecosystem. What am I?
3. _____ I am a network of food chains that are connected.
What am I?
4. _____ I am an animal that hunts other animals for food.
Who am I?
5. _____ I include all living and nonliving things in an environment. What am I?
6. _____ Predators hunt me for food. Who am I?
7. _____ All the members of a single species in an ecosystem are part of me. What am I?
8. _____ I am the path that energy takes as it moves from one organism to another in an ecosystem.
What am I?

Name _____ Date _____

LESSON
Cloze Activity

Energy Flow in Ecosystems

Fill in the blanks.

carnivores	food chain	herbivores	plants
community	food web	omnivores	population

All the living and nonliving things in an environment make up an ecosystem. Within an ecosystem, all living things make up a _____. All individuals of one species are a(n) _____ . An ecosystem can be as large as a forest or as small as a fallen log.

The path that energy takes as it moves from one organism to another in an ecosystem is a(n) _____. A _____ group of connected food chains is a(n) _____. Producers, such as _____ and algae, are at the base of each food chain. Consumers include _____ that eat plants and _____ that eat other animals. Animals that eat both plants and animals are _____. The amount of energy available at each level in an ecosystem is shown by an energy pyramid.

Two Desert Creatures

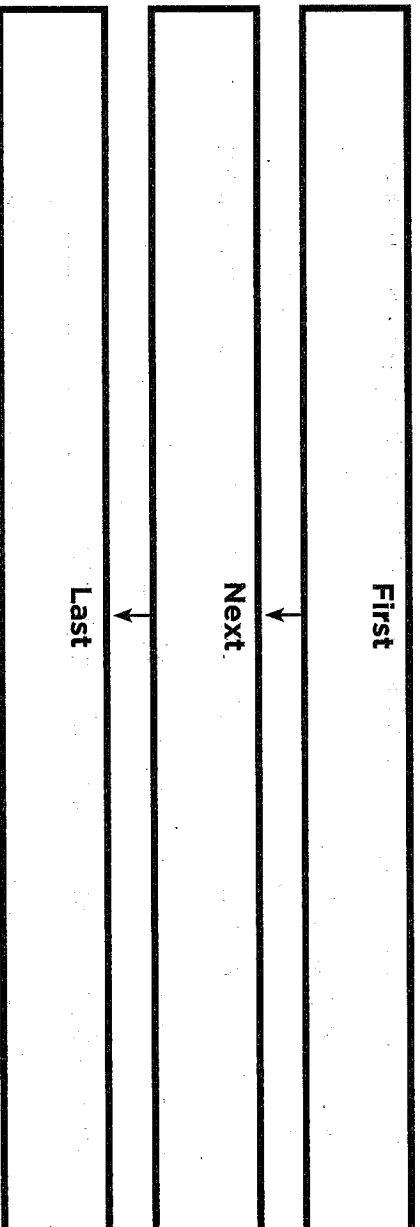


Write About It

Choose two other organisms that share a predator/prey relationship. Write a fictional narrative in which these two organisms are in a conflict.

Getting Ideas

Select two other animals. Think about these questions: What is the problem? What happens between them? Then use the sequence chart below to plan your story.



Planning and Organizing

Andy wanted to write about a red-tailed hawk and a muskrat. Here are three sentences that he wrote. Write 1 by the event that happens first. Write 2 by the event that happens second. Write 3 by the event that happens last.

_____ The hawk swooped down, grabbed the muskrat with its sharp talons, and carried it away.

_____ The hawk spied a large muskrat coming out of its burrow by the bank of the river.

_____ Seeing the hawk, the muskrat jumped in the water and tried to paddle away.

Drafting

Write a sentence to begin your fictional narrative. Introduce the predator. Tell where the story takes place. Tell what the problem is.

Now write your fictional narrative. Use a separate piece of paper. Begin with the sentence you wrote above. Explain the conflict, or problem, between the predator and prey, and show how it is resolved. Tell these events in time order. Include dialogue to bring your characters to life.

Revising and Proofreading

Here are two sentences that Andy wrote. Each sentence is missing two punctuation marks. Rewrite them, adding punctuation marks where needed.

1. "Don't be afraid little muskrat, shouted the hawk,
I just want to be your friend."

2. As the hawks powerful wings and large body threw
a shadow over the land the muskrat looked up in fear.

Now revise and proofread your writing. Ask yourself:

- ▶ Did I include details that bring my characters to life?
- ▶ Did I present a reasonable conflict and show how it was resolved?
- ▶ Did I correct all mistakes in grammar, spelling, capitalization, and punctuation?

Relationships in Ecosystems

Use your textbook to help you fill in the blanks.

Why do organisms compete?

1. The struggle for resources among organisms in an ecosystem is called _____.
2. Any resource that restricts the growth of populations in an ecosystem is a(n) _____.
3. The size of the population that an area can support is its _____.

How do organisms avoid competition?

4. An organism's _____ is the place in which it lives and hunts for food.
5. The specific role that an organism plays within a community is that organism's _____.

How do organisms benefit from interactions?

6. The reliance of organisms on one another for survival is known as _____.
7. A relationship between organisms that lasts over time is _____.
8. A symbiotic relationship in which both organisms benefit is _____.

