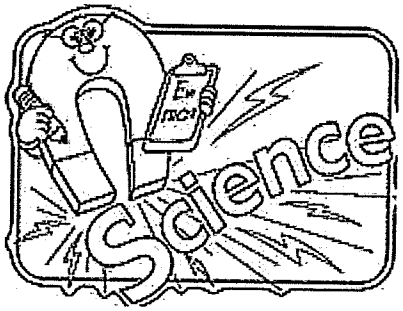
Name:_____

College:_____

4th Grade SCIENCE



Week of 5/17 - 5/20/2021

Spelman College®

1867 HOWARD UNIVERSITY

Monday

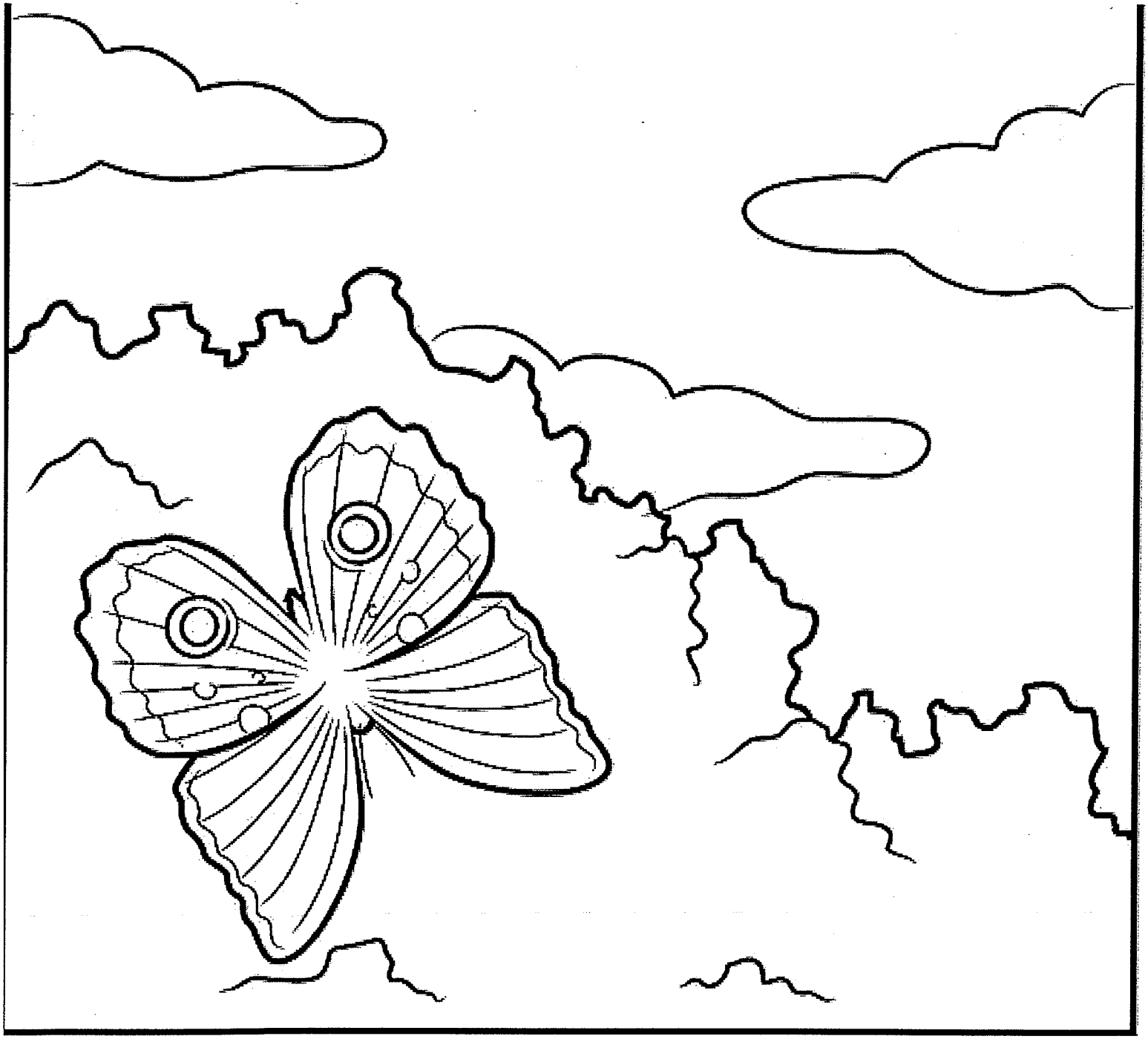
Date: May 17

Learning Target: I can identify different animal defense mechanisms and how they keep animals safe.

Hide and Seek:
Animal Camouflage

The tree frog blends with the tree trunk so it can't be seen,
but if it hops upon the grass, the tree frog will turn green.
This protective coloration always depends on habitat.
To give the animal protection, it must look **like** where it's at.

The killdeer is a bird that makes its nest on open ground,
but it blends so well with its surroundings, it's rarely ever found.
Many moths and butterflies have brightly colored wings.
When they fold, they're gray and splotchy to blend in with other things.



Another type of camouflage is what's called *mimicry.* The animal has markings that are **not** what you think you see.

The "eyespots" on the wings of the large owl butterfly
are used to trick its enemies should they see it from the sky.

Many animals in nature like to play hide and seek. Camouflage and mimicry appear to be a great technique.

Most animals are colored much like their habitat, from tiny toads and butterflies up to the jungle cat.

EXIT TICKET

Name:_____	**Date:**_____
BCCSG	**Howard / Spelman**

1. Whales have thick blubber to help keep them warm in cold ocean waters and protect them from injury. The blubber of a whale is

   A an adaptation to its environment
   B a characteristic used to attract a mate
   C a body structure common to all organisms
   D a waste product that needs to be eliminated

2. Warmer temperatures can cause a deer to rub against trees to remove clumps of heavy fur. This behavior is helping the deer to
   A reproduce
   B feel cooler
   C store fat
   D camouflage itself

3. When a beaver senses a predator approaching, it slaps its tail on the surface of the water. This action is an example of an animal using a body part to
   A find food
   B attract a mate
   C build a shelter
   D communicate information

Grade:

Tuesday

Date: May 18

Learning Target: Explain that all organisms go through a life cycle (beginning of life, growth, and development, reproduction, and death).

I can classify behaviors of animals as either learned or inherited

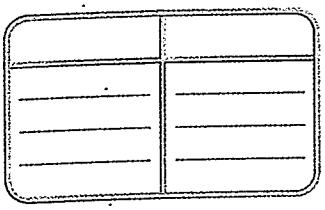
Learn by Reading

VOCABULARY

individual p. A86

READING SKILL

Compare and Contrast Use a chart to compare and contrast living things of the same kind.



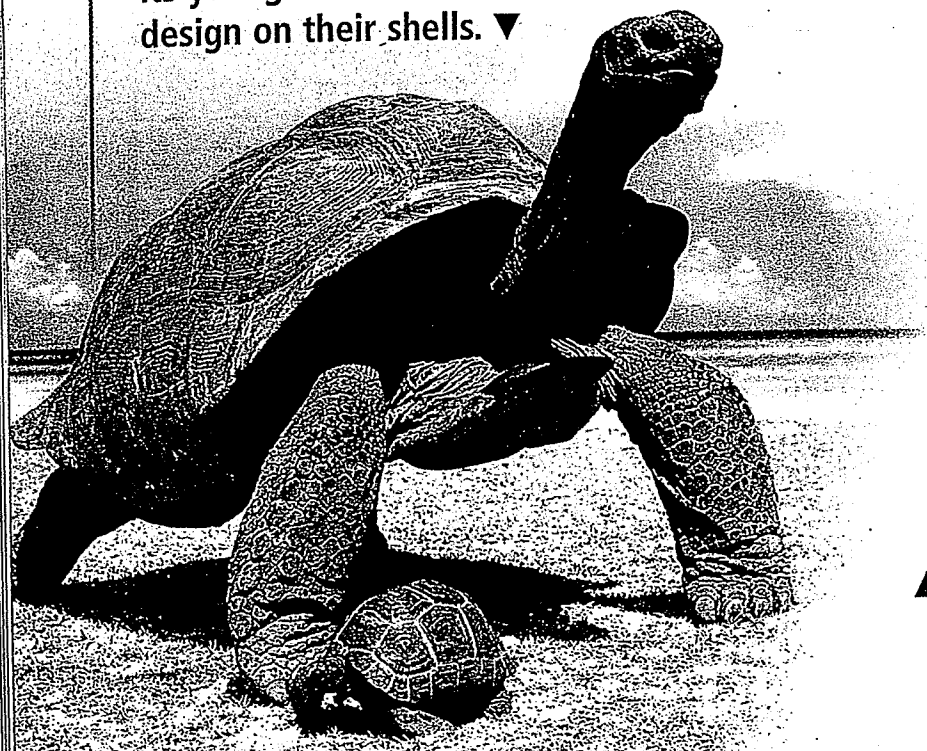
Similarities and Differences

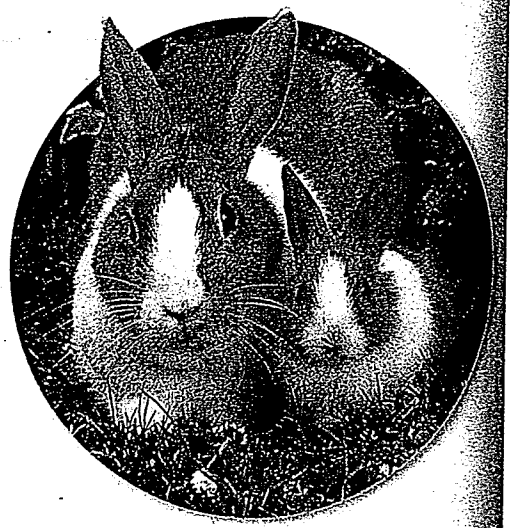
MAIN IDEA **Most living things look similar to their parents. This is true because parents pass traits to their offspring.**

Family Resemblance

"He has his father's eyes!" "Oh, she has her mother's smile!" You may have heard people talk about children this way. In some families, children look similar to their parents. Young plants and animals also often look like their parents. They grow to be about the same height as their parents. The color of a plant's flowers is usually similar to that of its parent plant. The color of an animal's fur is often similar to the fur of one or both of its parents.

The adult tortoise and its young have a similar design on their shells. ▼

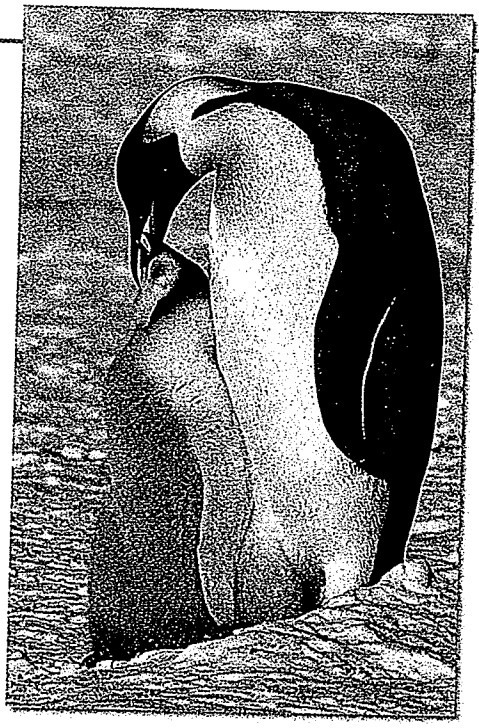




▲ The adult and baby rabbit look very similar.

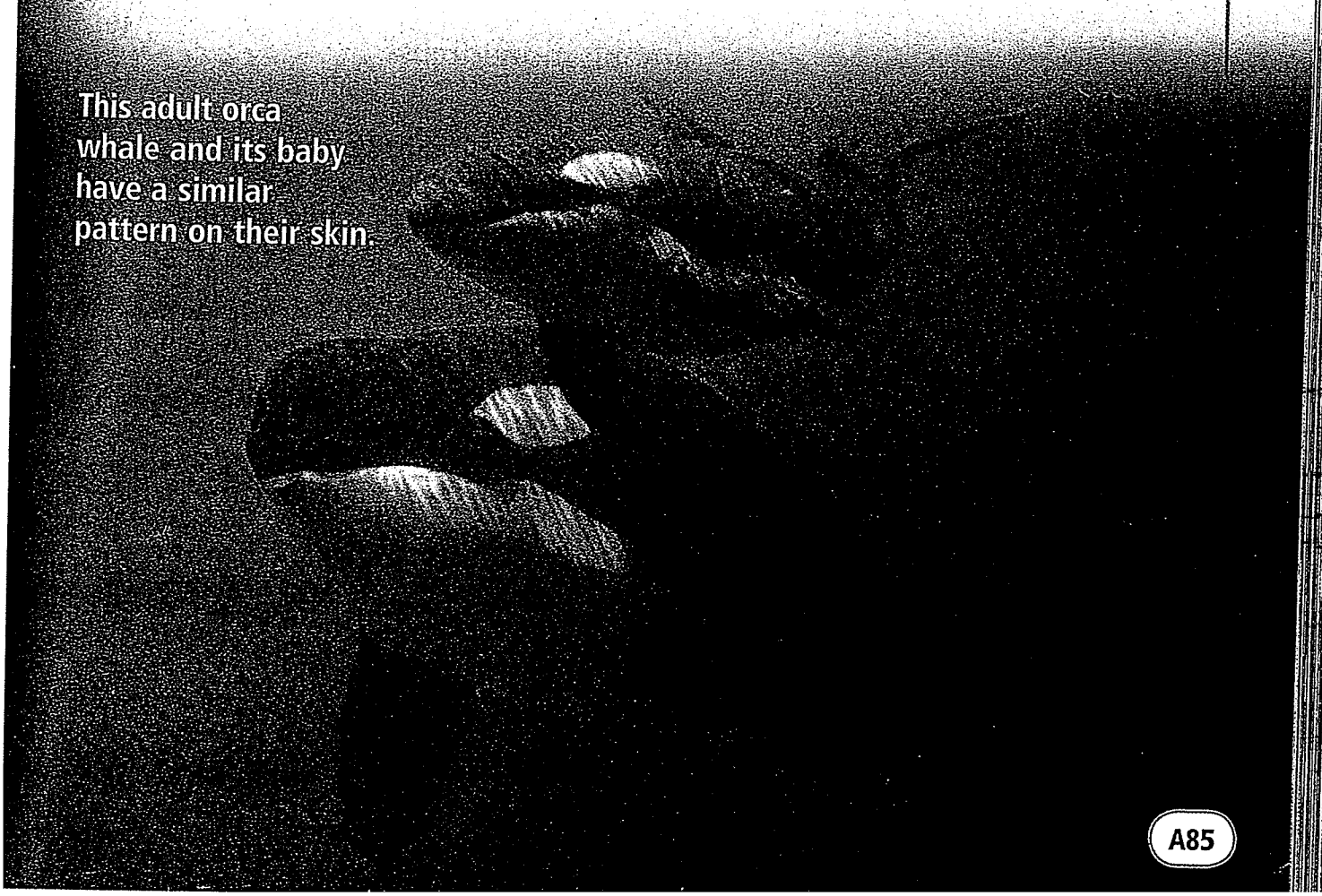
Although offspring and their parents may look similar, they do not look exactly alike. A young horse may grow to be taller or a different color than its parents. A child may have a different eye color than either parent. A grown tree may have fewer flowers or fruit than the tree from which it came.

Differences in appearance between parents and offspring are not extreme. Have you ever seen a turtle the size of a house? A turtle may grow to be larger than either of its parents. But a turtle cannot grow to be as large as a house. Similarly, a large animal, such as a giraffe, does not produce offspring that stay very small.



