Unit 1 Plants and Animals

What do living organisms need to survive?

Lesson Plan

Unit Opener & Lesson 1 What plant and animal characteristics are inherited?			
	Activity	**Pages**	**Time**
Engage	• Unit Opener: Think! *What helps a coconut travel across the water?* • Unit Opener: Discuss how plants and animals protect themselves. • Unit Opener: Discuss why dogs usually bark. • Think! *How is a zebra's pattern like a fingerprint?* • Think! *What kinds of plants does the giraffe's neck allow it to eat...?*	SB p. 4 SB p. 4 SB p. 4 SB p. 6 SB p. 8	5 min 10 min 10 min 5 min 5 min
Explore	• Digital Lab: *How can some characteristics be affected by the environment?* (ActiveTeach)	TB p. 5	15 min
Explain	• Characteristics of plants and animals • Inherited characteristics of plants and animals • Inherited characteristics of peacock flounder and human beings • Competition and advantage • How peppered moths evolved to survive • *Got it? 60-Second Video* (ActiveTeach)	SB p. 5 SB p. 6 SB p. 7 SB p. 8 SB p. 9 TB p. 9	15 min 15 min 15 min 15 min 15 min 5 min
Elaborate	• Science Notebook: Describing Animals • More about the Peacock Flounder • Science Notebook: Longer Necks • Flash Lab: Dimpled Cheeks	TB p. 6 TB p. 7 TB p. 8 SB p. 9	15 min 20 min 10 min 20 min
Evaluate	• *Lesson 1 Check* (ActiveTeach) • Assessment for Learning • Review (Lesson 1) • *Got it? Self Assessment* (ActiveTeach) • *Got it? Quiz* (ActiveTeach)	TB p. 15a TB p. 9 SB p. 15 TB p. 15b TB p. 15b	10 min 10 min 10 min 10 min 10 min

Lesson 2 How do animals respond to the environment?			
	Activity	**Pages**	**Time**
Engage	• Think! *What advantages do insects that look like plants have?* • Think! *How does hibernation help some animals survive?*	SB p. 11 TB p. 12	5 min 5 min
Explore	• Digital Activity: *Misconception: Echolocation* (ActiveTeach)	TB p. 10	15 min
Explain	• Animal behaviors caused by stimuli • Animal instincts • Migration, protection, and hibernation • Behaviors that develop as a result of training • *Got it? 60-Second Video* (ActiveTeach)	SB p. 10 SB p. 11 SB p. 12 SB p. 13 TB p. 13	15 min 15 min 15 min 15 min 5 min
Elaborate	• Science Notebook: Animal Behaviors • Instinctive Animal Behavior Posters • At-Home Lab: Migrating Animals • Science Notebook: Hibernation • Science Notebook: My Learned Behavior	TB p. 10 TB p. 11 SB p. 12 TB p. 12 TB p. 13	15 min 20 min 15 min 15 min 15 min
Evaluate	• *Lesson 2 Check* (ActiveTeach) • Assessment for Learning • Review (Lesson 2) • *Got it? Self Assessment* (ActiveTeach) • *Got it? Quiz* (ActiveTeach)	TB p. 15a TB p. 13 SB p. 15 TB p. 15b TB p. 15b	10 min 10 min 10 min 10 min 10 min
Lab	• *Let's Investigate! How can some fish float?* (ActiveTeach)	SB p. 14	30 min

Flash Cards

characteristic

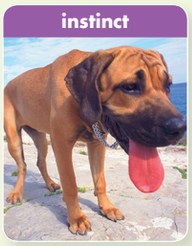
offspring

inherit

camouflage

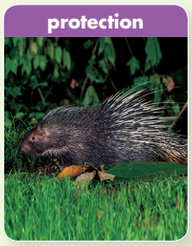
stimulus

instinct



migration

protection



hibernation

Lesson 1

Key Words	ELL Support
characteristics, offspring, heredity, inherit, competition, camouflage, advantage	**Vocabulary:** *peacock, showy, tail, pea plant, pods, peas, smooth, wrinkled, prickly pear cactus, traits, sharp spines, paddle-shaped pads, flattened stems, waxy coating, moisture, peacock flounder, kittens, cubs, peppered moth, lichens, coal, bee orchid, leaf insect, wings, fur, sea star, low tide, shallow* **Word Forms:** *heredity, inherit*

Lesson 2

Key Words	ELL Support
behavior, stimulus, instinct, migration, protection, hibernation	**Vocabulary:** *shell, snow monkeys, response, geese, flocks, porcupine, quills, threatened* **Animal Vocabulary:** *sea star, goose, porcupine, marmot, monarch butterfly, geese, lion cub, white-crowned sparrow*

Unit 1 Plants and Animals

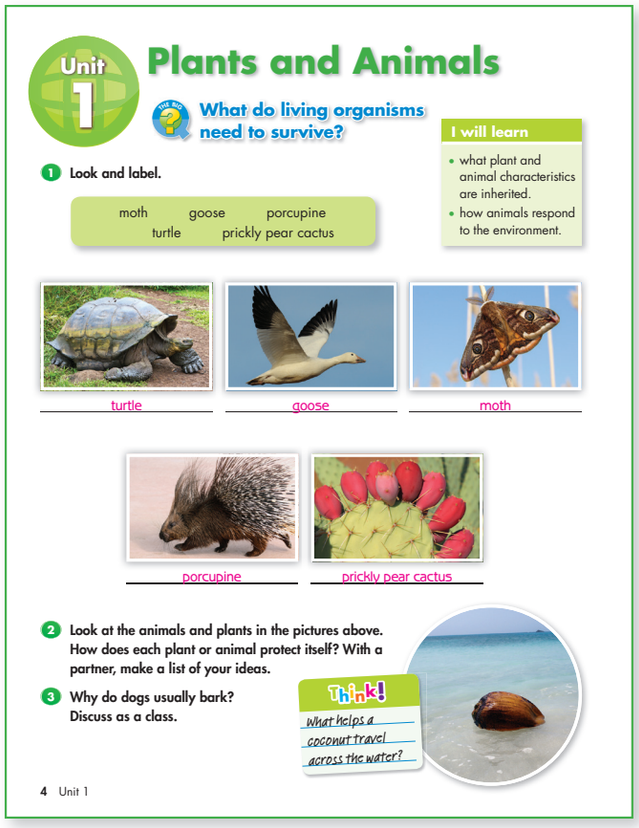
Unit Objectives

Lesson 1: Students will explain that plants and animals inherit characteristics that may help them survive and reproduce.

Lesson 2: Students will demonstrate an understanding of how animals respond to their environments and get what they need.

Vocabulary: *seed, turtle, goose, moth, porcupine, prickly pear cactus, water dispersal*

Materials: pictures of different types of seeds (pumpkin, sunflower, beans, peas, pine cones, sesame, etc.), picture of a dog


Unit 1 Plants and Animals

What do living organisms need to survive?

I will learn
- what plant and animal characteristics are inherited.
- how animals respond to the environment.

1 Look and label.

moth goose porcupine turtle prickly pear cactus

turtle goose moth

porcupine prickly pear cactus

2 Look at the animals and plants in the pictures above. How does each plant or animal protect itself? With a partner, make a list of your ideas.

3 Why do dogs usually bark? Discuss as a class.

Think! What helps a coconut travel across the water?

4 Unit 1

Introduce the Big Question

What do living organisms need to survive?

Build Background Display pictures of different types of seeds. *What is a seed? What are seeds for?* Have students brainstorm. Guide them to conclude that seeds are necessary for flowering plants to reproduce. On the board, draw a fern to remind students that not all plants produce seeds.

Engage

Think!

What helps a coconut travel across the water?

Point to the photo on the bottom right and have students identify what it is. *Did you know that coconuts are seeds? How do you think this coconut got into the water?* Ask volunteers to share their ideas.

1 Look and label.

Point to the pictures and allow students to say any words they already know. Ask students to work in pairs and write the words. Review the answers by pointing to the pictures for students to say the words.

2 Look at the animals and plants in the pictures above. How does each plant or animal protect itself? With a partner, make a list of your ideas.

In pairs, students discuss how each plant or animal protects itself. Review the answers with the whole class. (Possible answers: *Turtles hide in their shells; Geese can fly away; Moths can camouflage themselves against dark backgrounds; Porcupines have sharp quills; Cactuses have sharp spines.*)

3 Why do dogs usually bark? Discuss as a class.

Display the picture of a dog. *Who has a pet dog? What do most dogs do?* Divide the class into small groups and have them list what most dogs do. Write students' ideas on the board. Then have the class brainstorm why dogs bark. (Possible answers: *Dogs may bark to say hello to their owners, to request attention, to show they are excited, hungry, thirsty, anxious,* etc.)

Think! Again!

Revisit the question *What helps a coconut travel across the water?* Divide the class into small groups and have them discuss. Ask volunteers to share their answers. Use board drawings to explain that coconuts are hollow in the center and have thick shells, called husks. *How do you think a coconut's hollow center and thick husk help it travel?* (Possible answer: *The hollow center helps it float, and the husk provides protection.*) *Where do you think this coconut is going?* Guide students to conclude that coconuts can float across the water until they wash up on a shore, where they can grow into new coconut trees.