Name _____ Date _____

LESSON
Outline

9. One example of this relationship is the _____, which is formed by a(n) _____ and an alga that live together.
10. A symbiotic relationship in which one organism benefits and the other is not harmed is _____.
11. One example of this type of relationship is the growth of _____ on the backs of whales; in this situation, no harm comes to the whales.

What are parasites?

12. A symbiotic relationship in which one organism benefits while the other is harmed is _____.
13. In this type of relationship, a(n) _____ benefits by living in or on a(n) _____.
14. Some parasites cause serious problems, giving people _____ such as dysentery.

Critical Thinking

15. What keeps populations in a community from increasing constantly?

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Relationships in Ecosystems

Fill in the blanks.

- | | | |
|----------------------|--------------------|---------------|
| a. carrying capacity | d. limiting factor | g. parasitism |
| b. commensalism | e. mutualism | h. symbiosis |
| c. habitat | f. niche | |

1. The particular role that an organism plays in a community is its _____.
2. When two organisms benefit in a symbiotic relationship, the relationship is called _____.
3. The place in which an organism lives and hunts for food is its _____.
4. Water is a(n) _____ that restricts the growth of populations in an ecosystem.
5. A relationship in which one organism benefits and the other is not harmed is _____.
6. Because each area has a certain _____, it can support only a limited population.
7. A symbiotic relationship in which one organism benefits while the other is harmed is _____.
8. A special relationship between organisms that lasts a long time is _____.

Relationships in Ecosystems

Fill in the blanks.

carrying capacity	host
commensalism	parasitism
compete	symbiosis
exceeds	vegetation

Each ecosystem has certain limiting factors that restrict the size of its populations. These include water, temperature, soil types, and the amount of _____ available for food. The population that any area can support is its _____. When the population of an area _____ its carrying capacity, some plants or animals begin to die off.

Living things _____ for resources in an ecosystem. However, _____ limits competition as organisms develop relationships that allow them to live together. A symbiotic relationship that benefits only one organism but does no harm to the other is known as _____. In _____, a parasite harms the _____ organism it lives on or in. In the relationship called mutualism, both organisms benefit.

Adaptation and Survival

Use your textbook to help you fill in the blanks.

What is adaptation?

1. A characteristic that helps an organism survive in its natural environment is a(n) _____.
2. Organisms that are best adapted to their environment _____ and pass on their traits to offspring.
3. A physical structure that helps an organism survive in its environment, such as the _____ of an animal's fur, is a(n) _____ adaptation.
4. A characteristic that is an organism's response to its environment is a(n) _____ adaptation.

What are some plant adaptations?

5. Some plants have adapted to _____ environments by developing thick, waxy stems to prevent water loss.
6. Plants that are common in cold climates often have _____ growing periods.
7. Some plants produce bad-tasting chemicals that make them unattractive to _____ that might eat them.

Name _____ Date _____

LESSON
Outline

What are some animal adaptations?

8. To keep warm in cold climates, animals have _____ fur.
9. In hot deserts, animals are often more active at _____, when temperatures drop.
10. Any color, shape, or pattern that lets an organism blend into its environment is _____.
11. A type of camouflage in which an organism's coloring helps it blend in with its background is _____ coloring.
12. When an organism matches the color, shape, and texture of the environment around it, it is showing protective _____.

What is mimicry?

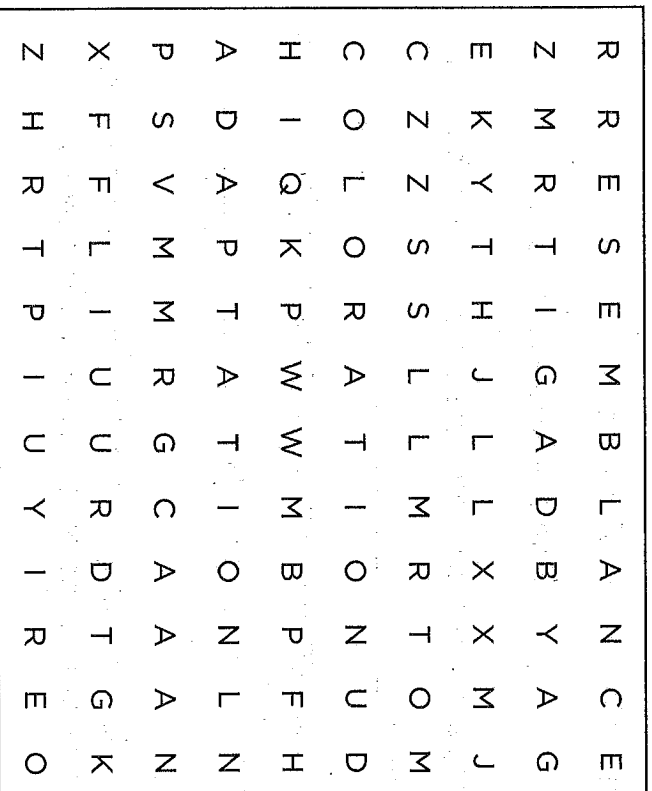
13. An adaptation in which an organism gets protection from predators by looking like a dangerous animal is _____.
14. Predators also use this characteristic to fool _____; believing that the predators are harmless, prey come close enough to be caught.