▲ **The adult penguin and its offspring do not look exactly alike.**

COMPARE AND CONTRAST **Compare ways in which plants and animals may resemble their parents.**



This adult orca whale and its baby have a similar pattern on their skin.

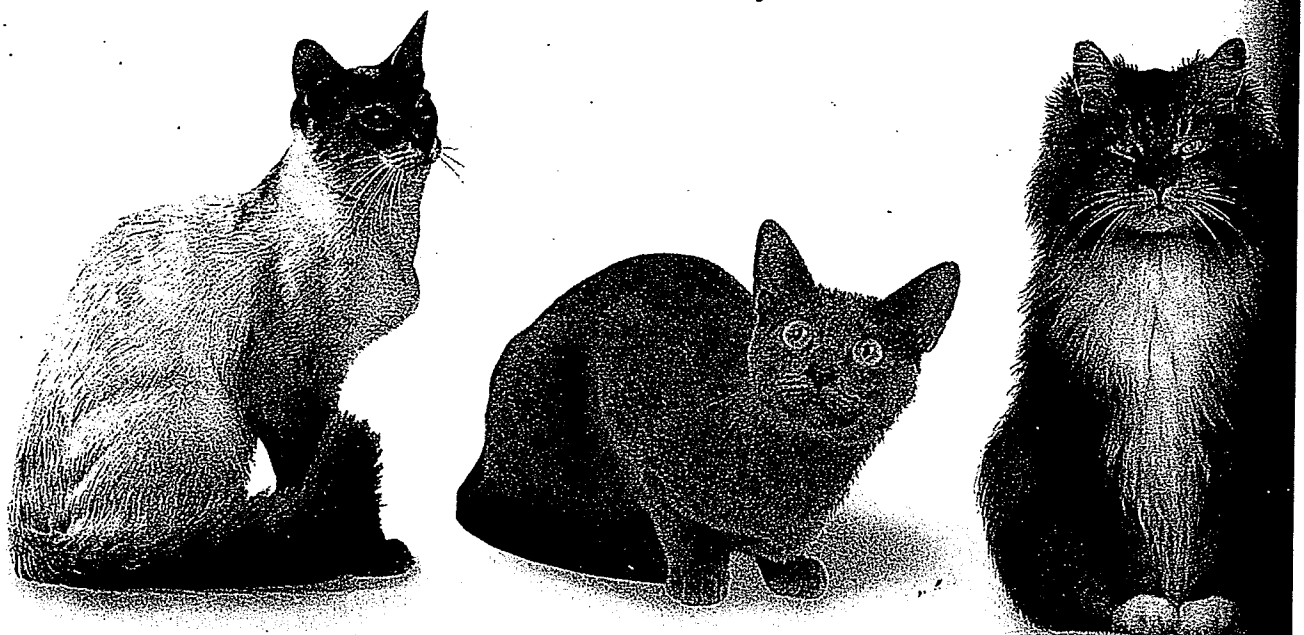
▲ These petunias come in many different colors.

Individuals Vary

In a crowd, you can see lots of different people—some are tall, some are short, some have blue eyes, some have brown eyes—but they are all humans. Although all people are humans, each person has different features.

There are also many differences within groups of plants and animals. One petunia flower may have red petals. Another petunia may have pink petals. A dog may have very short fur. Another dog may have so much fur that you can barely see its face! Petal color and fur length are just two examples of differences among individuals (ihn duh VIHJ oo uhlz). An **individual** is a single member of a species. Can you think of some other differences among individuals?

These are all domestic cats. Notice how different they look from one another. ▼



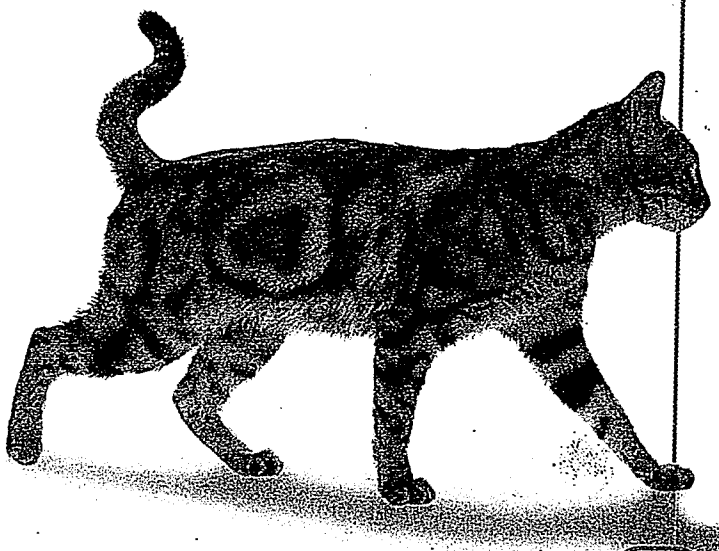
When living things reproduce, they pass on traits to their offspring. This explains why offspring usually look similar to their parents. Look at the three sheep shown here. The parents of the first sheep probably also had black heads. The parents of the second sheep likely had curled horns. The wooly third sheep probably had wooly parents, as well.

A living thing's environment may also affect its traits. For example, a plant that does not receive enough sunlight and water may not grow as tall as its parent plant.

Living things may also get traits from interacting with their environment. These traits are not passed on to their offspring. For example, suppose a young girl scrapes her arm. The scrape leaves a scar. She did not get this trait from her parents, and she will not pass it on to her children.

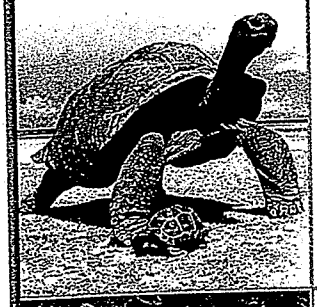
COMPARE AND CONTRAST **Name two traits that can be different among individuals.**

▲ These animals look different, but they are all sheep.



Lesson Wrap-Up

Visual Summary



Living things usually look similar to, but not exactly like, their parents.

Individuals of the same kind usually vary in appearance.

LINKS for Home and School

MATH Make an Organized List Suppose a cat has a litter of kittens. The mother cat has long, white fur and the father cat has short, black fur. What might the kittens look like? Make a list of the possible combinations of fur color and fur length.

TECHNOLOGY Compare and Contrast Fertilizer is a material that is put in soil to give it extra nutrients. Farmers use fertilizer as a tool for growing healthy crops. Suppose you had two plants that you gave the same amount of water and light. Imagine that you give fertilizer to only one of them. How do you think these individual plants would differ?

Review

1. **MAIN IDEA** Why do most offspring look similar to their parents?

2. **VOCABULARY** Define the term *individual*.

3. **READING SKILL: Compare and Contrast** How are the sheep on page A87 similar? How are they different?

4. **CRITICAL THINKING: Evaluate** You have two flowers that are the same color. Your friend says that the flowers are definitely the same species. Is this statement accurate? Explain.

5. **INQUIRY SKILL: Use Numbers** The number of petals for six flowers of the same kind are: *8, 7, 9, 7, 8, 6*. What can you infer about the number of petals usually found on this kind of flower?

TEST PREP

Which trait can be passed on from an adult human to a child?

A. scar

B. hair color

C. sunburn

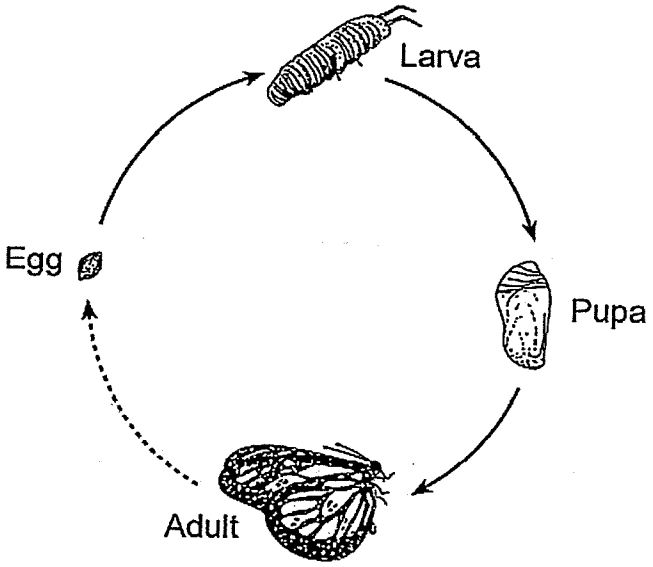
D. sprained ankle

Technology
Visit **www.eduplace.com/scp/** to learn more about how individuals vary.

EXIT TICKET

Name:_____	**Date:**_____
BCCSG	**Howard / Spelman**

1. The diagram below shows the development of a butterfly. This sequence of changes is called



(Not drawn to scale)

A hibernation
B migration
C a life span
D a life cycle

2. Which life process is common to all living things?
   A reproduction
   B germination
   C hunting for food
   D pollinating flowers

3. Frogs eat crickets. If the population of crickets in an area decreases, the number of frogs in the area will most likely
   A decrease
   B increase
   C remain the same

Grade:

Wednesday

Date: May 19

Learning Target: Describe different instincts that animals have to help them survive

REVIEW

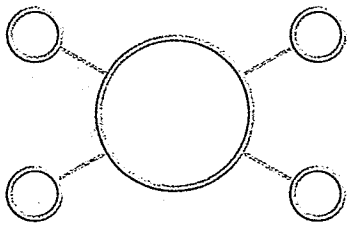
Learn by Reading

VOCABULARY

community	p. B15
population	p. B14
resource	p. B15

READING SKILL

Main Idea and Details
As you read, write down details that describe the ways in which organisms compete.

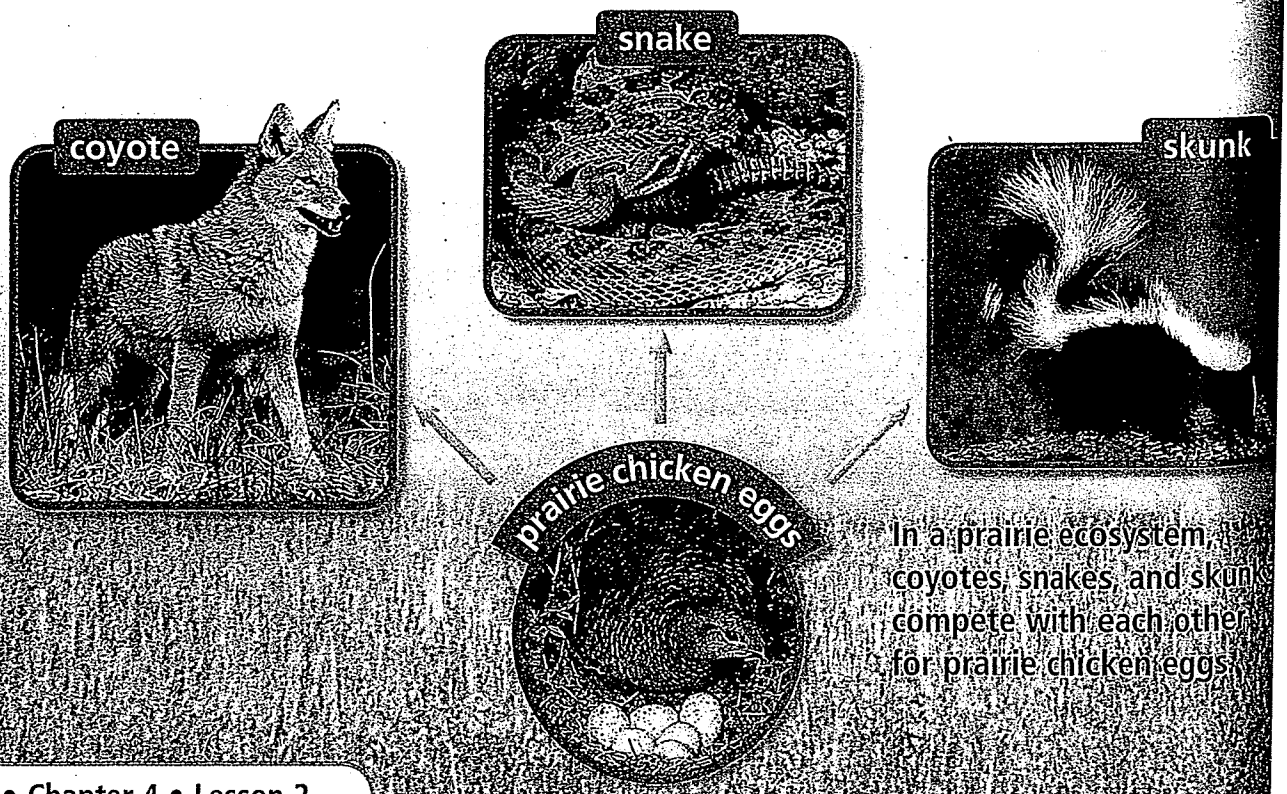


Living Things Compete

MAIN IDEA **Organisms compete for resources when they live in the same ecosystem and have similar needs.**

Competing for Food and Water

Look around. You, your classmates, your teachers, your family, and all the people who live in your neighborhood make up a population (pahp yuh LAY shuhn) of humans. A **population** is all the organisms of the same kind that live together in an ecosystem. All the ants living in a forest make up the ant population of that forest ecosystem. Every oak tree in a forest is a member of the oak tree population of that ecosystem.



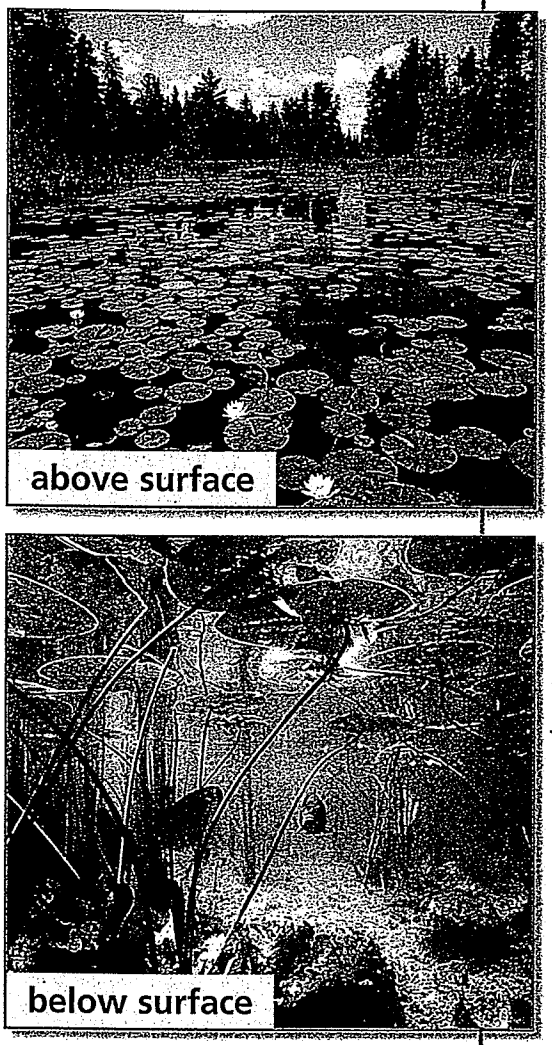
In a prairie ecosystem, coyotes, snakes, and skunk compete with each other for prairie chicken eggs.

All the populations in an ecosystem make up a community (kuh MYOO nih tee). A **community** is a group of plants and animals that live in the same area and interact with each other. The ants, oak trees, robins, and other living things in a forest ecosystem are part of the same community.