Lesson 1

What plant and animal characteristics are inherited?

Objective: Learn what plant and animal characteristics are inherited.

Vocabulary: *peacock, showy, tail, pea plant, stems, leaves, flowers, pods, peas, characteristics, qualities, organism, wrinkled, smooth, parents, pass on to, offspring, heredity*

Digital Resources: Flash Cards (*characteristics, offspring*), *Let's Explore!* Digital Lab

Materials: selected Animal Cards, pictures of different animals with their babies, four bags per pair of students, 4 sets of cards per pair of students: stems (*tall, short*), flowers (*red, white*), pods (*green, yellow*), peas (*smooth, wrinkled*)

Unlock the Big Question

Write the following text on the board: *I will learn that plants and animals inherit characteristics that may help them survive and reproduce.*

Build Background On the board, draw a healthy plant in a pot close to a window and another plant with drooping leaves close to a wall. In small groups, have students discuss the differences between both plants and how the environment affects them. Discuss answers as a class.

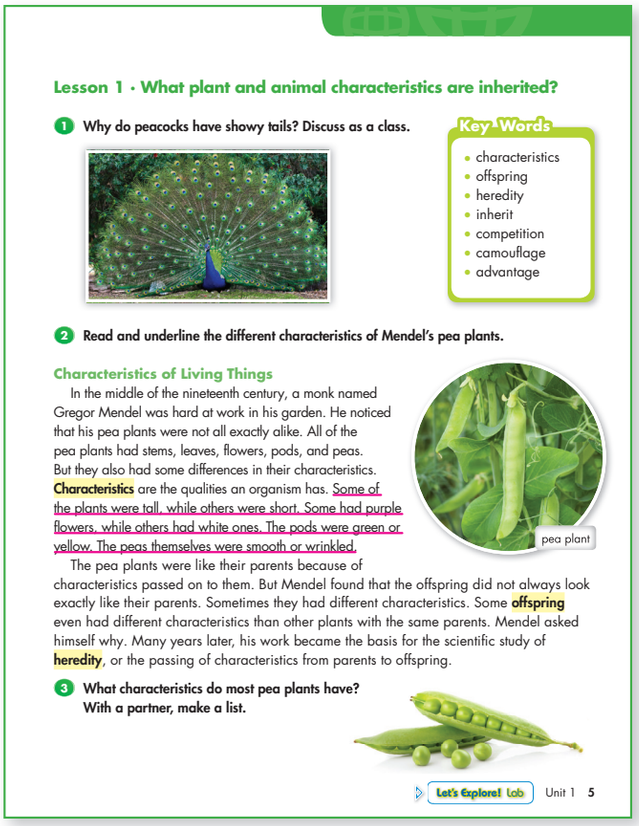
Explore

Let's Explore! Lab **How can some characteristics be affected by the environment?**

Objective: Understand how the environment can affect plant and animal characteristics.

Digital Resources: *Let's Explore!* Digital Lab, *Let's Explore! Activity Card* (1 per student), Environmental Effect Cards Part 1 and Part 2 (1 set per group)

- Use the Flash Card to pre-teach *characteristics*.
- Show the Digital Lab.
- Demonstrate the activity, with students' help, by picking one A Card and matching it with a B Card first and then with a C Card.
- Have groups match the cards and display them together on their tables.
- Have students complete the *Activity Card* and check their answers in small groups or pairs. Provide support as needed.



Lesson 1 · What plant and animal characteristics are inherited?

1 Why do peacocks have showy tails? Discuss as a class.

Key Words
- characteristics
- offspring
- heredity
- inherit
- competition
- camouflage
- advantage

2 Read and underline the different characteristics of Mendel's pea plants.

Characteristics of Living Things

In the middle of the nineteenth century, a monk named Gregor Mendel was hard at work in his garden. He noticed that his pea plants were not all exactly alike. All of the pea plants had stems, leaves, flowers, pods, and peas. But they also had some differences in their characteristics. **Characteristics** are the qualities an organism has. Some of the plants were tall, while others were short. Some had purple flowers, while others had white ones. The pods were green or yellow. The peas themselves were smooth or wrinkled.

pea plant

The pea plants were like their parents because of characteristics passed on to them. But Mendel found that the offspring did not always look exactly like their parents. Sometimes they had different characteristics. Some **offspring** even had different characteristics than other plants with the same parents. Mendel asked himself why. Many years later, his work became the basis for the scientific study of **heredity**, or the passing of characteristics from parents to offspring.

3 What characteristics do most pea plants have? With a partner, make a list.

Let's Explore! Lab Unit 1 5

Explain

1 Why do peacocks have showy tails? Discuss as a class.

Allow volunteers to describe the peacock in the picture. *Only male peacocks have showy tails. Their tails are brightly colored and attractive. Why do you think that is?* Read the question aloud. Pair students to discuss the answer. Invite pairs to share their ideas with the class. (Possible answer: *Showy tails help peacocks attract mates.*)

2 Read and underline the different characteristics of Mendel's pea plants.

Elicit the names of the parts of a pea plant and write them on the board: *stems, leaves, pods, peas.* Write the following questions on the board: *What did Gregor Mendel grow in his garden? What did he find out?* Ask students to read the first paragraph to find the answers. Write the word *characteristics* on the board and elicit its definition. Use the *offspring* Flash Card to explain that all living things receive characteristics or qualities from their parents. Have students read and underline the different characteristics Mendel's pea plants showed. Finally, elicit from students the importance of Mendel's work.

3 What characteristics do most pea plants have? With a partner, make a list.

Remind students that, although pea plants have different characteristics, most pea plants share some characteristics. Have pairs list these characteristics.

Lesson 1

What plant and animal characteristics are inherited?

Objective: Learn how plants and animals can inherit some characteristics.

Vocabulary: *inherited, prickly pear cactus, survive, environment, inherit, traits, parents, offspring, sharp spines, paddle-shaped pads, flattened stems, waxy coating, hold in, moisture*

Digital Resources: Flash Card (*offspring*), *I Will Know…* Digital Activity

Materials: picture of a fingertip, pictures of a horse, zebra, and a peacock and a peahen

Build Background Display the *offspring* Flash Card and have students discuss the similarities between the lion and the cub. As a class, discuss what characteristics make them look alike.

Explain

4 Read and write the characteristic that helps the prickly pear cactus survive in a dry environment.

Use the picture of the prickly pear cactus to pre-teach *sharp spines, paddle-shaped pads, flattened stems, waxy coating,* and *moisture*. Have students describe the environment where a prickly pear cactus lives. Students read and write a characteristic that helps this plant survive in a dry environment.

5 Read and compare zebras and horses. Write two ways they are the same and two ways they are different.

Display the pictures of a horse and a zebra. Have students read and write two ways they are the same and two ways they are different.

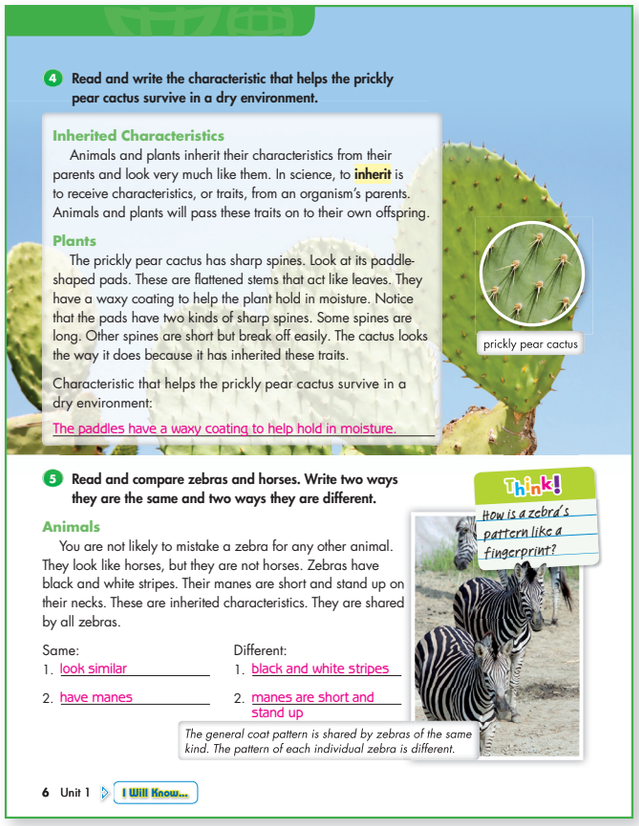
Elaborate

Science Notebook: Describing Animals

Have students write a description of an animal in their Science Notebooks. Provide language support as needed. Divide the class into pairs. Have students take turns reading their descriptions for their partners to guess what animal they described.

Males and Females

Display the pictures of a peacock and a peahen. Have students describe the differences between them. *Peacocks and peahens look quite different because males and females inherit different characteristics from their parents.* Ask students to research on the Internet another animal species whose males and females look different. Have students make a poster explaining the main differences.



4 Read and write the characteristic that helps the prickly pear cactus survive in a dry environment.

Inherited Characteristics

Animals and plants inherit their characteristics from their parents and look very much like them. In science, to **inherit** is to receive characteristics, or traits, from an organism's parents. Animals and plants will pass these traits on to their own offspring.