Critical Thinking

15. How do adaptations help an organism survive in its environment?

Adaptation and Survival

Use the clues below to help you find the words hidden in the puzzle.



1. An organism that matches the color, shape, and texture of its environment is using protective _____.
2. A type of coloring, shape, or pattern that allows an organism to blend in with its environment is _____.
3. Any characteristic that helps an organism survive in a certain environment is a(n) _____.
4. An adaptation in which an animal is protected against predators by its resemblance to an unpleasant or dangerous animal is _____.
5. A type of camouflage in which the color of an animal blends in with the animal's background is protective _____.

Adaptation and Survival

Fill in the blanks.

cactus	poisons	streamlined
camouflage	prey	water
mimicry	seasons	

Both plants and animals have adaptations that help them survive in their environments. For example, plants such as the _____ have thick, waxy stems that conserve _____ in environments that are hot and dry. Plants in cold climates have shortened growing _____.

Ocean animals are more _____ than land animals so that they can swim faster.

Some adaptations developed because of predator-_____ relationships. Plants, such as milkweed, contain _____ that make predators avoid them.

Prey can use _____ to blend in with their environments. Some animals also demonstrate _____, the ability to look like another animal that a predator finds unpleasant. For example, some predators stay away from the viceroy butterfly because it mimics the bad-tasting monarch butterfly.

Meet Caroline Chaboo

Read the Reading in Science feature in your textbook.

Complete the statements in the “Clues” and “What I Know” columns. Use this information to infer something that is not directly stated in the text. Write that statement in the “What I Infer” column.

Clues	What I Know	What I Infer
<p>1. The Sabal palm stands up to high winds, drought, and driving rain in the _____ region.</p>	<p>The Sabal palm is well adapted for the Caribbean region.</p>	
<p>2. The _____ beetle harms Sabal palm trees in regions where it lives.</p>	<p>The tortoise beetle lives in _____</p>	
<p>3. The tortoise beetle weakens the Sabal palm, but _____</p>	<p>Caroline Chaboo studies plants, such as the Sabal palm, to discover whether they have adapted natural protection against insect pests.</p>	

Name _____ Date _____



Write About It

Infer Read the “Write About It” questions carefully. Use the text within “Meet Caroline Chaboo” to write your answers.

Using Ideas to Infer

To answer Question #1, first determine how a natural pesticide inside the Sabal palm would help the tree.

Then, write your answer to the question:

How might a natural pesticide in the Sabal palm help other organisms?

Planning and Organizing

Imagine that you have been told to research tortoise beetles to find out what other plants they eat. In order to conduct this research, first list the types of sources that would contain this information.

- a. _____
- b. _____
- c. _____

Then, list key words you could use to look up the information in these sources.

- a. _____
- b. _____

Interactions in Ecosystems

Choose the letter of the best answer.

- All the living and nonliving things in an environment make up a(n)
 - community.
 - ecosystem.
 - population.
 - species.
- The path that energy takes in an ecosystem as it moves from one organism to another is a(n)
 - producer chain.
 - energy pyramid.
 - food chain.
 - energy web.
- Which animal hunts other animals for food?
 - predator
 - producer
 - prey
 - herbivore
- A diagram that shows the amount of energy available at each level of an ecosystem is a(n)
 - energy pyramid.
 - food web.
 - food chain.
 - ecosystem diagram.
- All of the members of one species in an ecosystem are a(n)
 - community.
 - food chain.
 - environment.
 - population.
- Which type of resource restricts population growth within an ecosystem?
 - biotic factor
 - limiting factor
 - capacity factor
 - energy factor
- The measure of the size of a population and the area that can support it is
 - limiting factor.
 - ecosystem limit.
 - carrying capacity.
 - community.

Choose the letter of the best answer.

8. A type of symbiosis in which both organisms benefit is
- commensalism.
 - parasitism.
 - predatorism.
 - mutualism.
9. A type of symbiosis in which one organism benefits and the other is not harmed is
- commensalism.
 - parasitism.
 - predatorism.
 - mutualism.
10. What is the name of the physical place in which an organism lives and hunts for food?
- habitat
 - niche
 - host
 - community
11. Any characteristic that helps an organism survive in its environment is a(n)
- niche.
 - mimicry.
 - adaptation.
 - abiotic factor.
12. A color, shape, or pattern that allows an organism to blend in with its environment is called
- mimicry.
 - symbiosis.
 - mutualism.
 - camouflage.
13. A type of camouflage in which the color of an animal blends with its background is
- protective resemblance.
 - commensalism.
 - protective coloration.
 - adaptive coloring.
14. An adaptation in which an animal is protected by its resemblance to an unpleasant animal that predators avoid is called
- camouflage.
 - symbiosis.
 - mimicry.
 - parasitism.
15. What word refers to the special role that an organism plays in a community?
- symbiosis
 - niche
 - habitat
 - mutualism

Ecosystems and Biomes

Complete the concept map with information you learned about ecosystems and biomes.