A pond ecosystem is home to animal populations such as fish, frogs, and insects. Plants such as cattails and populations of algae also live there. Living things in nature must be able to get enough resources (REE-sawrs ehz) to survive. A **resource** is a thing found in nature that is useful to organisms. Food, water, shelter, and air are resources. If there is not enough of a resource for all the organisms that need it, they must compete for the resource.

In a pond community, cattails and algae compete for nutrients in the water. Members of the same population may also compete for a resource. If there are not enough resources to meet the needs of all the organisms, some will die. For example, if there are too many frogs, some will not catch enough insects and will not survive.

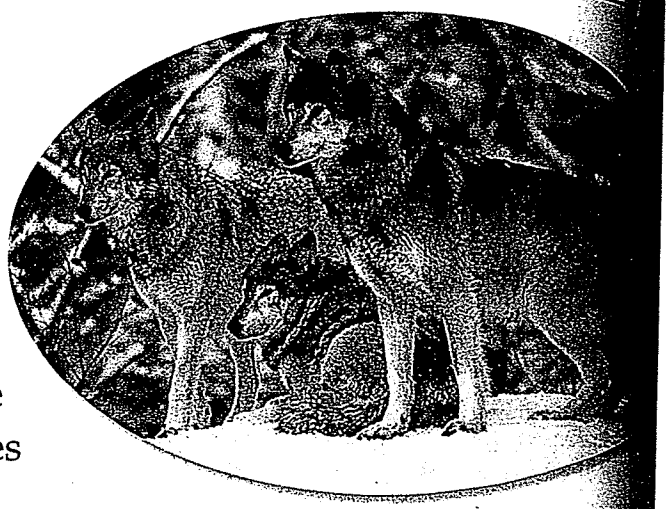
MAIN IDEA **What are four resources for which living things compete?**



▲ Pond Community
Competition in a community keeps populations from getting too large.

Competing for Space

In addition to food and water, organisms need living space. Many birds need tree branches and holes in tree trunks to build nests. Trees need space underground for their roots to spread out. They need space above ground for their leafy branches to capture energy from sunlight.

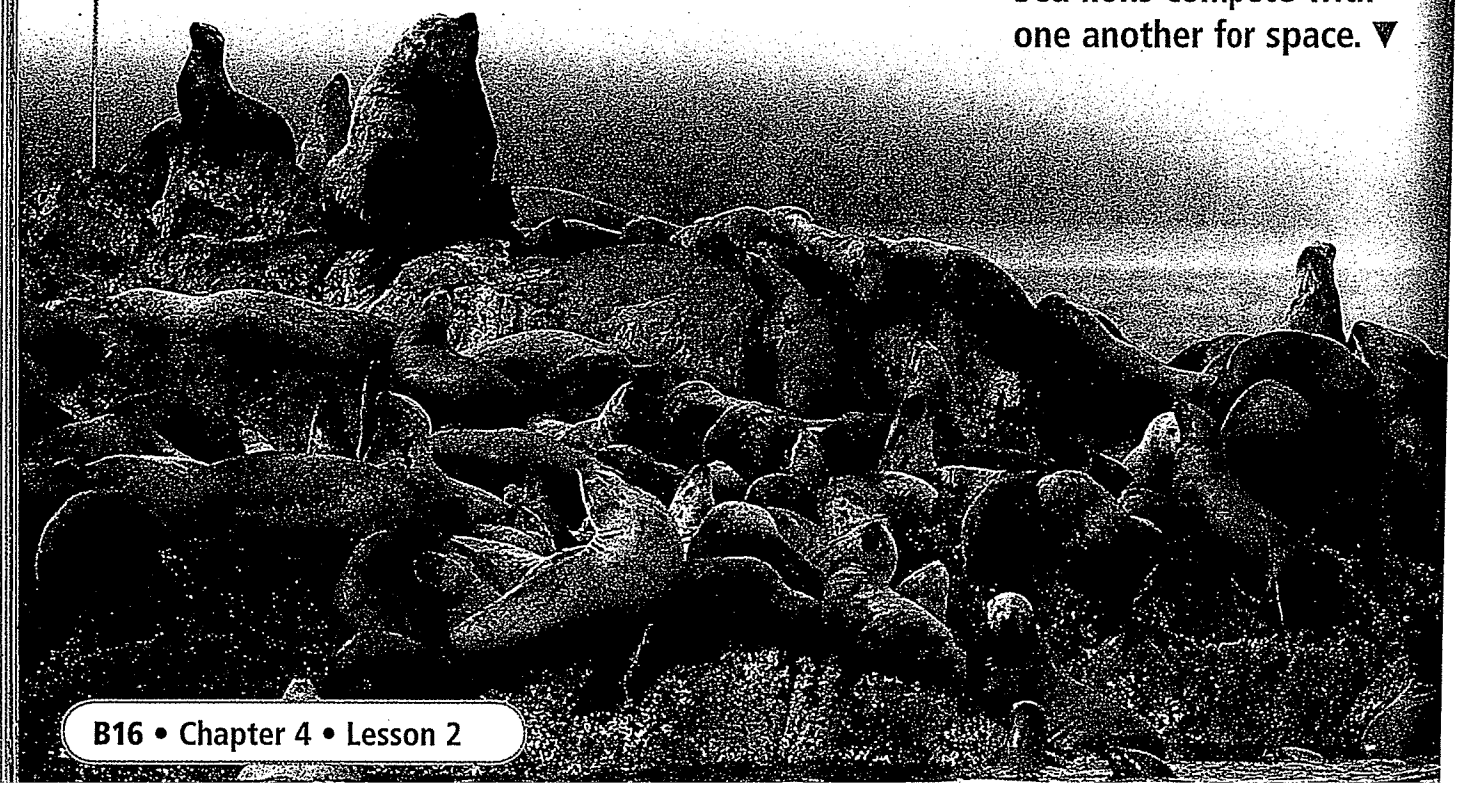


▲ Wolf packs may move to new areas to find more space.

Wolves live in family groups called packs. Sometimes there isn't enough space for all the wolf packs in an area to live and raise offspring. Some of the packs may leave the area to find more space.

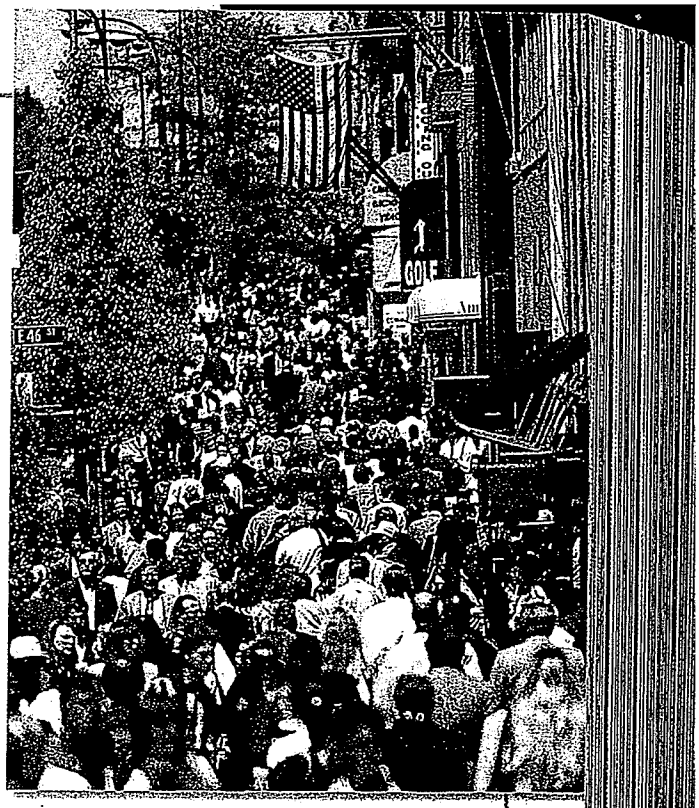
Sea lions live on rocks at the edge of the ocean. If a sea lion population in a rocky area becomes too crowded, the animals will fight for space. Some sea lions are injured or killed as a result of those fights.

Sea lions compete with one another for space. ▼



Moose are big animals. They need large areas where they can roam in search of food, water, and shelter. Sometimes humans build houses in areas where moose live. The moose no longer have enough space to meet their needs. As moose populations become crowded, moose wander into areas where humans live. This can be dangerous for both the moose and the humans.

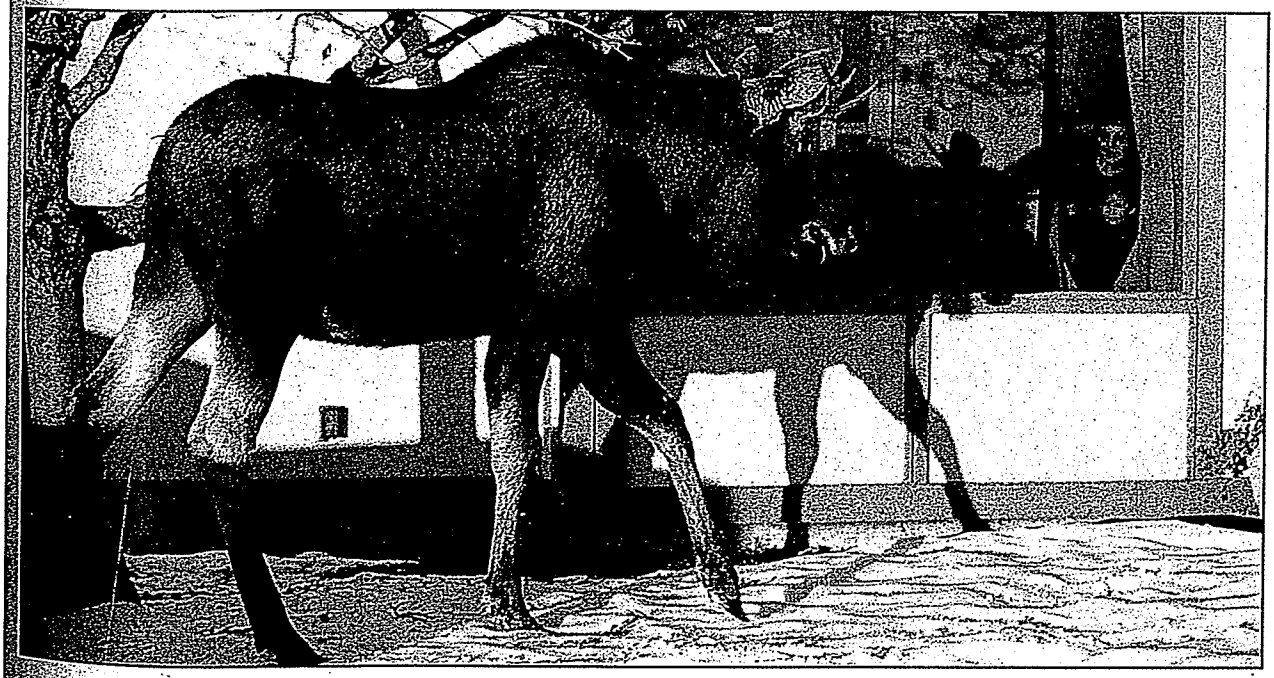
People need space, too. When people are crowded together, as in some large cities, they may compete for space. Competition for space might take place on a busy street or on a crowded bus.



▲ In a crowded city, people compete for space.

MAIN IDEA **What can happen if a population becomes too crowded?**

Moose often roam into areas where humans live. ▼



Resources and Population Size

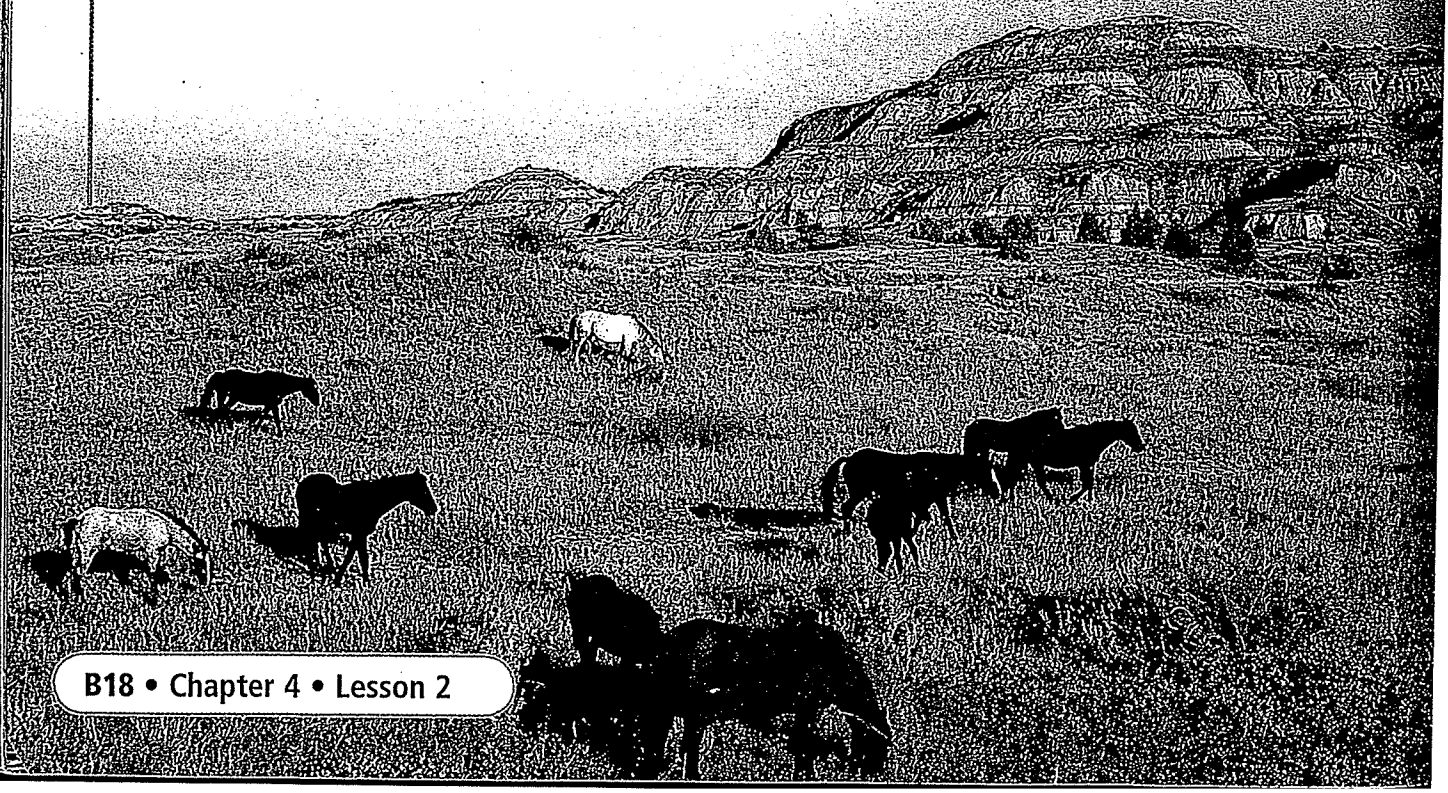
The resources in an area affect the size of populations that depend on those resources. One hundred years ago, wild horses roamed the desert in southern Nevada. They ate grasses and small shrubs that grew there. Some horses were killed by other animals, such as mountain lions. This kept the horse population from becoming too large.

As humans moved into the area, they hunted and killed many of the mountain lions. With fewer enemies, the wild horse population grew. More horses ate more grass and shrubs. As plant resources disappeared, horses began to starve and die. As the number of horses decreased, the plant population grew again.

Today, the number of wild horses does not change much. When the number of horses becomes too great for the amount of plant resources, the United States government captures some horses. The government finds new homes for them.