Plants

The prickly pear cactus has sharp spines. Look at its paddle-shaped pads. These are flattened stems that act like leaves. They have a waxy coating to help the plant hold in moisture. Notice that the pads have two kinds of sharp spines. Some spines are long. Other spines are short but break off easily. The cactus looks the way it does because it has inherited these traits.

Characteristic that helps the prickly pear cactus survive in a dry environment:

The paddles have a waxy coating to help hold in moisture.

prickly pear cactus

5 Read and compare zebras and horses. Write two ways they are the same and two ways they are different.

Animals

You are not likely to mistake a zebra for any other animal. They look like horses, but they are not horses. Zebras have black and white stripes. Their manes are short and stand up on their necks. These are inherited characteristics. They are shared by all zebras.

Same:
1. look similar
2. have manes

Different:
1. black and white stripes
2. manes are short and stand up

Think! How is a zebra's pattern like a fingerprint?

The general coat pattern is shared by zebras of the same kind. The pattern of each individual zebra is different.

6 Unit 1 I Will Know...

ELL Vocabulary Support

Write the words *heredity* and *inherit* on the board. Write the following sentence frames on the board and have students complete them.
In science, to _____ is to receive characteristics from an organism's parents. Mendel's work became the basis for the scientific study of _____.

Think!

How is a zebra's pattern like a fingerprint?

Display the picture of a fingertip and have students discuss what they know about fingerprints. Read the question aloud and discuss the answers with the students. (Answer: *Each zebra's pattern is unique.*)

I Will Know...

Have students do the *I Will Know…* Digital Activity.

Lesson 1

What plant and animal characteristics are inherited?

Objective: Learn how the peacock flounder and human beings inherit some characteristics.

Vocabulary: *peacock flounder, flat, pattern, match, background, traits, human beings, height*

Digital Resources: Flash Card (*inherit*)

Materials: students' family photos

Build Background On the board, draw a fish, part by part, and have students guess what it is. Write the word *fish* on the board. Pair students and have them brainstorm, for two minutes, the characteristics that most fish have. Elicit fish characteristics and write them on the board. (Possible answers: *They can swim; They have scales; They have fins;* etc.)

Explain

6 Read and underline three inherited characteristics of the peacock flounder.

Point to the picture for students to describe. Have students read and underline three inherited characteristics of the peacock flounder. Check answers as a class. Ask *How does changing color help the peacock flounder survive? It can blend into its surroundings so that it is less visible to predators.*

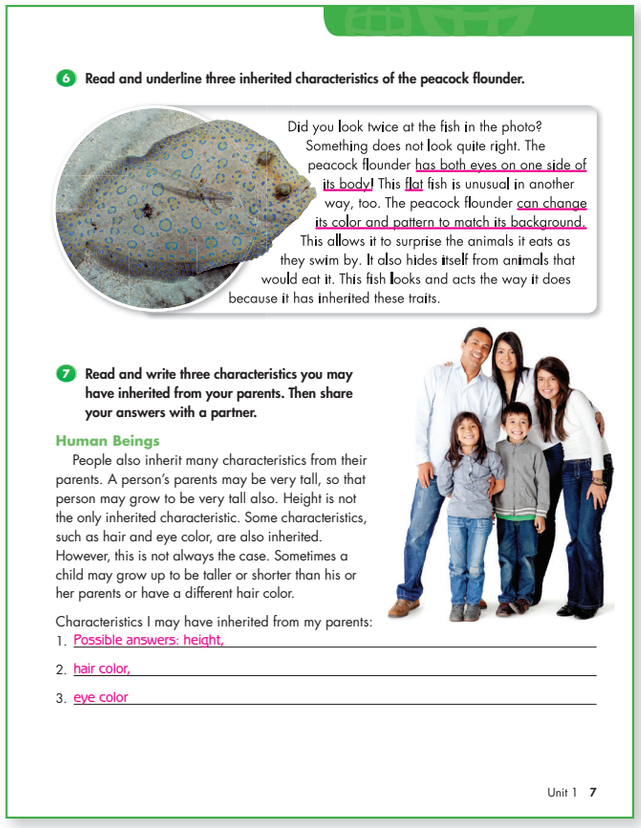
7 Read and write three characteristics you may have inherited from your parents. Then share your answers with a partner.

Ask students to read the text on their own and to write three characteristics they may have inherited from their parents. Have students share their answers with a partner. Display the *inherit* Flash Card and have students list the characteristics the children in the picture inherited from their parents.

Think!

Do humans inherit all their characteristics from their parents? Why or why not?

Have small groups brainstorm. Then discuss as a class. (Possible answer: *No. Some characteristics are unique to each individual.*) *Sometimes people with tall parents do not grow to be as tall as their parents. Why might this happen?* (Possible answer: *They might not inherit that characteristic.*)



6 Read and underline three inherited characteristics of the peacock flounder.

Did you look twice at the fish in the photo? Something does not look quite right. The peacock flounder has both eyes on one side of its body! This flat fish is unusual in another way, too. The peacock flounder can change its color and pattern to match its background. This allows it to surprise the animals it eats as they swim by. It also hides itself from animals that would eat it. This fish looks and acts the way it does because it has inherited these traits.

7 Read and write three characteristics you may have inherited from your parents. Then share your answers with a partner.

Human Beings

People also inherit many characteristics from their parents. A person's parents may be very tall, so that person may grow to be very tall also. Height is not the only inherited characteristic. Some characteristics, such as hair and eye color, are also inherited. However, this is not always the case. Sometimes a child may grow up to be taller or shorter than his or her parents or have a different hair color.

Characteristics I may have inherited from my parents:

1. Possible answers: height,
2. hair color,
3. eye color

Unit 1 7

Elaborate

More about the Peacock Flounder

What makes the peacock flounder different from other fish? Elicit the fish's characteristics and write them on the board. *Why does the peacock flounder look and act the way it does? Because it has inherited these traits.* Tell students that these fish have other characteristics that also make them different. Write the following questions on the board for students to research: *Where do peacock flounder live? What do they eat? Why are they called that? What makes baby flounder different from their parents? How do adult flounder swim?* Once students have researched, divide the class into trios and have them share their information. Then ask each group to illustrate the information and label a poster that shows the peacock flounder's characteristics. Have each group present its poster to the class.

Science Notebook: Characteristics I Inherited from My Parents

Have each student bring a photograph of their family and write in their Science Notebooks the characteristics they inherited from each of their parents. Pair students and have them share their photos and discuss their characteristics.

Lesson 1

What plant and animal characteristics are inherited?

Objective: Learn how animals with different characteristics compete.

Vocabulary: *parents, offspring, advantages, give birth, kittens, cubs, competition, resources, eyesight, sense of smell, male, pass characteristics on to offspring*

Materials: pictures of puppies from the same litter, pictures of a lion and a giraffe, selected Animal Cards

Build Background Display the pictures of a lion and a giraffe. Divide the class into two groups, A and B. In three minutes, group A will write as many lion characteristics as they can and group B as many giraffe characteristics as they can. Check answers as a class. The winning team will be the one that listed more characteristics.

Think!

What kinds of plants does the giraffe's neck allow it to eat more easily than other animals?

Point to the picture of the two giraffes. Encourage students to say where giraffes live and what they eat.

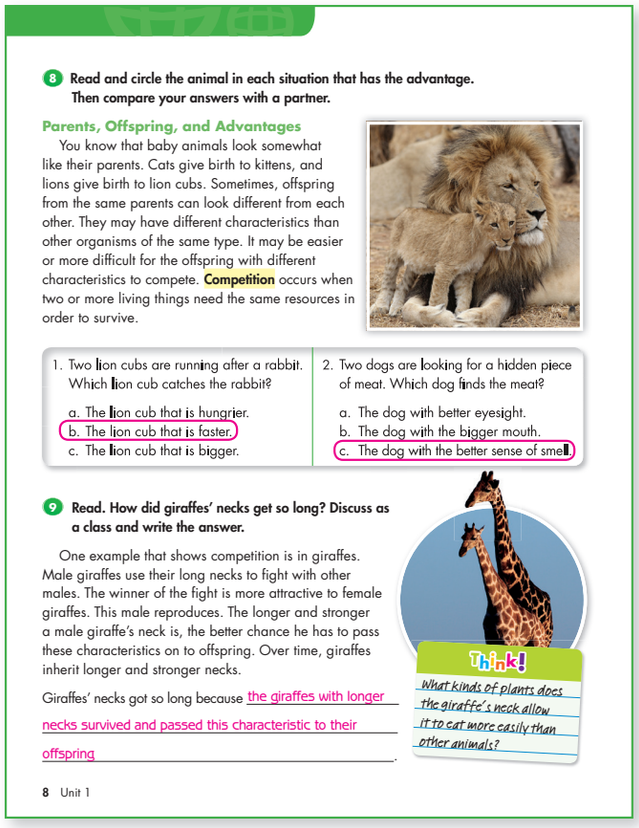
Explain

8 Read and circle the animal in each situation that has the advantage. Then compare your answers with a partner.

Read the text out loud. Say the word *competition*. Have a volunteer read the sentence that defines the word. Display a picture of puppies from the same litter. *What might these puppies compete for? Food!* Have students discuss which puppies have better chances of survival and why. (Possible answer: *The ones that are bigger or stronger because they can get more food.*) Ask students to read each situation and circle the animal that has the advantage. Have pairs compare their answers. Encourage volunteers to explain the reasons for their choices.