MAIN IDEA **What caused the wild horse population to decrease?**

The size of a population of wild horses is limited by the amount of food resources that are available. ▼



Learn by Reading

Adaptations Help Living Things

VOCABULARY

adaptation p. B22
behavior p. B22

READING SKILL

Problem-Solution Use the chart to identify an extreme environment. Give an example of an organism that has body structures that allow it to survive in that environment.

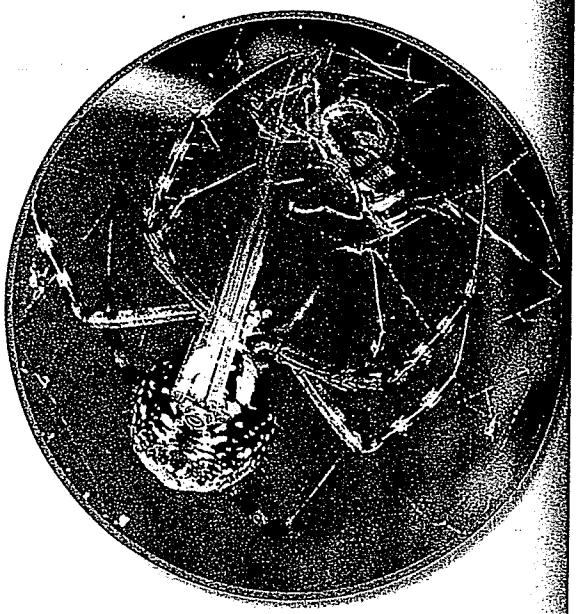
Problem	Solution

MAIN IDEA **Body parts and behaviors are adaptations that help an organism survive.**

Getting Food

Did you ever wish that you were invisible so you could take a snack without being seen? Many animals have adaptations (ad dap TAY-shuhnz) that let them become almost invisible. Then they can sneak up on food or hide from enemies. An **adaptation** is a behavior (bi HAYV-yur) or a body part that helps a living thing survive in its environment. A **behavior** is the way an animal typically acts in a certain situation.

A cat's ability to sneak up on a mouse is a behavior that is an adaptation. ▼

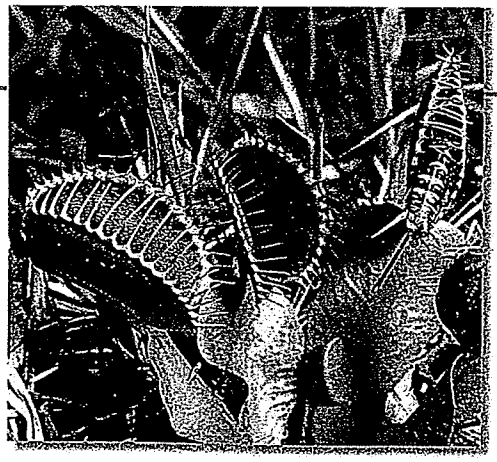


▲ Some spiders have body parts that they use to spin webs that trap insects.

Many types of animal behaviors are adaptations. A bee dancing to tell other bees where food can be found is an adaptation that helps that population of bees survive.

Adaptations for getting food help an organism survive. Certain adaptations let an organism get food that others can't. A hummingbird has a long, thin beak that can reach nectar deep inside a flower. The arms of sea stars have suction cups that they use to pull open the shells of clams.

Plants have adapted parts, too. Some rainforest plants have long stems that let them reach to the tops of trees. Although their roots are in the ground, their leaves are up high where sunlight can shine on them.



▲ Venus flytraps live where soil has few nutrients. They get nutrients by trapping insects.

PROBLEM AND SOLUTION **What two kinds of adaptations help a living thing survive?**

The long-necked giraffe can eat tree leaves that are out of reach of other animals. ►

Surviving Harsh Conditions

Living conditions in an alpine, high-mountain, ecosystem are harsh. Temperatures are low and it often snows. The land is steep and rocky. Organisms there have adaptations that help them survive.

The growing season is short. The fact that plants sprout, grow, and produce seeds quickly is an adaptation. Many plants are small. Small plants lose little water when it's windy.

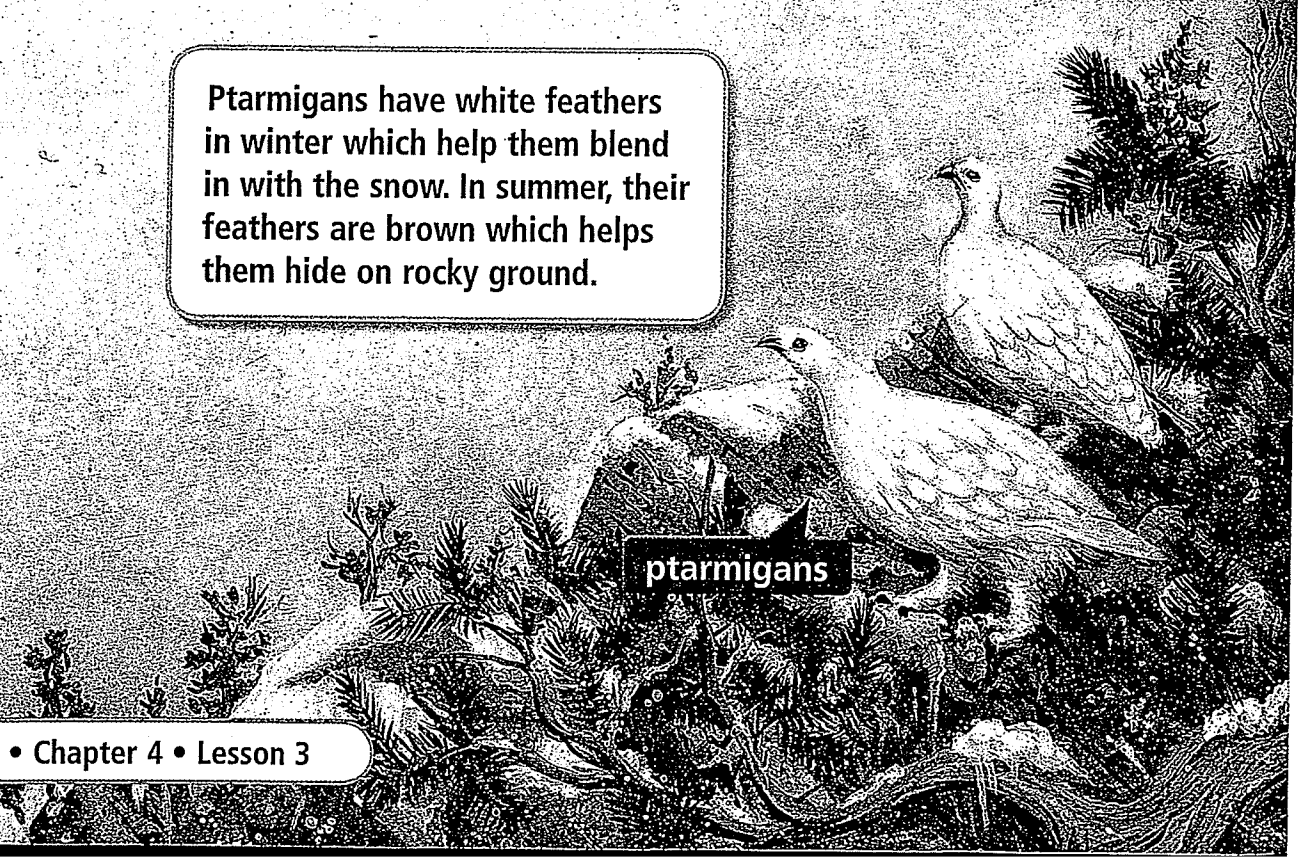
Animals also have adaptations that help them survive the cold. Thick fur and layers of fat keep some animals, such as marmots and sheep, warm. Some animals sleep during very cold periods.

Some plants and animals have adaptations that are slightly better than those of others. These organisms are more likely to survive than others of their kind.

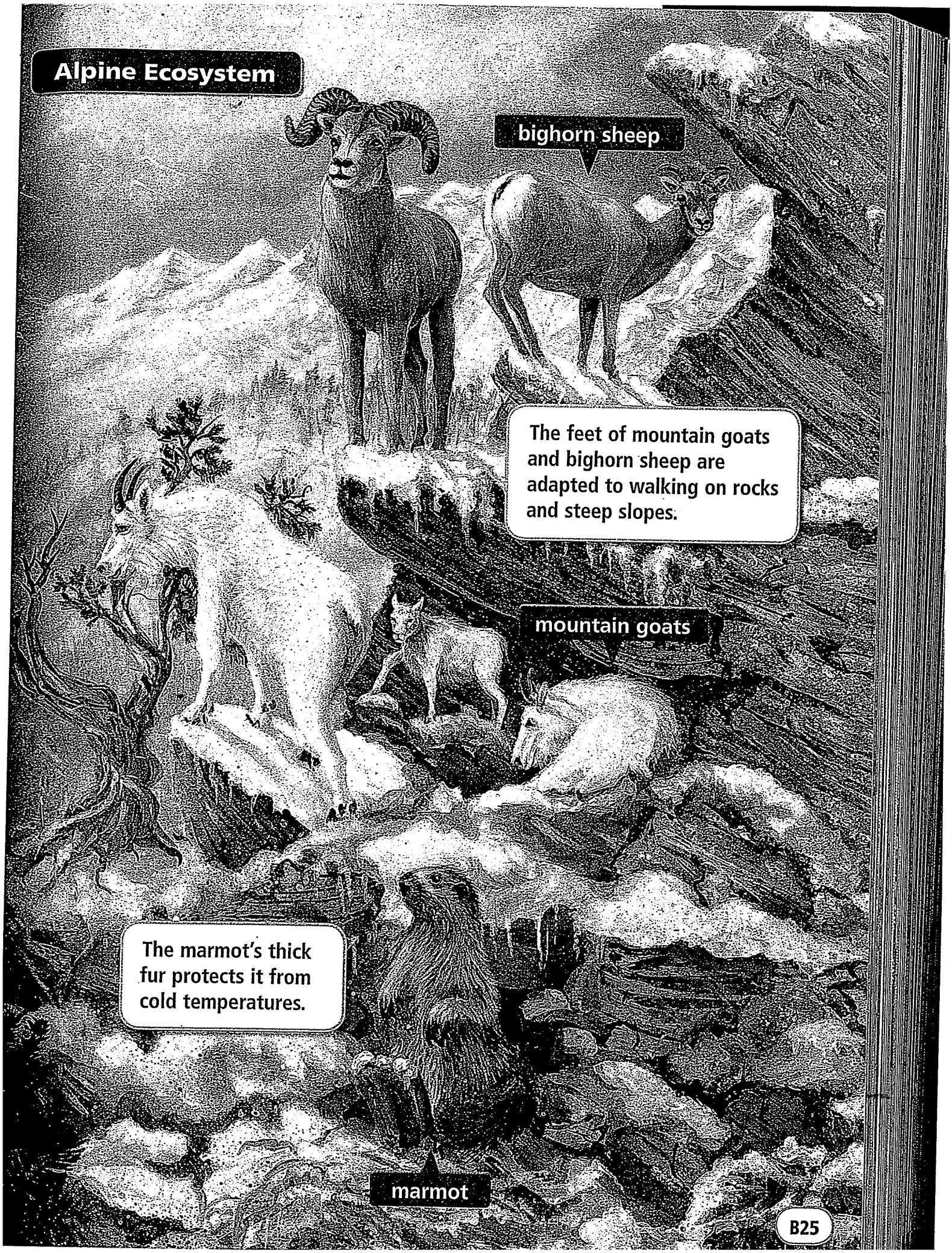
PROBLEM AND SOLUTION **Describe an adaptation that helps an animal survive in cold temperatures.**

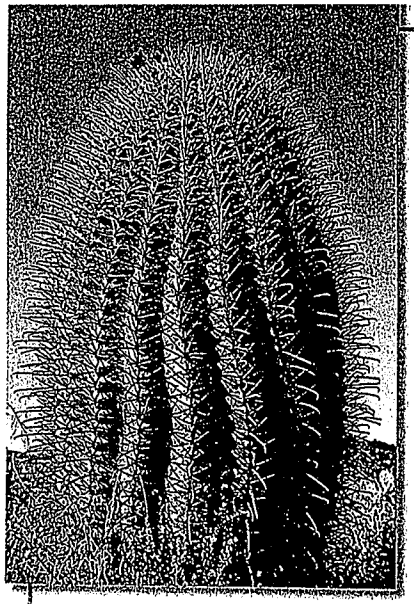
Needle-shaped leaves of some trees help prevent water loss.

Ptarmigans have white feathers in winter which help them blend in with the snow. In summer, their feathers are brown which helps them hide on rocky ground.



ptarmigans


Alpine Ecosystem
bighorn sheep
The feet of mountain goats and bighorn sheep are adapted to walking on rocks and steep slopes.
mountain goats
The marmot's thick fur protects it from cold temperatures.
marmot



▲ A barrel cactus is covered with long, sharp spines, which keeps animals away.

Self-Defense

Most organisms have adaptations for self-defense. These are behaviors or structures that help keep an organism from being eaten by enemies. For example, when an enemy approaches, many animals will run away or hide. Some plants have spines or thorns that prevent them from being eaten. Some plants and insects contain bad-tasting chemicals. The bad taste makes them a poor choice for a meal.

Some organisms have markings, such as spots or stripes that make it hard to see them in their environment. Still other plants and animals look like other organisms that are poisonous. These harmless organisms fool their enemies into thinking they are poisonous, so they are left alone.

PROBLEM AND SOLUTION **How does a self-defense adaptation help an organism survive?**

An octopus can change its color or release a cloud of ink to help it hide. ▼

Chapter 4 Review and Test Prep

Vocabulary

Complete each sentence with a term from the list.

1. All the living and nonliving things that exist and interact in one place are a/an _____.
2. A living thing is also called a/an _____.
3. The ability to cause change is _____.
4. A behavior that helps a living thing survive is a/an _____.
5. All living things of the same kind in an ecosystem are a/an _____.
6. Something found in nature that is useful to living things and can help them meet their needs is a/an _____.
7. The way an animal acts in a situation is called a/an _____.
8. Harmful chemicals in a water supply are a kind of _____.
9. The place where a plant or animal lives is its _____.
10. Plants and animals that live in the same area and interact with each other are members of a/an _____.

adaptation B21
behavior B22
community B1
ecosystem B10
energy B7
environment B
habitat B32
organism B8
pollution B34
population B14
resource B15

Test Prep

Write the letter of the best answer choice.

11. Which of the following is NOT a need of all living things?

A. water
B. energy
C. nutrients
D. carbon dioxide

12. Sea lions on the same crowded rock are competing for which resource?

A. space
B. energy
C. water
D. algae

13. An example of behavior is _____.

A. the long neck of a giraffe.
B. a spider spinning a web.
C. the thick fur of a polar bear.
D. the spines of cactus.

14. The environment of a blue whale is a/an _____.

A. ocean
B. desert
C. forest
D. mangrove swamp

EXIT TICKET

Name:_____	**Date:**_____
BCCSG	**Howard / Spelman**

1. Which statement about frogs is an example of an opinion?
   A Frogs lay eggs.
   B Frogs live in all 50 states.
   C Frogs are very unusual animals.
   D There are over 4,000 kinds of frogs.

2. In which example is the organism defending itself? A
   A fox smells food.
   B An owl sees a mouse.
   C A bee lands on a colorful flower.
   D A skunk produces an odor.

3. A prairie dog whistles loudly when it senses danger. When it whistles, all of the prairie dogs nearby run and hide in their burrows. Which sense helps the other prairie dogs receive this warning?
   A hearing
   B sight
   C smell
   D taste

Grade:

Thursday

Date: May 20

<u>Learning Target:</u> I can explain what a food chain is and the different roles within the food chain.

Learn by Reading

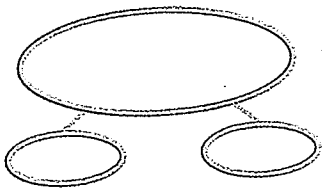
Getting Energy

VOCABULARY

cell p. B45
solar energy p. B44

READING SKILL

Main Idea and Details
As you read, record one main idea and two details for each section.

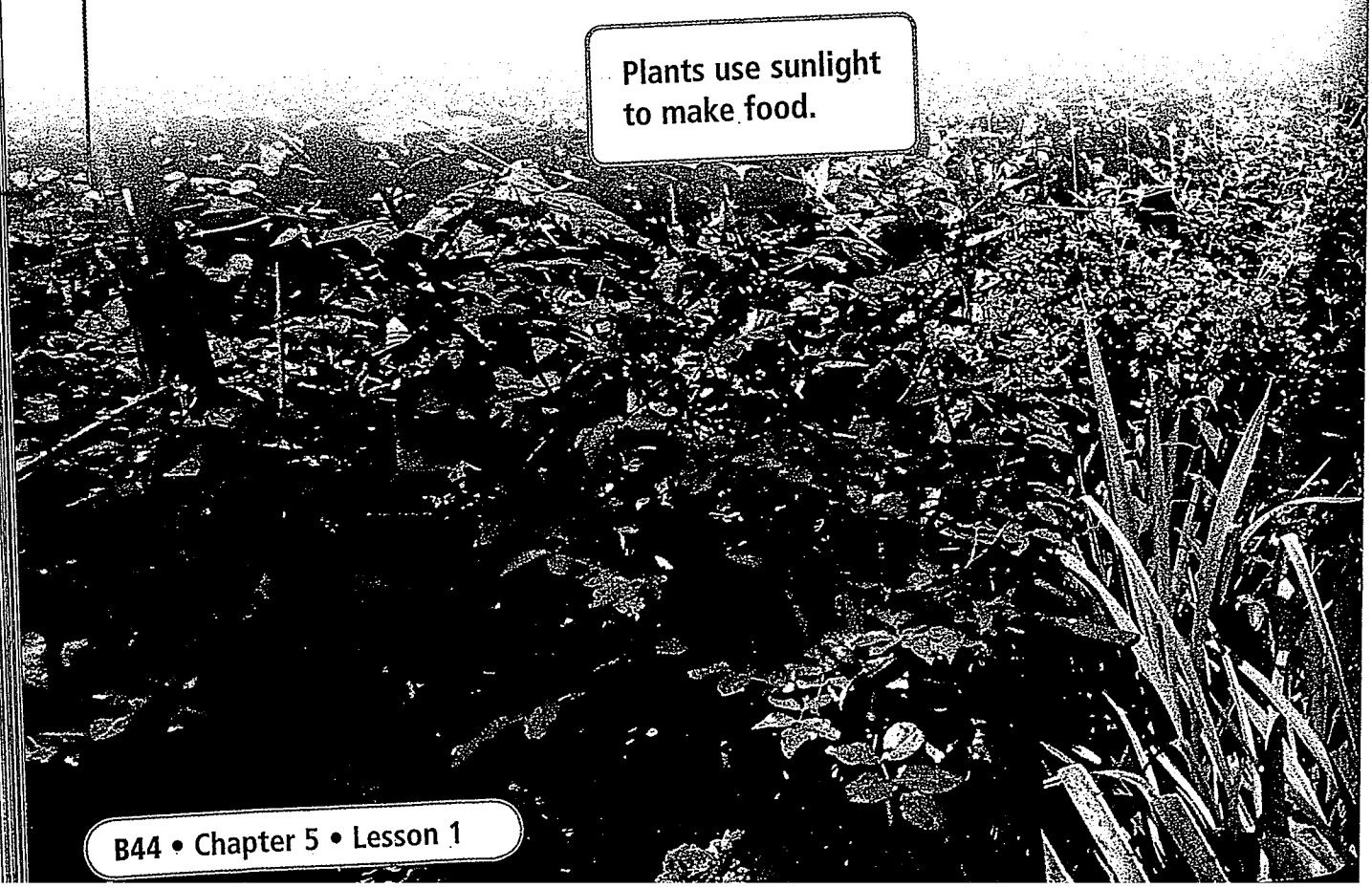


MAIN IDEA **All organisms need energy to grow and survive. The Sun is the source of energy for almost all living things.**

Energy from the Sun

Imagine a bright winter day. The air is cold, but your face feels warm as you tilt it toward the Sun. Sunlight feels warm on your face because light is energy. Energy is the ability to cause change.

Energy that comes from the Sun is called **solar energy**. Solar energy provides Earth with light and heat. Light and heat are energy. The Sun provides energy that plants need to make food. Most living things could not exist without solar energy.



Plants Make Food

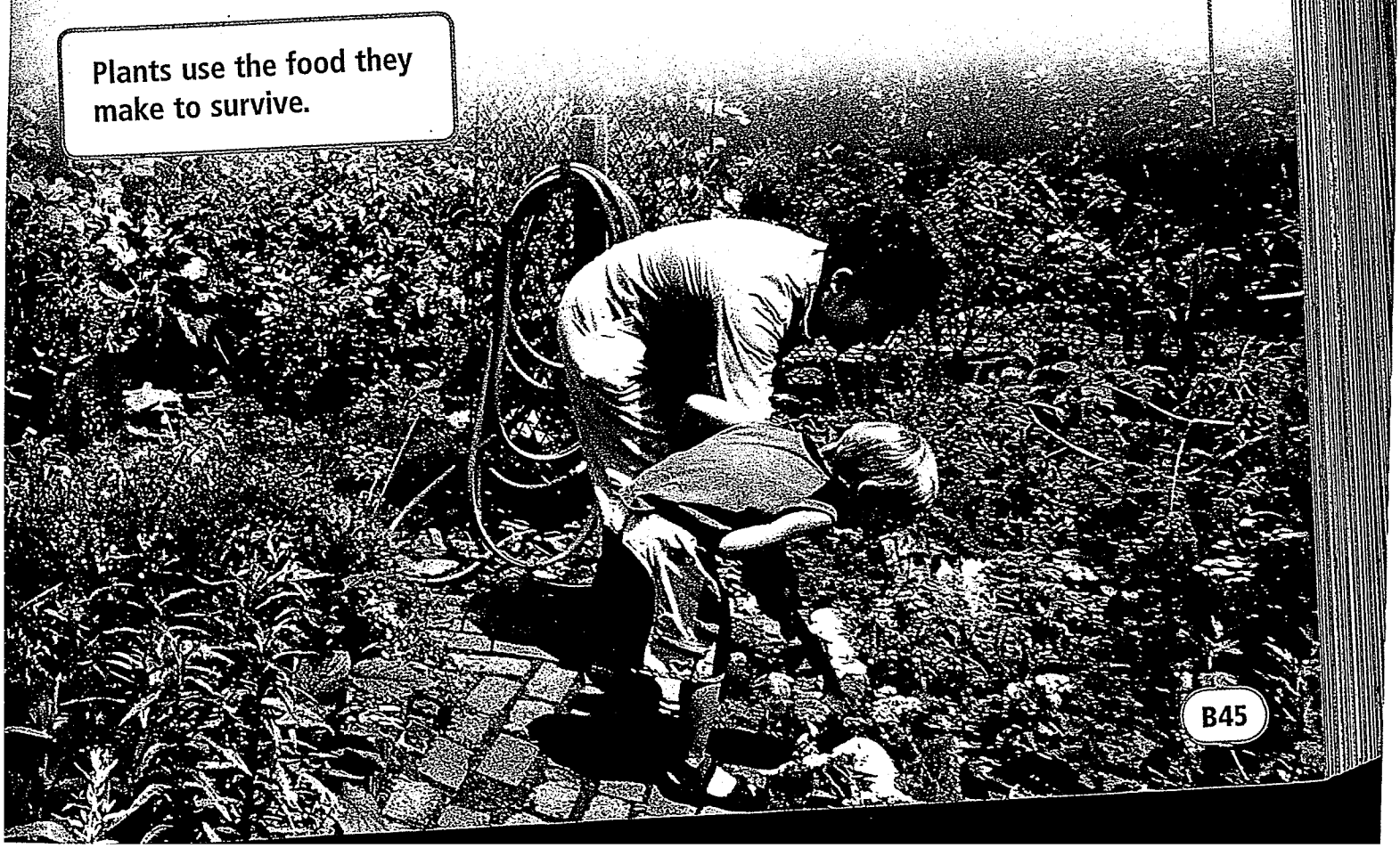
How does a plant get something to eat? It doesn't. Plants make food using water, air, and sunlight. The food they make is called sugar. And although plants don't "eat," they do use the food they make. Plants use the energy in the food they make to survive, to grow, and to make new plants. Dandelions use the food they make to produce new flowers. Apple trees make apples. Moss spreads and makes new plants.

Plants store some of the food they make in their cells (sehlz). A **cell** is the basic unit that makes up all living things. Plants can use this stored food when the Sun is not shining.

MAIN IDEA **What do plants need to make food?**

Almost all energy on Earth comes from the Sun. ▼

Plants use the food they make to survive.



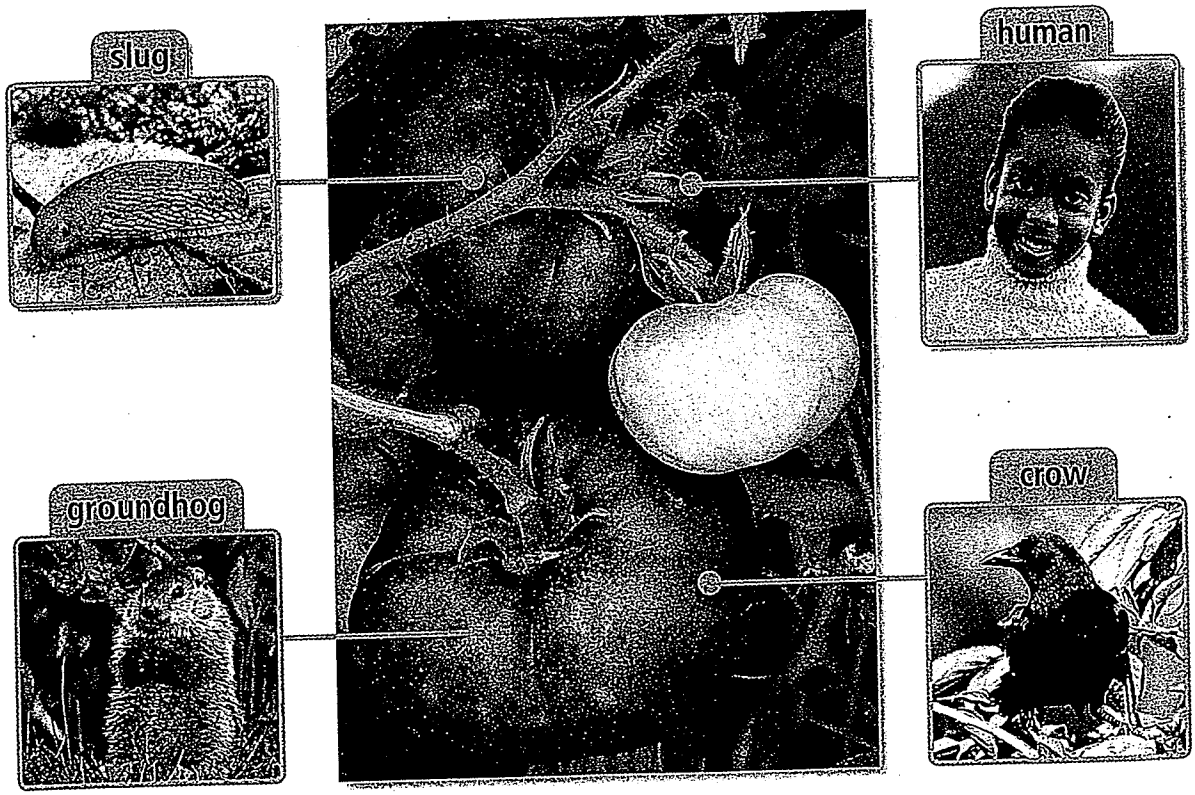
Animals Get Energy from Plants

Unlike plants, animals can't make food. Animals must take in food in order to get the energy that they need to survive. When an animal eats, the energy is transferred from the food source to that animal. Many animals eat plant parts. Each time an animal eats a plant, energy is transferred from the plant to that animal.

Not all of the energy that a plant gets from the Sun is transferred to an animal that eats the plant. Some energy is used by the plant for its survival. Some is stored in the plant's cells.

MAIN IDEA **How do animals get energy from plants?**

A tomato plant stores energy from the Sun. Animals get some of this energy by eating the plant.



Lesson Wrap-Up

Visual Summary

Energy from the Sun is called solar energy.

Plants use energy from the Sun to make food.

Animals that eat plants get energy from plants.

LINKS for Home and School

WRITING Expository People have been growing crops for thousands of years. Modern scientists use technology to improve crops. Research the history of farming. Write a paragraph about a new technology that farmers are using today.

HEALTH Make a Chart Nutrients are in food. Nutrients include sugar, protein, fat, vitamins, and minerals. List the main ingredients of your favorite food. Make a chart that shows each ingredient, its animal or plant source, and the nutrients it provides.

Review

1. **MAIN IDEA** Why do living things need energy?

2. **VOCABULARY** Write a sentence using the term *solar energy*.

3. **READING SKILL Main Idea and Details** List three details that support the idea that some animals get energy from plants.

4. **CRITICAL THINKING: Synthesize** A population of grass-eating leafhoppers live in a field. What would happen if all the grass in the field died?

5. **INQUIRY SKILL: Compare** How does the way plants get energy compare with the way animals get energy?

TEST PREP

Plants survive by ___.

A. getting food from water in the soil

B. making food from water, air, and sunlight

C. getting food from the air

D. using energy from animals

Technology
Visit www.eduplace.com/scp/ to find out more about how living things get energy.

Learn by Reading

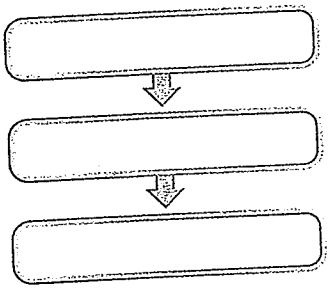
Food Chains

VOCABULARY

food chain	p. B50
producer	p. B51
consumer	p. B51
carnivore	p. B51
herbivore	p. B51
omnivore	p. B51

READING SKILL

Sequence Use the chart to trace the flow of energy in a food chain. Start with the Sun.