9 Read. How did giraffes' necks get so long? Discuss as a class and write the answer.

Look at the giraffes in the picture. How do you think giraffes' necks got so long? Write students' predictions on the board. Once students read the text, have them share their ideas with the class.



8 Read and circle the animal in each situation that has the advantage. Then compare your answers with a partner.

Parents, Offspring, and Advantages

You know that baby animals look somewhat like their parents. Cats give birth to kittens, and lions give birth to lion cubs. Sometimes, offspring from the same parents can look different from each other. They may have different characteristics than other organisms of the same type. It may be easier or more difficult for the offspring with different characteristics to compete. **Competition** occurs when two or more living things need the same resources in order to survive.

1. Two lion cubs are running after a rabbit. Which lion cub catches the rabbit?
   a. The lion cub that is hungrier.
   b. The lion cub that is faster.
   c. The lion cub that is bigger.

2. Two dogs are looking for a hidden piece of meat. Which dog finds the meat?
   a. The dog with better eyesight.
   b. The dog with the bigger mouth.
   c. The dog with the better sense of smell.

9 Read. How did giraffes' necks get so long? Discuss as a class and write the answer.

One example that shows competition is in giraffes. Male giraffes use their long necks to fight with other males. The winner of the fight is more attractive to female giraffes. This male reproduces. The longer and stronger a male giraffe's neck is, the better chance he has to pass these characteristics on to offspring. Over time, giraffes inherit longer and stronger necks.

Giraffes' necks got so long because the giraffes with longer necks survived and passed this characteristic to their offspring.

Think!
What kinds of plants does the giraffe's neck allow it to eat more easily than other animals?

8 Unit 1

Think! Again!

Revisit the question from the beginning of the class: *What kinds of plants does the giraffe's neck allow it to eat more easily than other animals?* (Possible answer: *The leaves of tall trees.*)

Elaborate

Science Notebook: Longer Necks

Have students consider why a female giraffe would prefer male giraffes with longer necks rather than those with shorter necks. Have students write their ideas in their Science Notebooks. Discuss students' responses as a class.

Giraffe Facts Competition

Have students research on the Internet three interesting facts about giraffes. Then divide the class into small groups and have them share their information. The winning team will be the one that collects more facts. (Possible answers: *They are the tallest mammals in the world. They only sleep between ten minutes and two hours a day. They sleep standing up. Their tongues can be up to 45 cm long. They have four stomachs. A giraffe's heart can be 60 cm long and weigh more than ten kg. The spot pattern of each individual giraffe is different. A male giraffe can weigh about 1,400 kilograms. They are not aggressive animals. Fights between males last only a few minutes, and they hardly ever hurt each other.*)

Lesson 1

What plant and animal characteristics are inherited?

Objective: Learn how peppered moths evolved to have a dark color.

Vocabulary: *peppered moth, camouflage* (n), *background lichens, coal, die off, survive, advantage, compete*

Digital Resources: Flash Card (*camouflage*), *Lesson 1 Check* (print out 1 per student), *Got it? 60-Second Video*

Build Background Use board drawings to pre-teach *peppered moth, camouflage,* and *lichen.*

Explain

10 Read and circle *T* (true) or *F* (false). With a partner, correct the false statements.

Invite students to read the paragraph and circle the answers. Then pair students to correct the false statements. Check answers as a class.

ELL Content Support

The peppered moth is one of the best-known examples of evolution by natural selection and is often referred to as Darwin's moth. During the Industrial Revolution, the coal that was burned produced soot that darkened the trees in the industrial areas of England. Naturalists noted that the light form of the moth was more common in the countryside, while the dark moth prevailed in the sooty regions. The conclusion was that the darker moths had some sort of survival advantage in the newly darkened landscape.

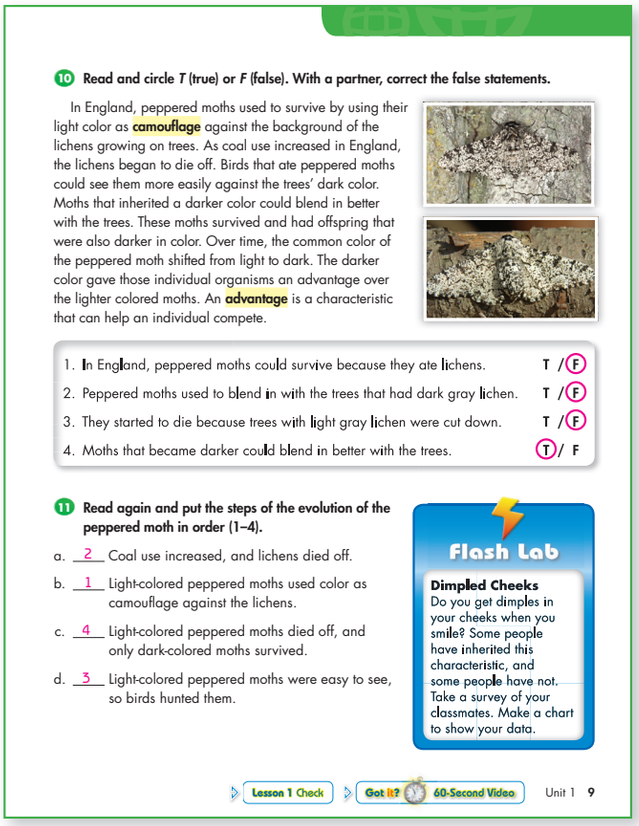
11 Read again and put the steps of the evolution of the peppered moth in order (1–4).

Elicit from students how peppered moths survived before coal use increased in England. *What color did peppered moths use to be before coal use increased in England? Light gray!* Have students put the steps of the evolution of the peppered moth in order.

Elaborate

Animals That Use Camouflage

Divide the class into small groups. Have them research on the Internet animals that use camouflage. Ask students to choose one animal and make posters that illustrate how the animal uses camouflage to survive.



10 Read and circle *T* (true) or *F* (false). With a partner, correct the false statements.

In England, peppered moths used to survive by using their light color as **camouflage** against the background of the lichens growing on trees. As coal use increased in England, the lichens began to die off. Birds that ate peppered moths could see them more easily against the trees' dark color. Moths that inherited a darker color could blend in better with the trees. These moths survived and had offspring that were also darker in color. Over time, the common color of the peppered moth shifted from light to dark. The darker color gave those individual organisms an advantage over the lighter colored moths. An **advantage** is a characteristic that can help an individual compete.

1. In England, peppered moths could survive because they ate lichens. T / F
2. Peppered moths used to blend in with the trees that had dark gray lichen. T / F
3. They started to die because trees with light gray lichen were cut down. T / F
4. Moths that became darker could blend in better with the trees. T / F

11 Read again and put the steps of the evolution of the peppered moth in order (1–4).

a. 2 Coal use increased, and lichens died off.
b. 1 Light-colored peppered moths used color as camouflage against the lichens.
c. 4 Light-colored peppered moths died off, and only dark-colored moths survived.
d. 3 Light-colored peppered moths were easy to see, so birds hunted them.

Flash Lab

Dimpled Cheeks
Do you get dimples in your cheeks when you smile? Some people have inherited this characteristic, and some people have not. Take a survey of your classmates. Make a chart to show your data.

Lesson 1 Check | Got it? 60-Second Video | Unit 1 9

Flash Lab

Dimpled Cheeks

Explain to students what a dimple is. *Do you get dimples in your cheeks when you smile? Some people have inherited this characteristic, and some people have not.* Have students take a survey of their classmates and make a pie chart that shows the number of students with and without dimples.

Evaluate

Lesson 1 Check Assessment for Learning

Distribute the *Lesson 1 Check* and guide students as they complete it. Check answers as a class. Then ask students to grade their progress on the topic of inherited characteristics from 1 to 3: 3 = *I understand inherited characteristics in plants and animals;* 2 = *I need to study more;* 1 = *I need help!* Encourage students giving themselves a 1 or 2 to describe what they found difficult and what they need to study more.

Got it? 60-Second Video

Review the Key Words for Lesson 1 (see Student's Book page 5). Play the *Got it? 60-Second Video* to review the lesson material.

Lesson 2

How do animals respond to the environment?

Objective: Learn about animal behavior and how behaviors are caused by stimuli.

Vocabulary: *snow monkeys, turtle, behavior, stimulus, responses, stimuli, environment*

Digital Resources: Flash Card (*stimulus*), *Explore My Planet!* Digital Activity

Materials: pictures of pet animals

Unlock the Big Question

Write the following text on the board: *I will know how animals respond to their environments and get what they need.*

Build Background Display pictures of pet animals. Ask volunteers who have pets to describe how their pets behave when they are hungry. Write students' ideas on the board.

Explore

Explore My Planet! Misconception: Echolocation

Objective: Students will learn how bats use echolocation to locate prey.