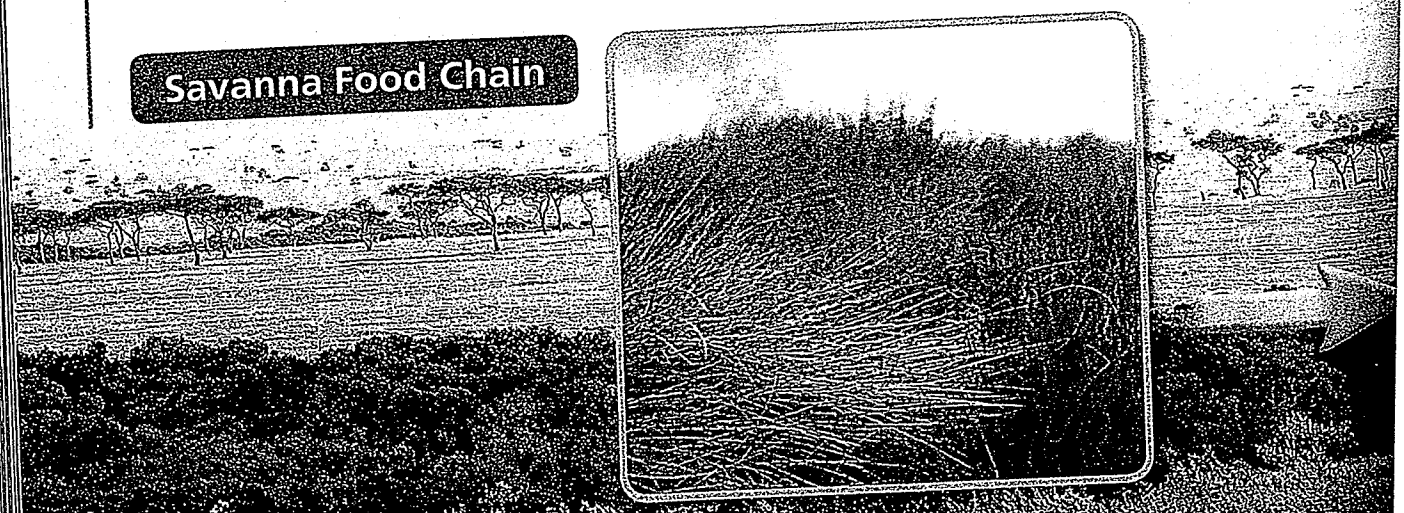
MAIN IDEA **When one animal eats another animal or eats a plant, it becomes part of the flow of energy in a food chain.**

Links in the Chain

Suppose you labeled each link of a paper chain with the name of an organism. If each organism was linked to an organism that it used for food, you would have a model of a food chain. A **food chain** is the path that energy takes through a community as one living thing eats another.

All animals depend on plants for their energy. When an insect eats a plant and then a frog eats that insect, energy is passed from organism to organism. The plant produced its own food using the energy in sunlight. Some of the Sun's energy captured by the plant passed to the insect and then to the frog.

Savanna Food Chain



Producer Savanna grass uses sunlight to make food.

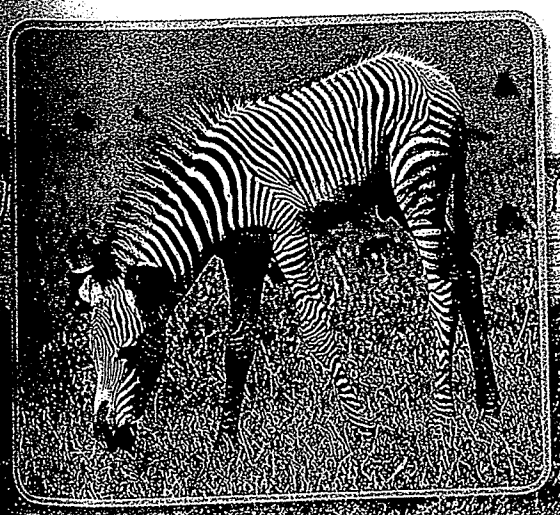
Parts of a Food Chain

No matter what organisms are part of a food chain, the Sun is always the first link in the chain. Plants are the second link. A plant is called a **producer** (pruh DOO-sur) because it produces its own food.

An animal is a **consumer** (kuhn SOO mur). A consumer is an organism that eats other living things in order to get energy. Consumers are classified by their food source. An animal that eats only other animals is a **carnivore** (KAHR nuh vawr). Lions, hawks, and spiders are carnivores.

An animal such as a zebra, horse, or deer that eats only plants is an **herbivore** (HUR buh vawr). An animal that eats both plants and animals is an **omnivore** (AHM-nuh vawr). Most humans are omnivores, although some people are vegetarians. That means they don't eat meat. Producers, carnivores, herbivores, and omnivores are all parts of a food chain.

SEQUENCE **Why can't a consumer be the first link in a food chain?**

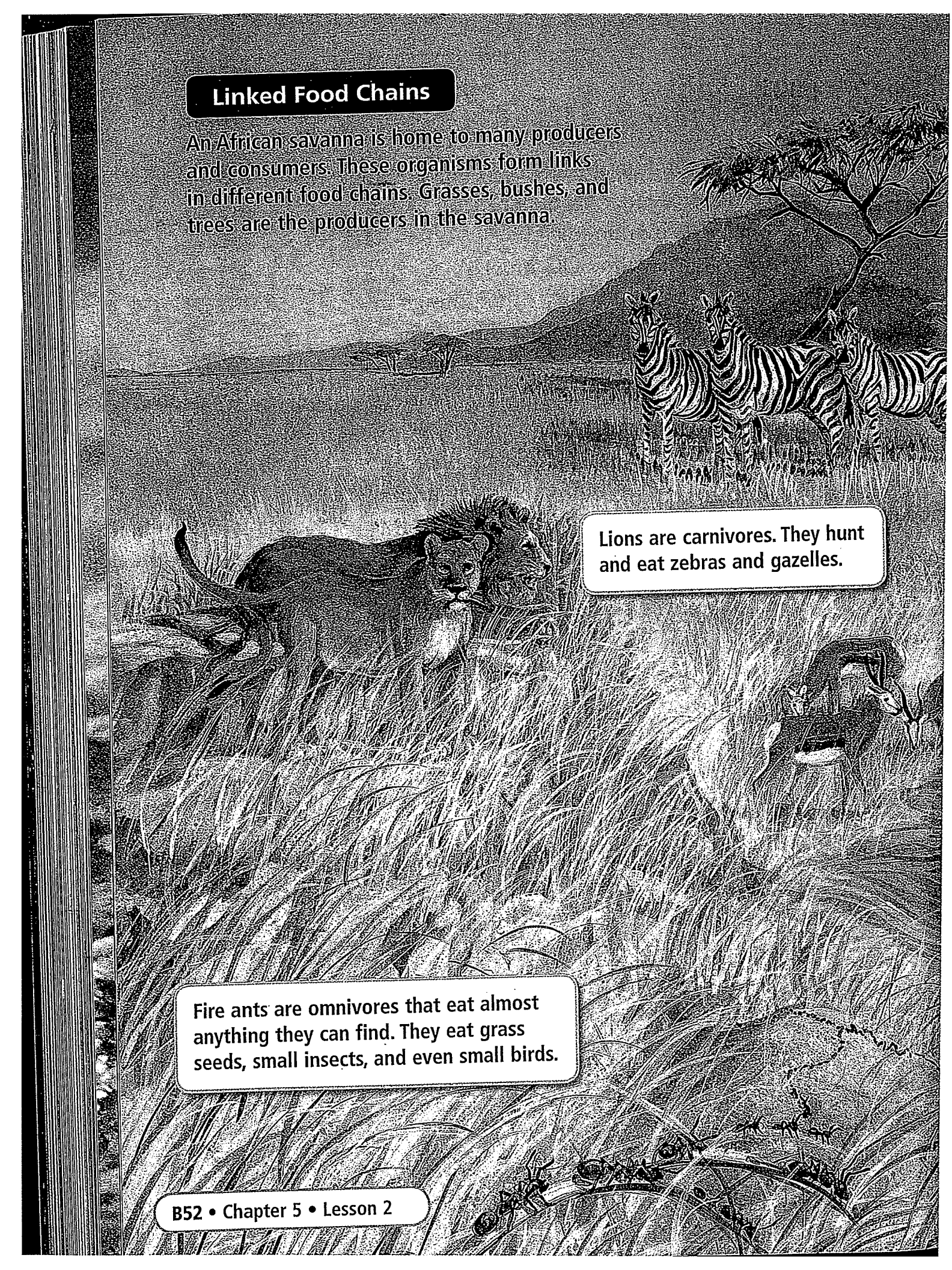


Herbivore The zebra is a consumer that eats only plants.

Carnivore The lion is a consumer that eats only other animals.

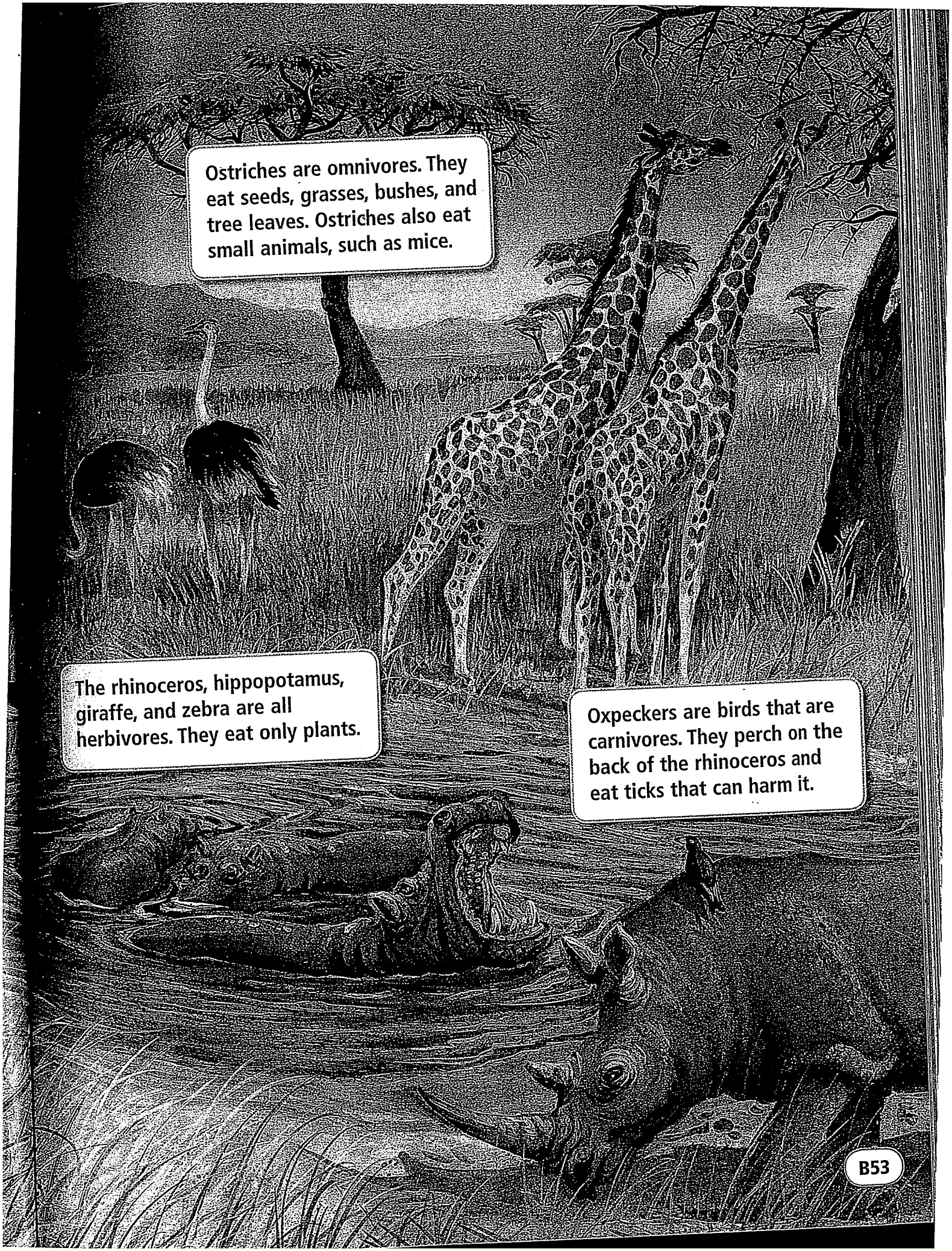
Linked Food Chains

An African savanna is home to many producers and consumers. These organisms form links in different food chains. Grasses, bushes, and trees are the producers in the savanna.



Lions are carnivores. They hunt and eat zebras and gazelles.

Fire ants are omnivores that eat almost anything they can find. They eat grass seeds, small insects, and even small birds.


Ostriches are omnivores. They eat seeds, grasses, bushes, and tree leaves. Ostriches also eat small animals, such as mice.
The rhinoceros, hippopotamus, giraffe, and zebra are all herbivores. They eat only plants.
Oxpeckers are birds that are carnivores. They perch on the back of the rhinoceros and eat ticks that can harm it.

Energy from Food

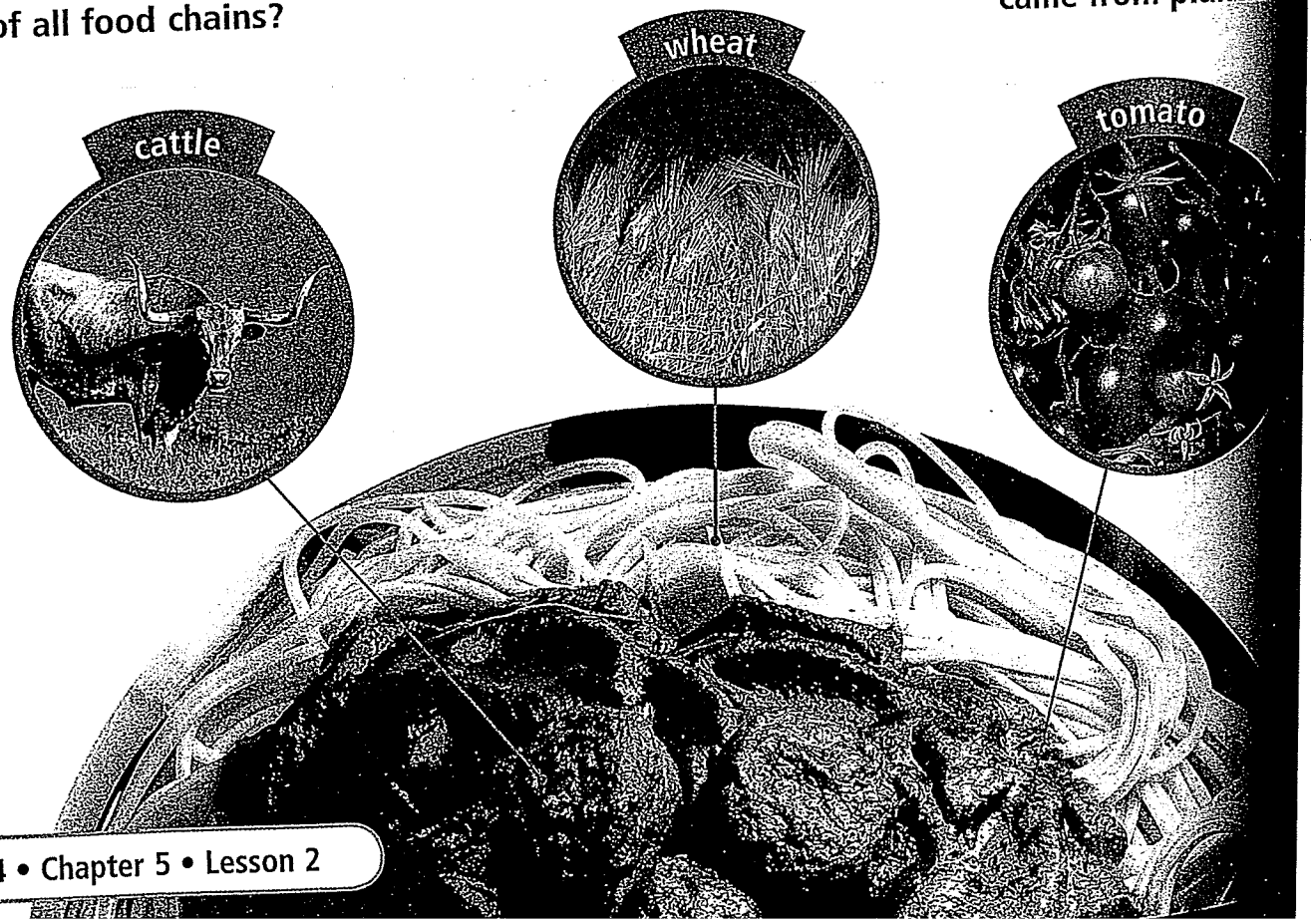
How are the living things shown here linked by a flow of energy? Grass uses solar energy to make and store food in its cells. When cattle eat grass, some of the stored energy is transferred to the cells of the animal's body. Some of this energy is stored in the cells, which may eventually end up in the meatballs. When a person eats this meal, some of the energy is transferred into that person's cells.

A tomato plant also uses solar energy to make food. When people eat tomatoes, some of the energy that was stored in the tomato is transferred to them.

Spaghetti is made from wheat. Wheat plants use solar energy to make food. Humans get some of this stored energy when they eat spaghetti. Plants are always the first living link in a food chain. The person who eats a meal is the last link in the food chain.

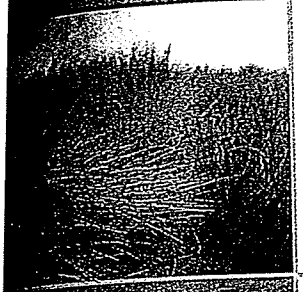
SEQUENCE **What organisms are at the beginning of all food chains?**

The energy from the food in this meal originally came from plants.

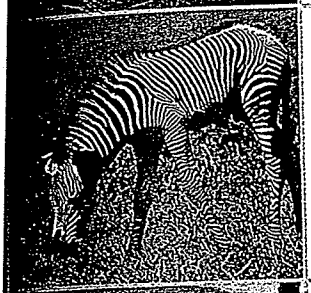


Lesson Wrap-Up

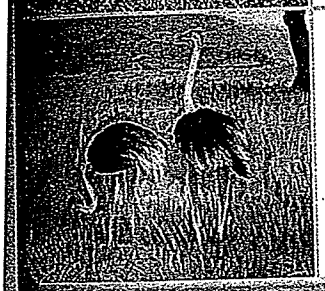
Visual Summary



Plants are producers. Plants are the first living link in every food chain.



Herbivores eat only plants. Carnivores eat only other animals.



Animals that eat plants and also eat other animals are omnivores.

LINKS for Home and School

MATH Multiply With 100 One 8-pound eagle must eat 8 rabbits to get enough energy to survive. Each rabbit must eat 100 pounds of grass. How many pounds of grass must be in the food chain so that one eagle can get enough energy?

LITERATURE Write a Song or Poem Some poems or songs repeat lines, and then add a new line at the end of each verse. One popular song of this kind is "I Knew an Old Lady Who Swallowed a Fly." Write a song or a rhyme about a food chain using this repeating style.

Review

1. **MAIN IDEA** What is a food chain?

2. **VOCABULARY** Write a short paragraph using the terms *producer* and *consumer*.

3. **READING SKILL: Sequence** Describe the correct sequence of a food chain that has a carnivore, a producer, and an herbivore.

4. **CRITICAL THINKING: Analyze** What are the relationships among a carnivore, an herbivore, and an omnivore?

5. **INQUIRY SKILL: Classify** Suppose an animal eats only mosquitoes. Is the animal a producer or a consumer? If you classify it as a consumer, what kind of consumer is it?

TEST PREP

Which of the following is an example of an herbivore?

A. rabbit

B. lion

C. maple tree

D. hawk

Technology

Visit **www.eduplace.com/scp/** to discover more about food chains.

Lesson 3

What Are Some Different Food Chains?

Why It Matters...

Food chains exist wherever living things are found. In an ocean food chain, tiny floating plants and seaweed use solar energy to make food. The fish eat the plants and seaweed. Later, some of the fish may become a meal for a shark.

PREPARE TO INVESTIGATE

Inquiry Skill

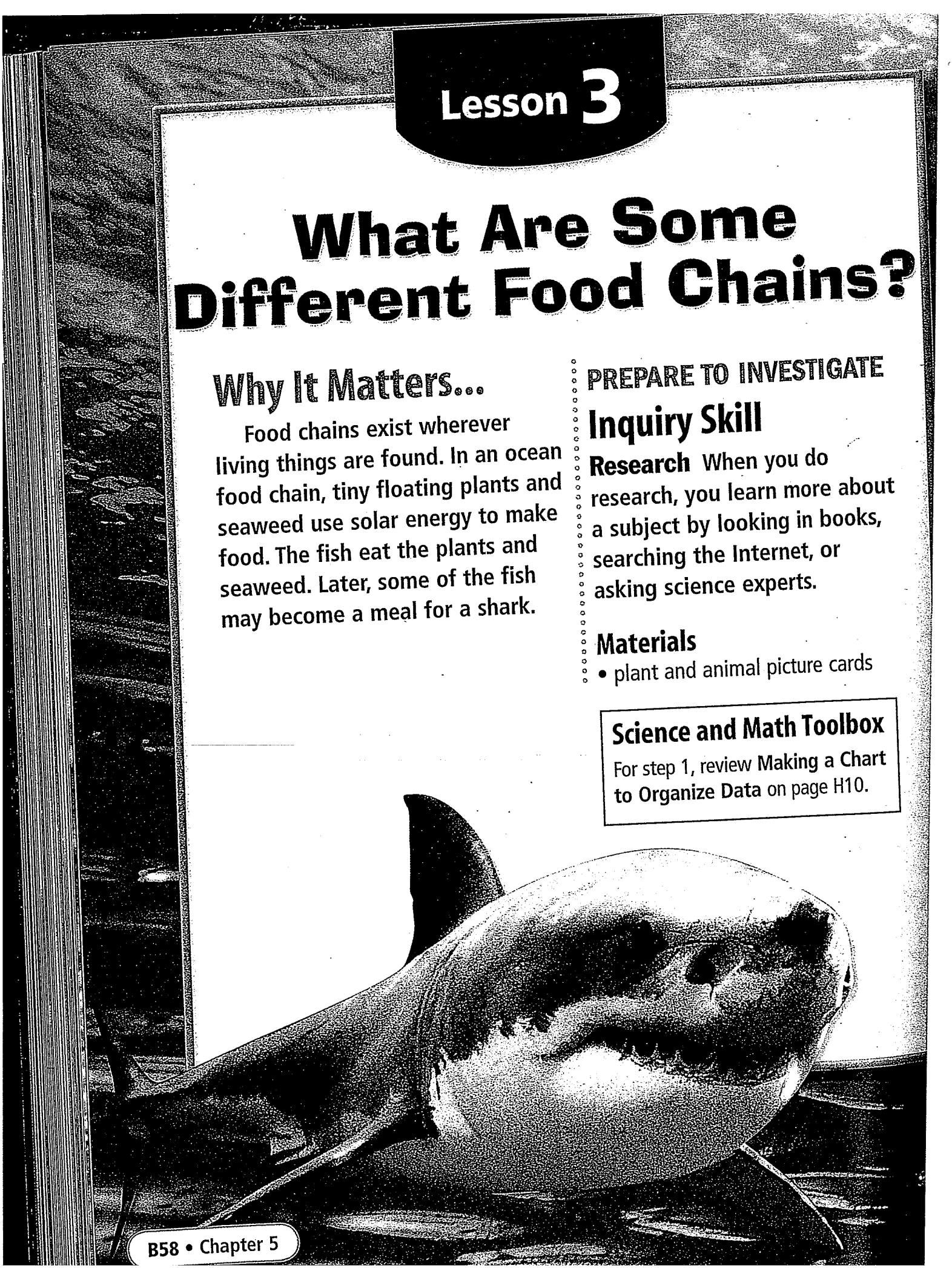
Research When you do research, you learn more about a subject by looking in books, searching the Internet, or asking science experts.

Materials

- plant and animal picture cards

Science and Math Toolbox

For step 1, review **Making a Chart to Organize Data** on page H10.



Investigate

Match Things Up

Procedure

1. **Collaborate** Work in a group. In your *Science Notebook*, make a chart like the one shown.

2. **Classify** Cut out a set of plant and animal picture cards provided by your teacher. Find cards that show plants and animals that live in a desert. Group these cards together. Write the names of these organisms in your chart.

3. **Research** Repeat step 2 for an ocean environment and for a rainforest environment. If necessary, use reference books or the Internet to check where an organism lives.

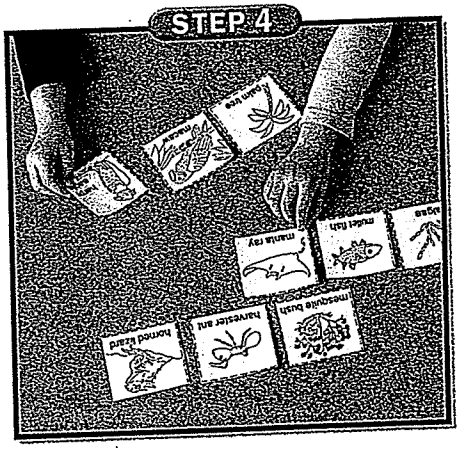
4. **Use Models** When all of the organisms have been classified in your chart, make a food chain for each environment. Line the cards up in order. Each food chain should start with a producer. Write or draw each food chain in your *Science Notebook*.

STEP 1

Environments		
Desert	Ocean	Rainforest

STEP 2

STEP 4



Conclusion

1. **Infer** What is the role of the Sun in each food chain?

2. **Communicate** Explain why you arranged each food chain the way you did.

Investigate More!

Solve a Problem

Suppose you want to set up an aquarium with several kinds of fish. What would you need to know about the fish's food chains?

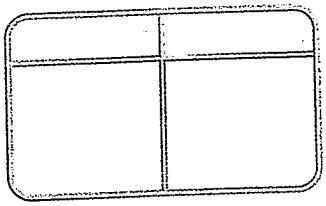
Learn by Reading

VOCABULARY

aquatic habitat	p. B60
terrestrial habitat	p. B62

READING SKILL

Compare and Contrast Use a chart to compare and contrast food chains in aquatic habitats and terrestrial habitats.



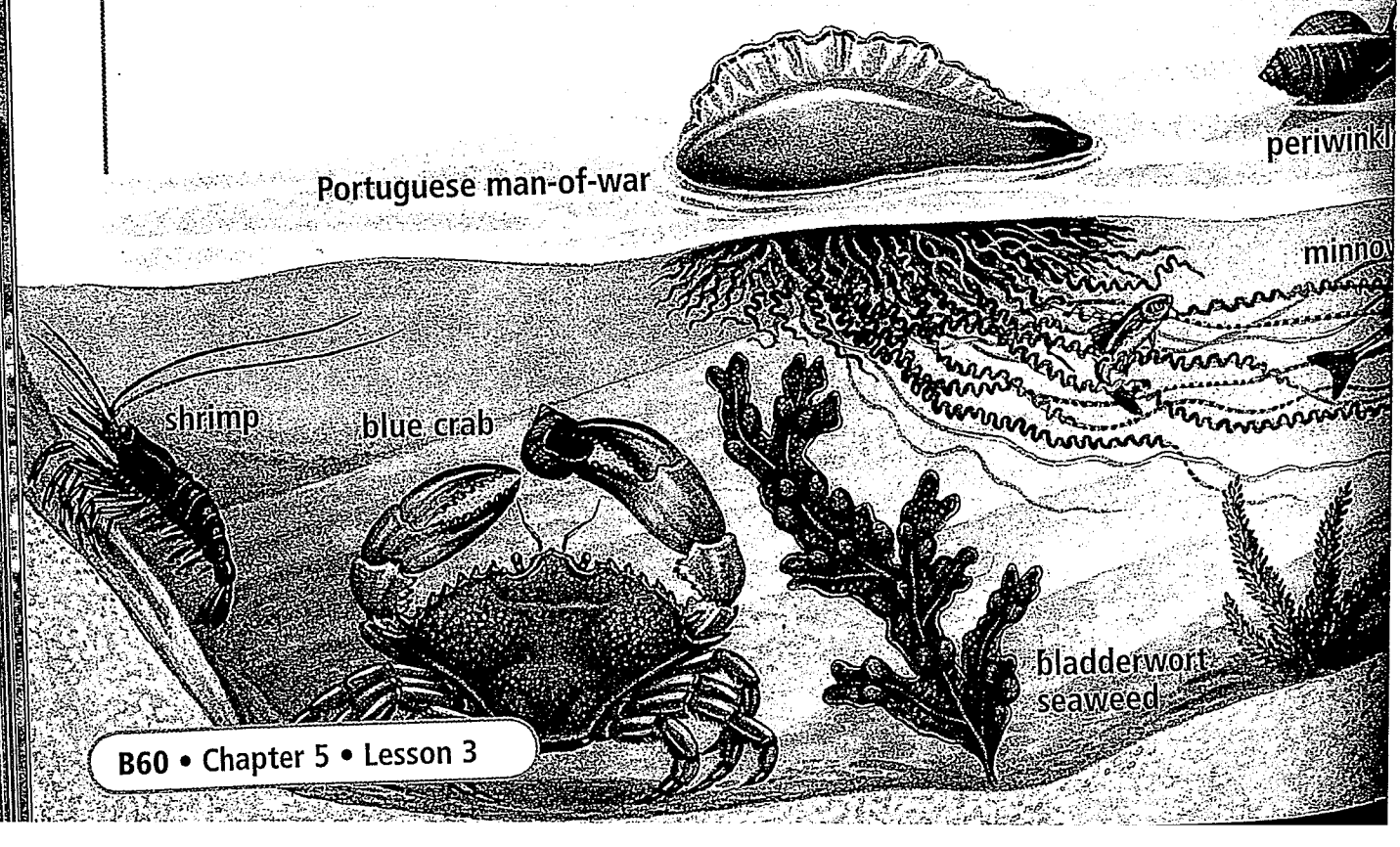
Food Chains in Environments

MAIN IDEA **Food chains exist wherever living things are found. The organisms in each food chain vary based on their environment.**

Food Chains in Water

Animals live in many different places, or habitats. Tide pools are the habitat of some ocean animals. A tide pool is an area at the edge of the ocean where water collects in spaces between rocks.

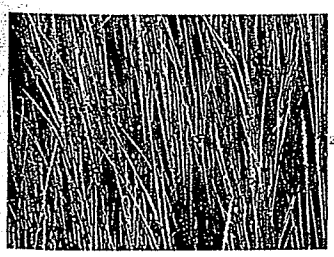
A tide pool is one kind of aquatic (uh-KWAT ihk) habitat. An **aquatic habitat** is a place where organisms live in or on water. In tide pools, seaweed and algae are the producers. Like producers on land, they use the energy from sunlight to make food.



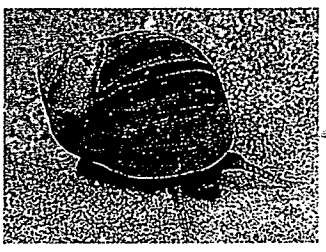
An aquatic habitat is also home to herbivores, carnivores, and omnivores. Look at the picture of the tide pool. What food chains can you find?

COMPARE AND CONTRAST **Compare a producer that lives in an aquatic habitat with one that lives on land.**

Tide Pool Food Chain



Cordgrass
This grass captures energy from the Sun to make food.



Periwinkle snail
This snail eats and scrapes plants from rocks with its mouth.