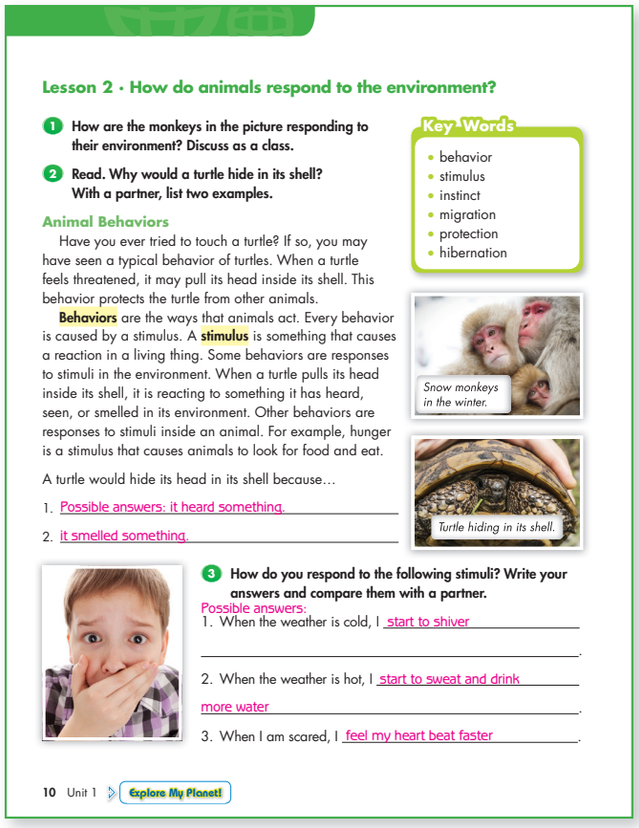
Digital Resources: *Explore My Planet!* Digital Activity, *Explore My Planet! Activity Card* (1 per student)

- Show the *Explore My Planet!* Ask students to look at the picture and describe it.
- Read the *Explore My Planet!* with students. Remind students that animals use their senses to gather information about their environment. Have students list the five senses. Then ask them to name two senses bats use to get information about their surroundings. (Possible answers: *sight* and *hearing*)
- Ask students to work independently or in pairs to complete the *Activity Card*.
- Provide support as needed. Check answers as a class.

Explain

1 How are the monkeys in the picture responding to their environment? Discuss as a class.

Call students' attention to the picture of the monkeys. Have students describe the monkeys' surroundings.



Lesson 2 · How do animals respond to the environment?

1 How are the monkeys in the picture responding to their environment? Discuss as a class.

2 Read. Why would a turtle hide in its shell? With a partner, list two examples.

Key Words
- behavior
- stimulus
- instinct
- migration
- protection
- hibernation

Animal Behaviors

Have you ever tried to touch a turtle? If so, you may have seen a typical behavior of turtles. When a turtle feels threatened, it may pull its head inside its shell. This behavior protects the turtle from other animals.

Behaviors are the ways that animals act. Every behavior is caused by a stimulus. A stimulus is something that causes a reaction in a living thing. Some behaviors are responses to stimuli in the environment. When a turtle pulls its head inside its shell, it is reacting to something it has heard, seen, or smelled in its environment. Other behaviors are responses to stimuli inside an animal. For example, hunger is a stimulus that causes animals to look for food and eat.

Snow monkeys in the winter.

Turtle hiding in its shell.

A turtle would hide its head in its shell because…

1. Possible answers: it heard something.
2. it smelled something.

3 How do you respond to the following stimuli? Write your answers and compare them with a partner.

Possible answers:
1. When the weather is cold, I start to shiver.
2. When the weather is hot, I start to sweat and drink more water.
3. When I am scared, I feel my heart beat faster.

10 Unit 1 Explore My Planet!

Then ask students to explain what the surroundings suggest about the climate in which these monkeys live. Students may say that the monkeys are huddling for body warmth in the cold temperatures.

2 Read. Why would a turtle hide in its shell? With a partner, list two examples.

Point to the picture of the turtle for students to describe. Have pairs find two examples of a stimulus that might cause a turtle to pull its head into its shell.

3 How do you respond to the following stimuli? Write your answers and compare them with a partner.

A stimulus is something that causes a reaction in a living thing. What do you do when somebody tickles you? Write on the board *When somebody tickles me, I laugh. What is the stimulus that makes you laugh? Tickling!* Have students complete the sentences and compare answers with a partner.

Elaborate

Science Notebook: Animal Behaviors

Discuss animal behaviors students have observed. Have students identify what caused each behavior. For example, students may have observed a dog bark (*behavior*) when the doorbell rings (*stimulus*). Have students write in their Science Notebooks the sentence frame *A dog may bark when* _____. and complete it with as many options as they can. Check answers as a class.

Lesson 2

How do animals respond to the environment?

Objective: Learn about animal instincts.

Vocabulary: *bee orchid, leaf insect, inherit, physical characteristics, wings, fur, sea star, low tide, shallow, suck, pant*

Digital Resources: *I Will Know...* Digital Activity

Materials: selected Animal Cards or pictures of different animals

Build Background Display pictures of different animals on the board. Taking turns, volunteers write below each picture the physical characteristics each animal inherited from its parents.

Explain

4 Which picture shows a plant? Which shows an animal? Discuss with a partner and label each picture with the words from the box.

Call students' attention to the two pictures at the top of the page. Invite pairs to discuss which picture shows an animal. Explain that some plants and animals disguise themselves by blending in with their surroundings in order to hide from predators or prey.

Think!

What advantages do insects that look like plants have?

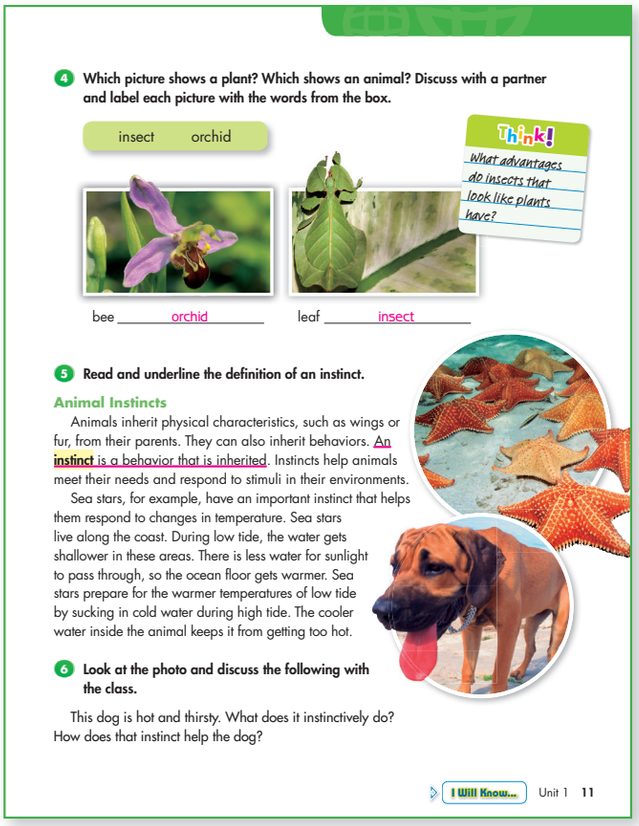
Review with students what they already know about camouflage. Discuss answers to the question with the class.

5 Read and underline the definition of an instinct.

Ask students to read and underline the definition of an instinct. Guide them to conclude that, not only do animals inherit physical characteristics, but they also inherit behaviors. Use board drawings to explain how sea stars use instinctive behavior to survive.

ELL Content Support

Are only basic behaviors instinctive?
Students may think that only basic behaviors, such as a baby grabbing an object that touches its hand, are instinctive. Many instinctive behaviors are more involved. Spiders instinctively spin webs using different types of silk. The threads in the middle of the web are sticky, so they are more likely to trap prey. The threads on the outside are not adhesive, which allows the spider to move along them easily to reach the prey.


4 Which picture shows a plant? Which shows an animal? Discuss with a partner and label each picture with the words from the box.

insect orchid

Think! What advantages do insects that look like plants have?

bee orchid leaf insect

5 Read and underline the definition of an instinct.

Animal Instincts

Animals inherit physical characteristics, such as wings or fur, from their parents. They can also inherit behaviors. An instinct is a behavior that is inherited. Instincts help animals meet their needs and respond to stimuli in their environments.

Sea stars, for example, have an important instinct that helps them respond to changes in temperature. Sea stars live along the coast. During low tide, the water gets shallower in these areas. There is less water for sunlight to pass through, so the ocean floor gets warmer. Sea stars prepare for the warmer temperatures of low tide by sucking in cold water during high tide. The cooler water inside the animal keeps it from getting too hot.

6 Look at the photo and discuss the following with the class.

This dog is hot and thirsty. What does it instinctively do? How does that instinct help the dog?

I Will Know... Unit 1 11

6 Look at the photo and discuss the following with the class.

Have pairs describe and predict what is happening to the dog in the picture. *Dogs cannot sweat through their skin like we do. When their body temperature rises, they pant to make air circulate through their bodies to cool down. Panting is an instinctive behavior. What else can dogs do instinctively when they are hot and thirsty?* Discuss answers with the class.

Elaborate

Instinctive Animal Behavior Posters

Distribute an Animal Card to each student. Have students draw and color their animals on sheets of construction paper. Then ask each student to research three instinctive behaviors of their animal on the Internet. Have students draw and write how those behaviors help it survive in its environment. Display the posters on the classroom walls and ask students to present them to the class.

I Will Know...

Have students do the *I Will Know...* Digital Activity.

Lesson 2

How do animals respond to the environment?

Objective: Learn that hibernation, migration, and protection are examples of instinctive behavior.

Vocabulary: *migration, migrate, geese, flocks, protection, porcupine, quills, threatened, hibernation*

Digital Resources: Flash Cards (*migration, protection, hibernation*)

Materials: pictures of a cat arching its back and of a Monarch butterfly

Build Background Display or draw a picture of a cat arching its back and puffing up its fur. *Suppose a cat arches its back and puffs up its fur. Why would the cat have that reaction?* (Possible answer: *Because it feels threatened and it is a way of protecting itself.*) *How might this behavior help the cat?* (Possible answer: *The cat makes itself appear larger and more threatening to other animals.*)

Explain

7 Read and write the titles of the texts.

Cats' arching their backs is another example of instinctive behavior. We are going to read about three more examples of instinctive behavior.

Cover the names of the *migration*, *protection*, and *hibernation* Flash Cards and display the cards. Have students predict what kind of instinctive behavior they think these animals may have. Have students read and label each text.

ELL Content Support

Exploit the opportunity to review animal vocabulary seen in this unit. Use board drawings for students to guess what you draw: *goose/geese, porcupine, marmot, monarch butterfly, peacock/peahen, mane, lion cub, wings, fur, sea star,* etc.

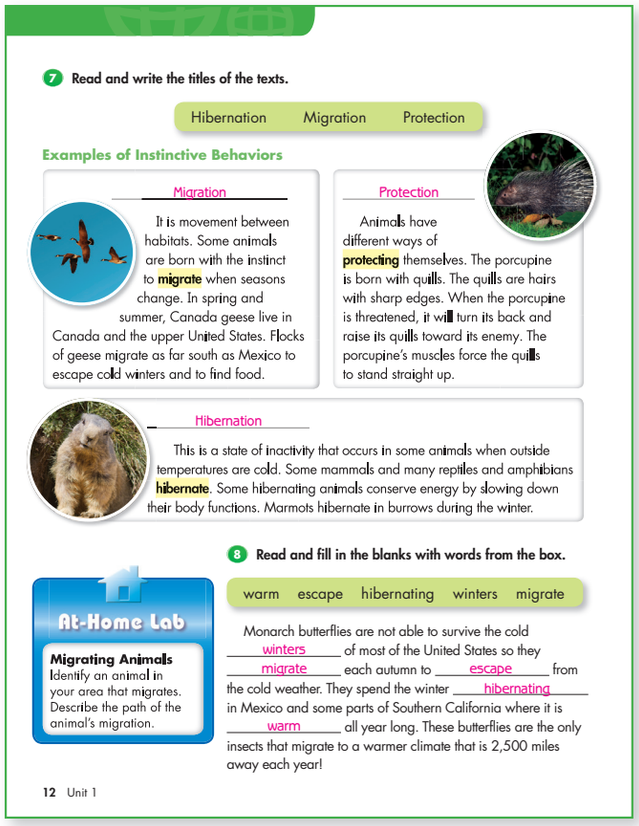
8 Read and fill in the blanks with words from the box.

Display the Monarch butterfly picture. *What kind of instinctive behavior do you think Monarch butterflies use to survive?* Have students read and complete the text with the words from the box.

Elaborate

Monarch Butterfly Migration Routes

Have students research on the Internet the flight paths of Monarch butterflies. Ask them to use a map to draw the routes.



7 Read and write the titles of the texts.

Hibernation Migration Protection

Examples of Instinctive Behaviors

Migration

It is movement between habitats. Some animals are born with the instinct to **migrate** when seasons change. In spring and summer, Canada geese live in Canada and the upper United States. Flocks of geese migrate as far south as Mexico to escape cold winters and to find food.

Protection

Animals have different ways of **protecting** themselves. The porcupine is born with quills. The quills are hairs with sharp edges. When the porcupine is threatened, it will turn its back and raise its quills toward its enemy. The porcupine's muscles force the quills to stand straight up.

Hibernation

This is a state of inactivity that occurs in some animals when outside temperatures are cold. Some mammals and many reptiles and amphibians **hibernate**. Some hibernating animals conserve energy by slowing down their body functions. Marmots hibernate in burrows during the winter.

At-Home Lab

Migrating Animals
Identify an animal in your area that migrates. Describe the path of the animal's migration.

8 Read and fill in the blanks with words from the box.

warm escape hibernating winters migrate

Monarch butterflies are not able to survive the cold ___winters___ of most of the United States so they ___migrate___ each autumn to ___escape___ from the cold weather. They spend the winter ___hibernating___ in Mexico and some parts of Southern California where it is ___warm___ all year long. These butterflies are the only insects that migrate to a warmer climate that is 2,500 miles away each year!

12 Unit 1

At-Home Lab

Migrating Animals

Tell students that they can use field guides at their library or on the Internet to help them identify an animal that migrates in their area. Encourage students to use a map, globe, or atlas to locate and trace the path of the animal's migration.

Science Notebook: Hibernation

Have students make a Frayer model for hibernation in their Science Notebooks. Tell students to write the word *Hibernation* in the center circle on the page and its definition at the top left. Have students list some of the characteristics of hibernation at the top right. In the lower left, have students find and fill in examples, such as deer mice, prairie dogs, chipmunks, grizzly bears, and hedgehogs. The lower right is for non-examples, such as pandas.

ELL Content Support

True Hibernation

Most animals do not truly hibernate. In true hibernation, body temperature drops to almost 0 °C, metabolism slows down, and heart rate drops. A true hibernator may appear to be dead. It must wake up every few days to eat, however. Ground squirrels and bats are examples of true hibernators.

Lesson 2

How do animals respond to the environment?

Objective: Learn how some behaviors may develop as a result of training.

Vocabulary: *training, skunk, hunt, prey* (n), *learned behavior, pride, pounce, sparrow*

Digital Resources: Flash Card (*offspring*), *Lesson 2 Check* (print out 1 per student), *Got it? 60-Second Video*

Build Background Ask the lesson question again and allow students to say what they have learned so far about how animals respond to the environment.

Explain

9 Read and underline the sentence that tells how the lion cub learns to hunt its prey.

Display the *offspring* Flash Card. Have students discuss what the lion cub eats while it is a baby and what it will have to learn as it gets older. Students read and underline how the lion cub learns to hunt its prey.

10 With a partner, name two behaviors that human babies might learn from their parents.

Point to the picture and encourage students to describe what is happening. (*The mother is showing the baby girl how to brush her teeth.*) Pairs discuss two behaviors that human babies might learn from their parents. Check answers as a class. Guide students to conclude that babies learn many things by observing and imitating their parents.

11 Read. If this adult sparrow cannot complete its song, what can you conclude? Discuss as a class.

Have students look at the sparrow in the picture and discuss how sparrows learn to sing. Read the question aloud before students read the text. Have students discuss why an adult sparrow might not be able to complete its song. (Answer: *Because it was separated from its parents when it was young.*)

9 Read and underline the sentence that tells how the lion cub learns to hunt its prey.

Learned Behavior

Not all behaviors are instinctual. Some behaviors develop as a result of training or changes in experience. Young animals learn many things as they interact with the environment. A dog that attacks a skunk may get sprayed with a bad-smelling liquid. The dog may learn to keep away from skunks.

Human babies learn many things by observing their parents. Young animals do, too. Lion cubs learn to hunt by watching older lions. A pride, or group of lions, often hunts together. Zebras are common prey for lions. A herd of zebras keeps safe from attack by staying together. When a zebra is separated from the herd, the lions will chase it toward a group of lions that is hiding. The lions will then pounce on their prey. A lion cub learns to pounce on its prey by pouncing on its mother's twitching tail. Learning the pouncing behavior helps the lion cub survive and get the food it needs.

10 With a partner, name two behaviors that human babies might learn from their parents.

11 Read. If this adult sparrow cannot complete its song, what can you conclude? Discuss as a class.

Learning and Instinct Combined

Some behaviors are partly instinctive and partly learned. The white-crowned sparrow inherits the ability to recognize the song its species sings. But knowing how to sing the song is not inherited. Sparrows must learn the song from their parents. Scientists have found that young sparrows that are separated from their parents never learn to sing the complete song.

Humans inherit the ability to learn much more than animals can learn. For example, humans inherit the ability to learn language. But we are not born knowing English, Spanish, or Chinese. We must learn the words used in our language.

Lesson 2 Check | Got it? 60-Second Video | Unit 1 13

Elaborate

Science Notebook: My Learned Behavior

Have students work in small groups and brainstorm different ways people learn. For example, young children might learn how to tie their shoes by first having a family member show them (observation) and then by trying it themselves (hands-on learning) until they can tie their shoes themselves. Then have students list basic behaviors they have learned, such as eating with a spoon or riding a bike, who taught them, and how they learned the behaviors.

Evaluate

Lesson 2 Check Assessment for Learning

Distribute the *Lesson 2 Check* and guide students as they complete it. Check answers as a class. Then ask students to grade their progress on the topic of how animals respond to the environment from 1 to 3: 3 = *I understand about how animals respond to the environment*; 2 = *I need to study more*; 1 = *I need help!* Encourage students giving themselves a 1 or 2 to describe what they found difficult and what they need to study more.

Got it? 60-Second Video

Review Key Words for Lesson 2 (see Student's Book page 10). Play the *Got it? 60-Second Video* to review the lesson material.

Let's Investigate!

In this unit, students learn what plant and animal characteristics are inherited and how animals respond to the environment. In this lab, students will observe how some fish use a swim bladder to float.

Let's Investigate! Lab **How can some fish float?**

Objective: Students will make a model of a swim bladder to demonstrate how fish float and sink.

Materials: 1 set of materials per small group of students: clear tape, balloon (15 cm), flexible plastic straw, clear plastic bottle (500 mL), rectangular plastic tub, water (to fill tub half full)

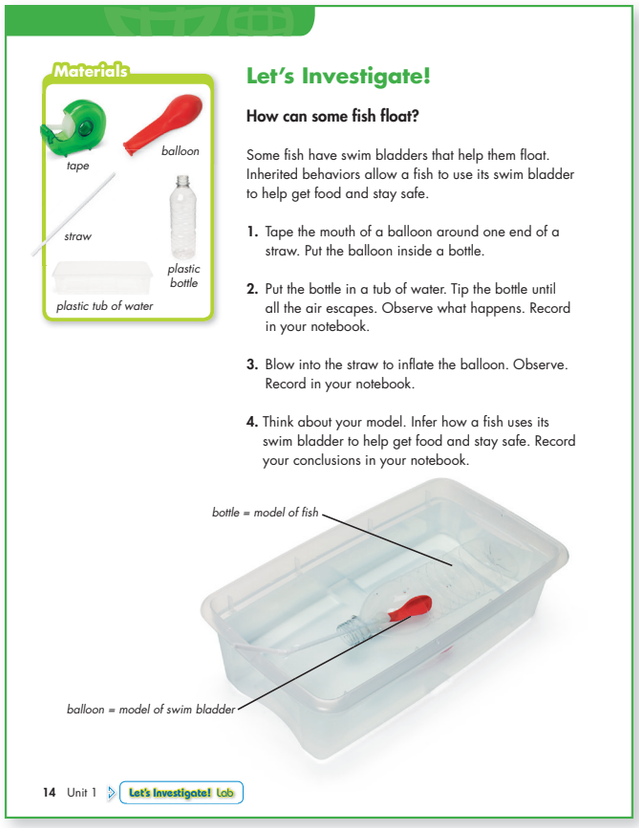
Digital Resources: *Let's Investigate!* Digital Lab, *Let's Investigate! Activity Card* (1 per group)

- Divide students into small groups and distribute materials.
- Ask students to tape the mouth of a balloon around one end of a straw and put the balloon inside the bottle.
- Have students put the bottle in a tub of water and tip the bottle until all the air escapes.
- Ask students to record their observations in their notebooks.
- At the end of the activity, have students share their observations with the class. Guide them to conclude that the swim bladder is an inherited characteristic that allows many types of fish to survive in water.

Teacher Time-Saving Option: Show the *Let's Investigate!* Digital Lab as an alternative to the hands-on lab activity.

Unlock the Big Question

Have students refer to the Big Question on the Unit Opener page. In pairs, have them recall what they have learned about what plants and animals need to survive. Invite student pairs to share their answers to question 5 on the *Let's Investigate! Activity Card.*



Class Project: A Day in the Life

Materials: construction paper (1 sheet per group), markers

Distribute materials. Divide the class into small groups. Ask students to choose one of the animals that they read about in the unit and write and illustrate a cartoon strip about a day in the life of this animal. Students should describe the behaviors, both instinctual and learned, that help the animal to escape predators and/or function as a predator. Display the cartoon strips on the classroom walls for the class to read.

Unit 1 Review

What do living organisms need to survive?

Digital Resources: Print out 1 of each per student: *Got it? Self Assessment, Got it? Quiz*

Evaluate

Strategies for Targeted Review

The following are strategies for providing targeted review for students if they encounter challenges with the content.

Lesson 1 What plant and animal characteristics are inherited?

Question 1

If… students are having difficulty completing the sentences, then… direct students to Lesson 1. Encourage them to look back at the texts where the words appear and read them in context.

Question 2

If… students are having difficulty remembering characteristics baby giraffes inherit from their parents, then… direct students to page 8 and have them look at the information about giraffes at the bottom of the page.

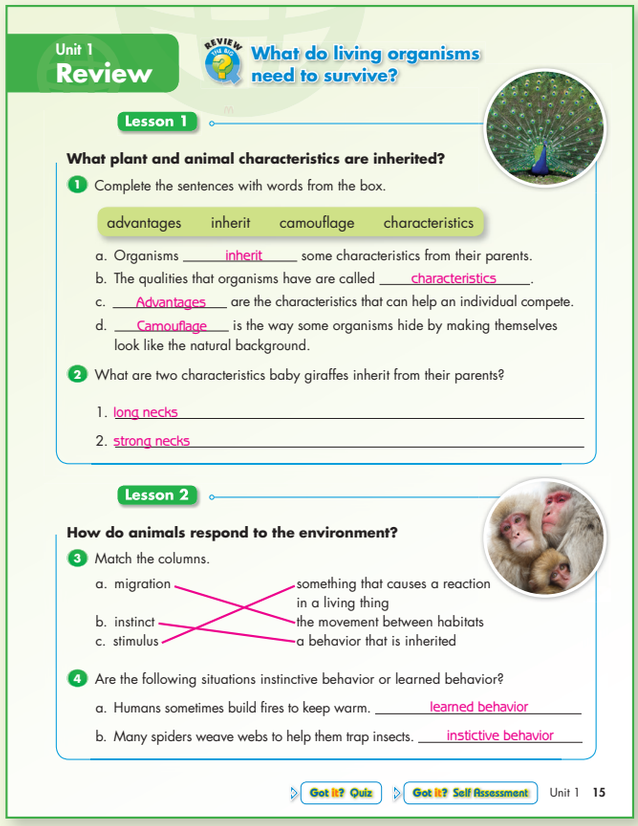
Lesson 2 How do animals respond to the environment?

Question 3

If… students are having difficulty deciding how to match the information, then… direct students to look back over Lesson 2 and find the words in the text to help understand them.

Question 4

If… students are having difficulty identifying the instinctive and learned behaviors, then… direct students to look back over Lesson 2 and find the definitions of these types of behaviors. Then elicit examples.



Unit 1 Review

What do living organisms need to survive?

Lesson 1

What plant and animal characteristics are inherited?

1 Complete the sentences with words from the box.

advantages inherit camouflage characteristics

a. Organisms inherit some characteristics from their parents.
b. The qualities that organisms have are called characteristics.
c. Advantages are the characteristics that can help an individual compete.
d. Camouflage is the way some organisms hide by making themselves look like the natural background.

2 What are two characteristics baby giraffes inherit from their parents?

1. long necks
2. strong necks

Lesson 2

How do animals respond to the environment?

3 Match the columns.

a. migration — the movement between habitats
b. instinct — a behavior that is inherited
c. stimulus — something that causes a reaction in a living thing

4 Are the following situations instinctive behavior or learned behavior?

a. Humans sometimes build fires to keep warm. learned behavior
b. Many spiders weave webs to help them trap insects. instictive behavior

Got it? Quiz | Got it? Self Assessment | Unit 1 15

ELL Language Support

Before students start working on the Review activities, have them read each question aloud along with you.

Got it? Self Assessment

Immediately after students have completed the Review activities, distribute a *Got it? Self Assessment* to each student. Have students complete the *Stop! Wait! and Go!* statements for each lesson, allowing them to look back through the lesson material if necessary.

Got it? Quiz

Distribute a Unit 1 *Got it? Quiz* to each student. Quizzes may be used for assessing students' understanding of unit concepts as well as for grading purposes.

Lesson 1 Check

Name _____ Date _____

Words to Know

Write the word next to the description it matches.

characteristics	advantage	inherit

1. inherit — to receive characteristics from an organism's parents
2. advantage — a characteristic that can help an individual compete in its environment
3. characteristics — the qualities that an organism has

Explain

Write whether each statement is true or false. Explain your choice.

4. A pea plant's environment is the only thing that determines its characteristics.
   This statement is false because a pea plant inherits some of its characteristics, such as the color of its flowers, from its parents.
5. One advantage of the peacock flounder is its ability to change color.
   This statement is true because changing color helps the peacock flounder match its background and catch food.

Apply Concepts

6. Study the picture. What are three characteristics the baby koala probably inherited from its parent?
   Possible answer: It probably inherited its black nose, gray and white fur, and four legs.

Lesson 2 Check

Name _____ Date _____

Words to Know

Write the word next to the description it matches.

stimulus	instinct	migration

1. instinct — a behavior that is inherited
2. migration — the movement between habitats
3. stimulus — something that causes a reaction in a living thing

Explain

Write whether each statement is true or false. Explain your choice.

4. An animal's behavior is either learned or instinctive.
   This statement is false because some behaviors are partly instinctive and partly learned.
5. A dog doing tricks is an example of a learned behavior.
   This statement is true because a dog must be trained to do tricks. It it is not born knowing how to do them.

Apply Concepts

6. Many spiders weave webs to help them trap insects. Why is it important for this behavior to be an instinct?
   Possible answer: It is important because spiders are not raised by parents that teach them how to weave webs to catch food. Spiders need webs as soon as they are born to catch food.

Lesson 1 Let's Explore! Activity Card

Name _____ Date _____

Materials

Environmental Effect Cards

A Cards *B Cards* *C Cards*

How can some characteristics be affected by the environment?

Many characteristics are inherited. Some are affected by the environment. A Cards show living things as they often appear. B Cards show how the living things may appear depending on the environment. C Cards tell what factors affected the living things.

1. Observe the living thing on an A Card. Match it with a B Card.
2. Find the matching C Card.
3. Repeat for each A Card. Compare your matches with others. Explain any differences.

Explain Your Results

4. Pick an A Card. Explain how the characteristic was affected by the environment.
   Possible answer: The usual shape of an evergreen tree will be flattened on one side if a building is too close to the tree as it grows.

What would happen if a living thing could not change its characteristics when its environment changed?

Possible answer: The living thing would have a hard time growing, finding food, or surviving.

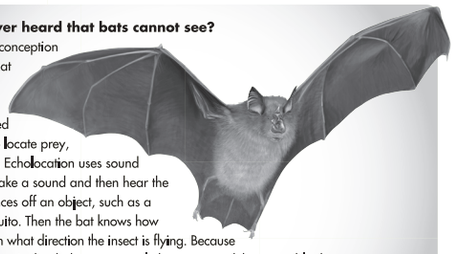
Lesson 2 Explore My Planet! Activity Card

Name _____ Date _____

Misconception: Echolocation

Have you ever heard that bats cannot see?

A common misconception about bats is that they are blind. Some bats use something called echolocation to locate prey, such as insects. Echolocation uses sound energy. Bats make a sound and then hear the echo as it bounces off an object, such as a delicious mosquito. Then the bat knows how far away and in what direction the insect is flying. Because bats can find prey in the dark, many people have assumed they were blind. But all types of bats have eyes that can see. They can see only in black, white, and shades of gray.



1. How can some bats get information from their environments?
   Possible answer: Some bats can use echolocation or sight.

Explain one reason a bat's echolocation is useful.

Possible answer: It is useful because the bat can hunt at night.

Let's Investigate! Activity Card

Name _____ Date _____

Analyze and Conclude

5. What would happen to the fish if its swim bladder filled with water?

Possible answer: The fish would sink.

Lessons 1 & 2 Got it? Self Assessment

Name _____ Date _____

Got it? Self Assessment

Complete the statements for each lesson.

Lesson 1 What plant and animal characteristics are inherited?

Stop! I need help with _____

Wait! I have a question about _____

Go! Now I know _____

Lesson 2 How do animals respond to the environment?

Stop! I need help with _____

Wait! I have a question about _____

Go! Now I know _____

Got it? Quiz

Name _____ Date _____

Got it? Quiz

Circle the choice you think is correct for each multiple choice question.

1. What did Mendel observe that made him study his pea plants in more depth?
- **A** All his pea plants were exactly the same.
- **B** The offspring looked exactly like their parents.
- **C** Sometimes offspring received different characteristics.
- **D** Parents did not pass any characteristics on to their offspring.

2. Which characteristic helps the prickly pear cactus survive in a dry environment?
- **A** its flattened stems
- **B** the waxy coating on its pads
- **C** the yellow-green color of its pads
- **D** its two kinds of sharp spines

3. What is an example of an instinct?
- **A** A spider spins webs.
- **B** A child speaks Chinese.
- **C** A sea lion balances a ball on its nose.
- **D** A dog stays away from skunks.

4. Which characteristic shows a change due to a stimulus in the environment?
- **A** A zebra's stripes have a different pattern than its parents' stripes do.
- **B** A pea plant grows white flowers.
- **C** Peacocks grow showy tails.
- **D** A flounder can change its color.

5. Which is an inherited characteristic of an animal?
- **A** chasing a zebra that has been separated from the herd
- **B** opening doors that have sensors
- **C** knowing how to brush your teeth
- **D** having white feathers

6. Which of these is NOT a peacock flounder's inherited characteristic?
- **A** It has both eyes on the same side.
- **B** It has an eye on each side of its face.
- **C** It can change its color.
- **D** It can change its pattern.

Got it? Quiz

Name _____ Date _____

7. A turtle that pulls its head into its shell is an example of _____.
- **A** a behavior caused by a stimulus
- **B** migration
- **C** hibernation
- **D** echolocation

8. Flocks of geese fly from Canada to Mexico to escape cold winters. This is an example of _____.
- **A** protection
- **B** hibernation
- **C** migration
- **D** camouflage

9. How does a goose's instinct to migrate help it to survive? Explain.

Possible answer:
The goose's instinct helps it leave northern areas when the winter is approaching. This helps it to move to southern areas where it can still find food. When the weather warms up in the spring, it can move to northern areas where it can find food again.

10. How is an instinct different from a learned behavior? Explain.

Possible answers:
An instinct is a behavior an animal is born with. A learned behavior is a behavior an animal learns by observation and experience.

Unit 1 Study Guide

What do living organisms need to survive?

Lesson 1

What plant and animal characteristics are inherited?

- Organisms inherit some characteristics from their parents.
- Some characteristics may give an individual an advantage over other individuals.

Lesson 2

How do animals respond to the environment?

- Animal behaviors are responses to stimuli in the environment or stimuli within the animal. These responses can help animals survive.
- Animals inherit instinctive behaviors. Other behaviors are learned.

Review the Big Question

What do living organisms need to survive?

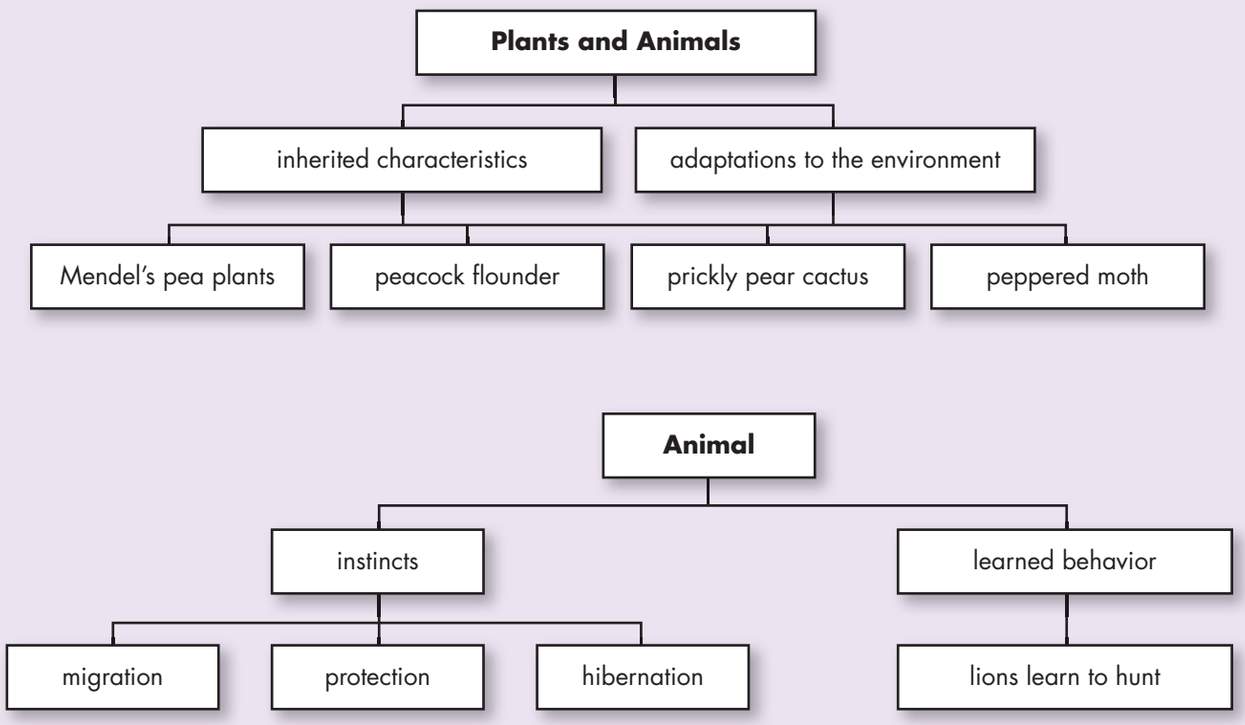
Have students use what they have learned from the unit to answer the question in their own words.

How has your answer to the Big Question changed since the beginning of the unit? What are some things you learned that caused your answer to change?

Make a Concept Map

Have students make a concept map like the one shown on this page to help them organize key concepts.

Unit 1 Concept Map



Students can make a concept map to help review the Big Question.

Teacher's Notes