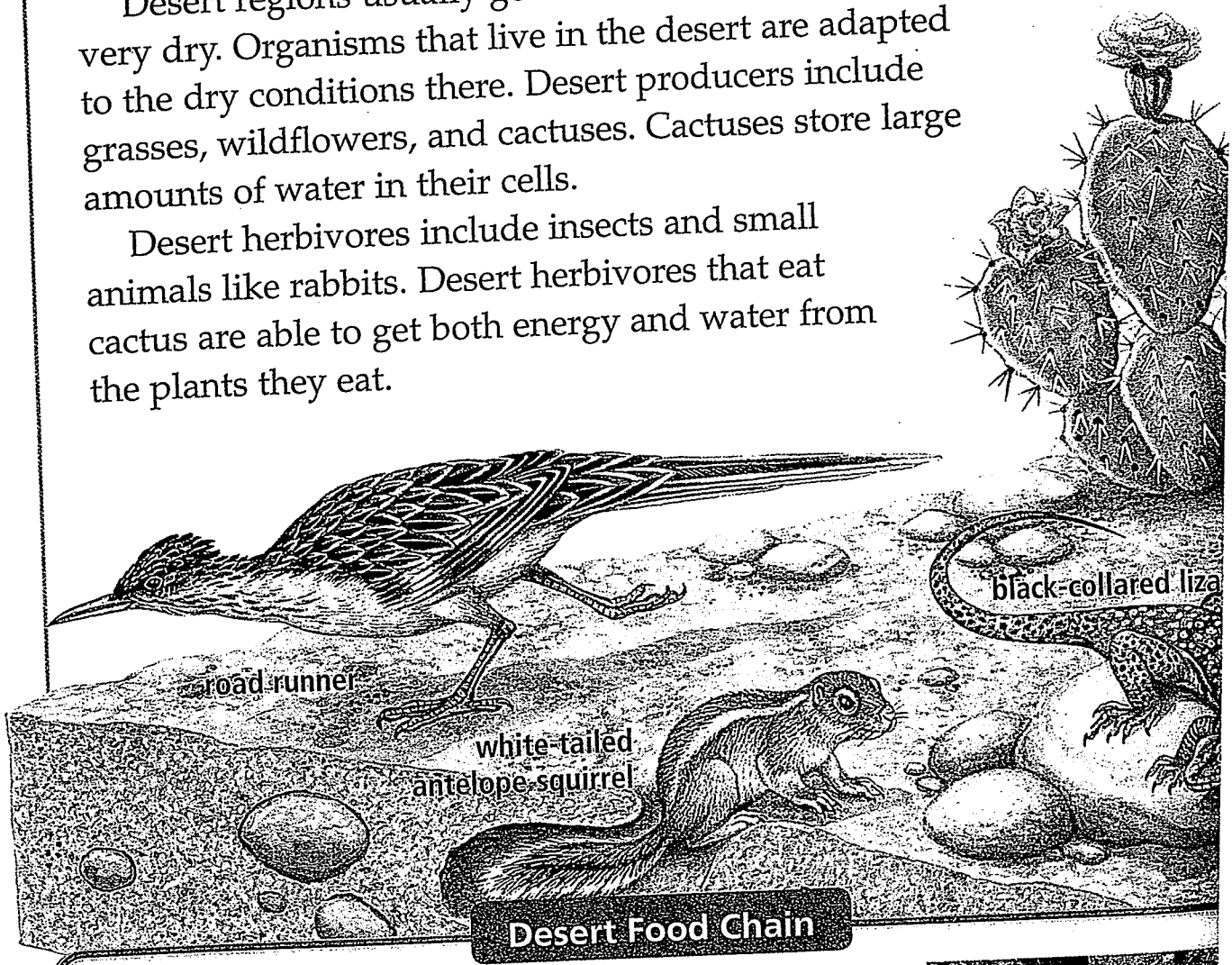
Blue crab
This crab uses its strong claws to capture and eat snails.

Food Chains on Land

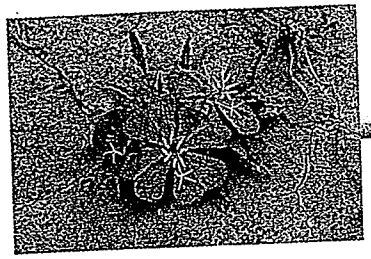
People live in terrestrial (tuh REHS tree uhl) habitats. A **terrestrial habitat** is a place where organisms live on land. A desert is one kind of terrestrial habitat.

Desert regions usually get little rainfall, so they are very dry. Organisms that live in the desert are adapted to the dry conditions there. Desert producers include grasses, wildflowers, and cactuses. Cactuses store large amounts of water in their cells.

Desert herbivores include insects and small animals like rabbits. Desert herbivores that eat cactus are able to get both energy and water from the plants they eat.

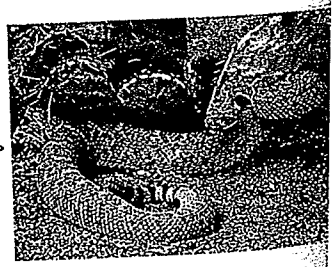


Desert Food Chain

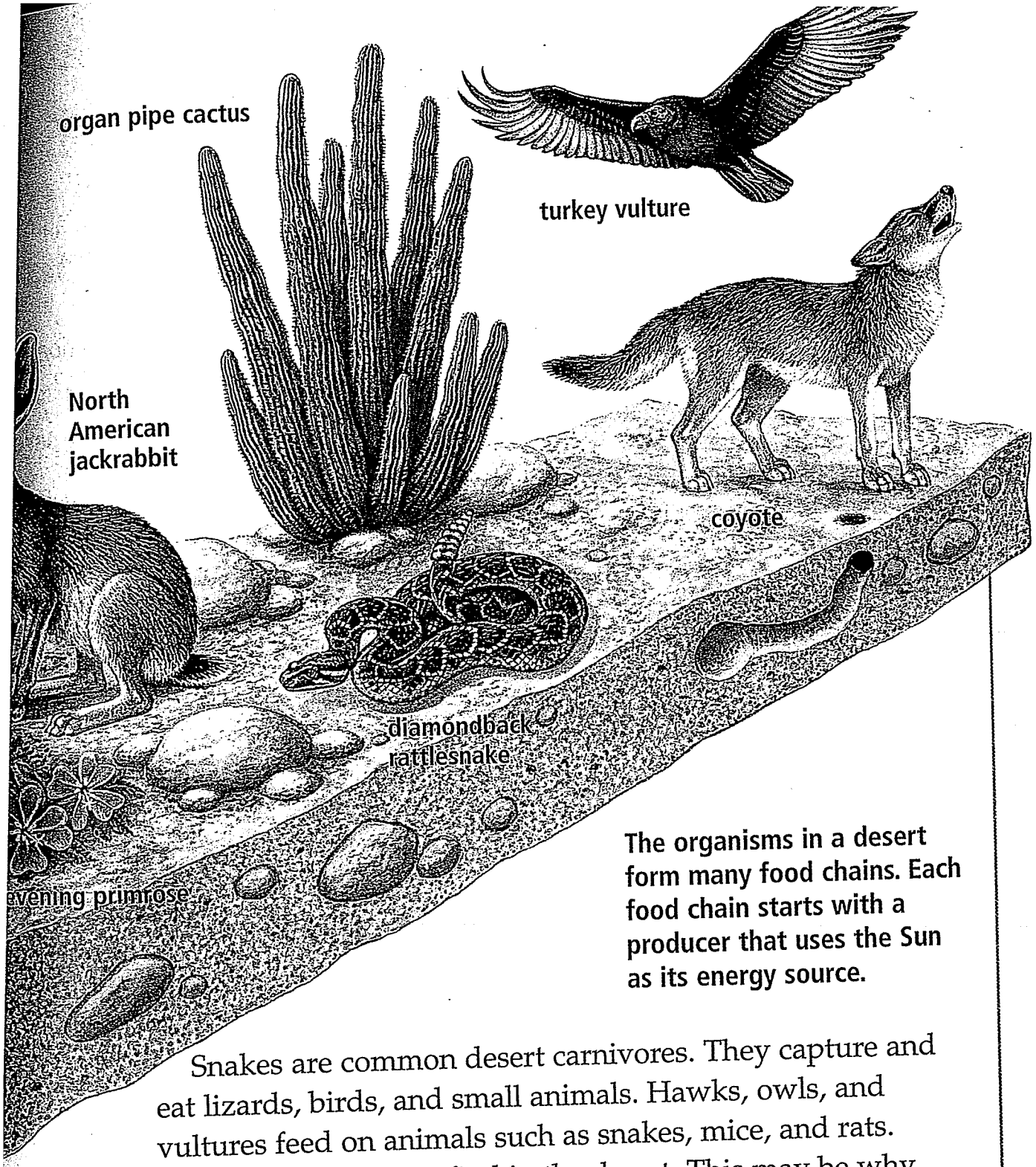


Evening primrose
This plant blooms at night, when desert temperatures are cool.

Antelope squirrel
This squirrel eats primrose, seeds, and small animals.



Rattlesnake
This snake eats rabbits, mice, squirrels, and birds.



The organisms in a desert form many food chains. Each food chain starts with a producer that uses the Sun as its energy source.

Snakes are common desert carnivores. They capture and eat lizards, birds, and small animals. Hawks, owls, and vultures feed on animals such as snakes, mice, and rats.

Food is difficult to find in the desert. This may be why many desert animals are omnivores. An animal is less likely to go hungry when its diet includes both plants and animals. But, in all terrestrial food chains, each animal depends on the plant that is at the start of the food chain.

COMPARE AND CONTRAST **How are snakes and hawks similar?**

Lesson Wrap-Up

Visual Summary

Food chains in aquatic habitats are made up of plants and animals that live in or on water.

Food chains in terrestrial habitats are made up of plants and animals that live on land.

LINKS for Home and School

MATH Draw Lines of Symmetry Suppose that an enormous sea star has been discovered in the Pacific Ocean. Draw the sea star with five arms. Draw a line of symmetry. Suppose the sea star loses one arm, and in its place two new arms grow back. Draw the sea star with its new arms. Does it have the same line of symmetry as the first sea star you drew?

SOCIAL STUDIES Write a Journal Entry The Inuit are a people who live near the ocean in the snowy Arctic. The Yanomano live in the hot rainforests of South America. Imagine you have traveled to visit both groups. Write a journal entry comparing the food sources of each group.

Review

1. **MAIN IDEA** What do food chains in aquatic and terrestrial habitats have in common?

2. **VOCABULARY** What does *terrestrial habitat* mean?

3. **READING SKILL: Compare and Contrast** How are food chains in aquatic and terrestrial habitats different?

4. **CRITICAL THINKING: Appl** What would happen to the number of herbivores in a food chain if most of the producers disappeared?

5. **INQUIRY SKILL: Researc** How could you find out wh food is best to feed a pet iguana?

TEST PREP

In an aquatic habitat, the producer in a food chain –

- **A.** gets its food from wat
- **B.** is likely to be an herbi
- **C.** uses solar energy to m food for other produce
- **D.** uses solar energy to m its own food.

Technology

Visit www.eduplace.com/scp/ to find out more about terrestrial habitats.

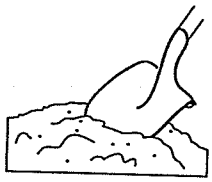
UNIT B Review and Test Prep

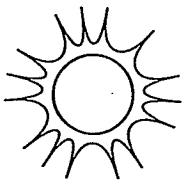
Write the letter of the best answer choice.

1. Which is NOT an example of a structure that is an adaptation?
   - **A.** needle shaped leaves
   - **B.** suction cups on the arm of a sea star
   - **C.** the long, thin beak of a hummingbird
   - **D.** a cat sneaking up on a mouse

2. Which is the source of energy for plants?

   A. 

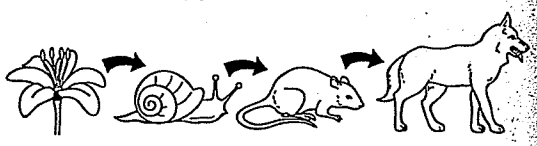
   B. 

   C. 

   D. 

3. For which resource do squirrels and birds drinking from a birdbath compete?
   - **A.** air
   - **B.** food
   - **C.** space
   - **D.** water

4. Which organism in this food chain is an herbivore?

   - **A.** coyote
   - **B.** day lily
   - **C.** rat
   - **D.** snail

5. BOTH plants and animals
   - **A.** reproduce.
   - **B.** give off oxygen.
   - **C.** look for a home.
   - **D.** use sunlight directly for energy.

6. Which is MOST likely to be an adaptation for self-defense?
   - **A.** the thick fur coat of a bear
   - **B.** a thick plant stem that stores water
   - **C.** the webbed feet of a bird that lives in water
   - **D.** a rabbit that has brown fur in summer and white fur in winter

Chapter 5 Review and Test Prep

Vocabulary

Complete each sentence with a term from the list.

1. The path that energy takes through a community as one living thing eats another is a/an _____.
2. An animal that eats only plants is a/an _____.
3. Lions, zebras, and grass are all found in a/an _____.
4. An organism that makes its own food is a/an _____.
5. An animal that only eats animals is a/an _____.
6. Plants are able to make food by capturing ____ from the Sun.
7. An organism that eats other living things in order to get energy is a/an _____.
8. Fish and other water organisms live in a/an _____.
9. The basic unit that makes up all living things is a/an _____.
10. An animal that eats both plants and animals is a/an _____.

aquatic habitat B60
carnivore B51
cell B45
consumer B51
food chain B50
herbivore B51
omnivore B51
producer B51
solar energy B44
terrestrial habitat B62

Test Prep

Write the letter of the best answer choice.

11. Which is a terrestrial habitat?

A. desert.
B. river.
C. ocean.
D. lake.

12. In the following food chain, the producer is the _____.

plant caterpillar bird cat

A. bird.
B. caterpillar.
C. plant.
D. cat.

13. In a food chain, consumers _____.

A are usually the first link in the chain.
B. eat other living things.
C. use solar energy to make food.
D. get energy from air.

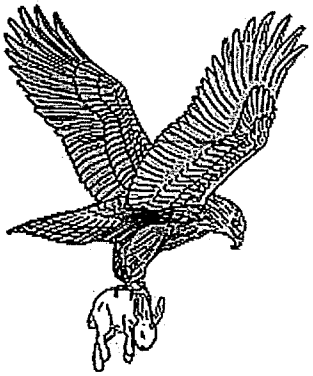
14. The organism that would most likely be last in a food chain is a _____.

A. seaweed.
B. human.
C. maple tree.
D. caterpillar.

EXIT TICKET

Name:_____ **Date:**_____
BCCSG **Howard / Spelman**

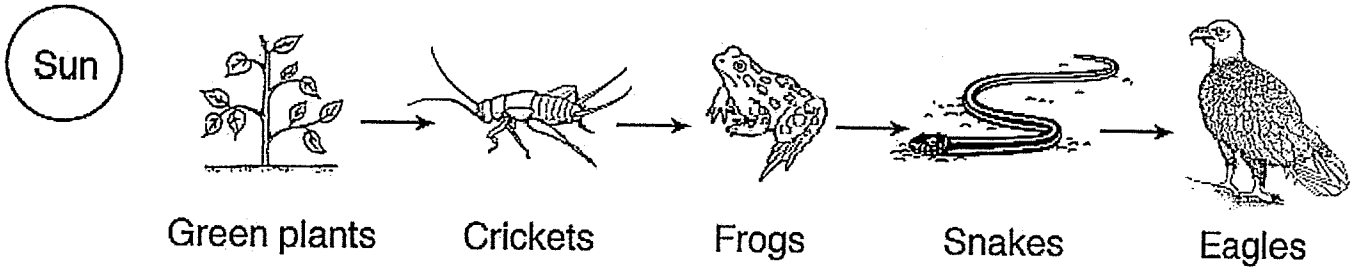
1. The diagram below shows an eagle that has captured a rabbit for food This rabbit is an example of a



A decomposer
B predator
C prey
D producer

2. Animals that eat other animals for food are classified as
A decomposers
B predators
C producers
D prey

3. In which order is energy transferred through a food chain?



A Sun → plants → animals
B Sun → animals → plants
C plants → Sun → animals
D plants → animals → Sun

Grade: