

Grade 1 Science

Unit 2: Plant and Animal Survival

20 lessons and a unit quiz. Use this pack with the **Plant and Animal Survival Student Reader** (print it, or download it once from the course) to teach the whole unit without the internet.

What is in this pack

- A lesson plan for each chapter: the Big Question, words to know, which pages to read, questions to talk over and the activity pages.
- The unit quiz, ready to print.
- Answers for the teacher at the back: every discussion question and the quiz key.

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Lesson schedule

Two or three lessons a week, about 30 minutes each. Tick each one off as you go.

	Lesson	Reader pages	Activity pages
☐	Getting started: Meet the Big Question	PDF pages 6–11	—
☐	Lesson 1.1: What Parts Do Animals Have?	—	AP 1.1.1
☐	Lesson 1.2: How Do Animals Use Their Parts?	—	AP 1.2.1
☐	Lesson 1.3: How Do Plant Parts Help the Plant?	—	AP 1.3.1, AP 1.3.3
☐	Lesson 1.4: What Things Do We Use That Are Similar to Animal and Plant Parts?	PDF pages 12–23	AP 1.4.1
☐	Lesson 1.5: Lesson 1 Roundup: What Problems Can We Solve?	—	AP 1.5.1, AP 1.5.3
☐	Lesson 2.1: What Sensory Parts Do Animals Have?	—	AP 2.1.1, AP 2.1.2, AP 2.1.3, AP 2.1.4
☐	Lesson 2.2: How Do Animals Sense and Respond to Things?	—	AP 2.2.1
☐	Lesson 2.3: Plants Have Senses, Too!	—	AP 2.3.1, AP 2.3.2, AP 2.3.3
☐	Lesson 2.4: Animal and Plant Senses	PDF pages 24–35	AP 2.4.1, AP 2.4.2
☐	Lesson 2.5: Lesson 2 Roundup: Mimicking Animal and Plant Senses	—	AP 2.5.1, AP 2.5.2, AP 2.5.3
☐	Lesson 3.1: What Are Parents and Offspring?	—	AP 3.1.1, AP 3.1.2, AP 3.1.3
☐	Lesson 3.2: Plant Traits	—	AP 3.2.1
☐	Lesson 3.3: Animal Traits	—	AP 3.3.1
☐	Lesson 3.4: Animals, Plants, and Their Traits	PDF pages 36–43	AP 3.4.1
☐	Lesson 3.5: Lesson 3 Roundup: Groups of Plants and Animals	—	AP 3.5.1
☐	Lesson 4.1: What Behaviors Help Offspring Survive?	—	AP 4.1.1
☐	Lesson 4.2: Behaviors of Parents and Offspring	—	AP 4.2.1

	Lesson	Reader pages	Activity pages
☐	Lesson 4.3: Parents and Their Behaviors	—	AP 4.3.1
☐	Lesson 4.4: Lesson 4 Roundup: Offspring Survival Behaviors	PDF pages 44–64	AP 4.4.1, AP 4.4.2
☐	Unit review and assessment	—	—
☐	Words quiz	—	—

Page numbers are the PDF page numbers of the Student Reader file, so they match what your PDF reader shows.

Getting started: Meet the Big Question

THE BIG QUESTION

How is a wildlife center designed to help animals survive?

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 25–35: the steps, materials and timing for this lesson.

Read

Read Student Book, Chapter 1: “Luzi Saves an Owl”: PDF pages 6–11. Look at the pictures and maps together.

Talk it over

1. yes LITERAL—What part of the body does an owl use to fly?
2. Ask students, What kinds of animals do you see outside?
3. It belongs in its nest. (See Know the Standards 1.) NGSS Elements LITERAL—What does the owl look like?
4. DCI LS1.A INFERENTIAL—What might this owl be doing on the ground?
5. LITERAL—What does the vet tell Luzi about the owl?
6. She is excited to help! 7 INFERENTIAL—Why would someone want to volunteer at a wildlife rescue center?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: How is a wildlife center designed to help animals survive?

Lesson 1.1: What Parts Do Animals Have?

THE BIG QUESTION

What are some animal body parts, and what do they do?

Words to know

- **animal** — a living thing that eats plants or other animals and can move around
- **body part** — any internal or external piece of an organism
- **purpose** — the reason why something is done
- **use** — to handle or employ something for a specific purpose

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 36–43: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: What are some animal body parts, and what do they do?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 1.1.1: Animal Museum — Teacher Guide PDF page 239

Lesson 1.2: How Do Animals Use Their Parts?

THE BIG QUESTION

How Do Animals Use Their 1.2 How do different body parts help Parts?

Words to know

- **animal** — a living thing that eats plants or other animals and can move around
- **body part** — any internal or external piece of an organism
- **purpose** — the reason why something is done
- **safe** — protected from harm or danger

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 44–54: the steps, materials and timing for this lesson.

Talk it over

1. Use question prompts to help stimulate student ideas about what they know, such as the following (see Know the Science 1): What is unique about birds?
2. What do birds need to live?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: How Do Animals Use Their 1.2 How do different body parts help Parts?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 1.2.1: What We Notice — Teacher Guide PDF page 240

Lesson 1.3: How Do Plant Parts Help the Plant?

THE BIG QUESTION

How Do Plant Parts Help the 1.3 How do plant parts help them Plant (two class sessions) survive?

Words to know

- **flower** — the bloom of a plant where pollination occurs
- **leaf** — the plant part that is attached to the stem and collects light for the plant
- **plant** — a living thing that needs light, water, and air to grow
- **root** — the plant part that takes up water and minerals, typically underground
- **stem** — the central part of a plant that provides support

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 55–62: the steps, materials and timing for this lesson.

Talk it over

1. Print What Makes Up a Plant?
2. Distribute What Makes Up a Plant?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: How Do Plant Parts Help the 1.3 How do plant parts help them Plant (two class sessions) survive?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 1.3.1: What Makes Up a Plant? — Teacher Guide PDF page 241
- Activity Page 1.3.3: Plant Game — Teacher Guide PDF page 243

Lesson 1.4: What Things Do We Use That Are Similar to Animal and Plant Parts?

THE BIG QUESTION

What Things Do We Use That Are Similar to Animal and Plant Parts?

Words to know

- **flower** — the bloom of a plant where pollination occurs
- **leaf** — the plant part that is attached to the stem and collects light for the plant
- **plant** — a living thing that needs light, water, and air to grow
- **root** — the plant part that takes up water and minerals, typically underground
- **stem** — the central part of a plant that provides support

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 63–82: the steps, materials and timing for this lesson.

Read

Read Student Book, Chapters 2–3: “What Parts Do Animals Have?” and “What Parts Do Plants Have?”: PDF pages 12–23. Look at the pictures and maps together.

Talk it over

1. internet access and the means to project images/video for whole-class viewing
Activity Page What Do We Use?
2. Distribute What Do We Use?
3. What does an elephant trunk look like?
4. LITERAL—What is the worker doing to the baby sloth?
5. LITERAL—What are some of the parts of the owl?
6. A cheetah has parts that help it run fast. 10 LITERAL—What are some other ways that animals can move?
7. A frog catches insects with its tongue. 11 INFERENTIAL—Why don't birds have a long tongue?
8. Ask students what else they wonder about sharks. (See Know the Science 3.)
LITERAL—What parts do humans have that let us breathe?
9. LITERAL—What part of the plant do you see?
10. INFERENTIAL—Why do you think a cactus's roots are close to the surface?
11. New plants grow. 18 LITERAL—Where does the bee get the pollen?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What Things Do We Use That 1.4 What objects do humans use that Are Similar to Animal and Plant look and act like animal and plant Parts?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 1.4.1: What Do We Use? — Teacher Guide PDF page 244

Lesson 1.5: Lesson 1 Roundup: What Problems Can We Solve?

THE BIG QUESTION

How can we mimic plant and animal Problems Can We Solve?

Words to know

- **biomimicry** — the imitation of natural biological structures, systems, and processes

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 83–89: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: How can we mimic plant and animal Problems Can We Solve?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 1.5.1: Animal and Plant Cards — Teacher Guide PDF page 245
- Activity Page 1.5.3: Let's Solve a Problem! — Teacher Guide PDF page 248

Lesson 2.1: What Sensory Parts Do Animals Have?

THE BIG QUESTION

What Sensory Parts Do Animals Have?

Words to know

- **animal** — a living thing that eats plants or other animals and can move around

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 90-101: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: What Sensory Parts Do Animals Have?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 2.1.1: Seeing Station — Teacher Guide PDF page 249
- Activity Page 2.1.2: Detective Sheet — Teacher Guide PDF pages 250-251
- Activity Page 2.1.3: Cat Senses — Teacher Guide PDF page 252
- Activity Page 2.1.4: Animal Senses — Teacher Guide PDF page 253

Lesson 2.2: How Do Animals Sense and Respond to Things?

THE BIG QUESTION

How Do Animals Sense and 2.2 How do animals sense and Respond to Things?

Words to know

- **sight** — the sense of vision, the ability to detect objects with eyes by sensing light
- **sound** — vibrations detected by the sense of hearing
- **vibration** — rapid back-and-forth motion

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 102–108: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: How Do Animals Sense and 2.2 How do animals sense and Respond to Things?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 2.2.1: How Animals Respond — Teacher Guide PDF page 254

Lesson 2.3: Plants Have Senses, Too!

THE BIG QUESTION

How do plant and animal parts allow them to sense and respond to their surroundings?

Words to know

- **phototropism** — the growth of a plant in response to the location of a light source
- **thigmotropism** — the growth of a plant in response to touch
- **tropism** — the growth of a plant in response to something it detects in its environment

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 109–116: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: How do plant and animal parts allow them to sense and respond to their surroundings?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 2.3.1: Plant Picture — Teacher Guide PDF page 255
- Activity Page 2.3.2: Seeds — Teacher Guide PDF page 256
- Activity Page 2.3.3: What Plants Sense — Teacher Guide PDF page 257

Lesson 2.4: Animal and Plant Senses

THE BIG QUESTION

How do plant and animal parts allow them to sense and respond to their surroundings?

Words to know

- **safe** — protected from harm or danger

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 117–138: the steps, materials and timing for this lesson.

Read

Read Student Book, Chapters 4–5: “How Do Animals Use Their Senses?” and “How Do Plants Respond to the Environment?”: PDF pages 24–35. Look at the pictures and maps together.

Talk it over

1. internet access and the means to project images and video for whole-class viewing
Student Book, Chapter 5 “How Do Plants Respond to the Environment?” Activity Pages
What Part Would I Use?
2. Place students in pairs, and distribute What Part Would I Use?
3. It can see food from almost two miles away. 21 LITERAL—Which animal can see food from miles away?
4. Not all animals have eyes to see or ears to hear, but they have other body parts that allow them to sense their surroundings. 116 PLANT AND ANIMAL SURVIVAL
LITERAL—Which animal on the page has large ears?
5. LITERAL—How does the drum fish hear?
6. It can feel when the air around it moves. 23 LITERAL—Which animal can smell your sweat?
7. LESSON 2.4 | ANIMAL AND PLANT SENSES 119 LITERAL—Which animal squirts ink when it escapes from enemies?
8. That is why you hear the most cricket chirping in the summer. 25 INFERENTIAL—Why do you think the iguana lays its eggs when it senses that the sand is warm enough?
9. LITERAL—What are some things plants can respond to?
10. PLANT AND ANIMAL SURVIVAL LITERAL—What can plants NOT do?
11. LITERAL—What does sunlight let plants do?
12. LITERAL—What happens when plants get too hot?

13. DCI LS1.D Information Processing: Wilting and blooming are responses that plants have after sensing the temperature and the sunlight. 126 PLANT AND ANIMAL SURVIVAL LITERAL—What happens when trees sense colder temperature?
14. How do you know?
15. LITERAL—What part of the Venus flytrap senses when something touches it?
16. INFERENTIAL—Why do plant roots grow around objects underground?
17. LESSON 2.4 | ANIMAL AND PLANT SENSES 129 LITERAL—What are the children in the picture doing to study the plants?
18. Can the trap tell the difference between rainwater and other things?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: How do plant and animal parts allow them to sense and respond to their surroundings?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 2.4.1: What Part Would I Use? — Teacher Guide PDF page 258
- Activity Page 2.4.2: What Plants Do — Teacher Guide PDF page 259

Lesson 2.5: Lesson 2 Roundup: Mimicking Animal and Plant Senses

THE BIG QUESTION

How can people build useful things Mimicking Animal and Plant that work the way a plant or an Senses (three class sessions) animal responds to its surroundings?

Words to know

- **biomimicry** — the imitation of natural biological structures, systems, and processes

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 139–145: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: How can people build useful things Mimicking Animal and Plant that work the way a plant or an Senses (three class sessions) animal responds to its surroundings?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 2.5.1: Animal and Plant Cards — Teacher Guide PDF pages 260–261
- Activity Page 2.5.2: Human Problem Cards — Teacher Guide PDF page 262
- Activity Page 2.5.3: Let's Solve a Problem! — Teacher Guide PDF page 263

Lesson 3.1: What Are Parents and Offspring?

THE BIG QUESTION

What Are Parents and Lesson 3 Guiding Question: How alike Offspring?

Words to know

- **compare** — to examine characteristics of two or more things, particularly looking for similarities
- **contrast** — to look for differences between two things
- **describe** — to express details about something
- **observe** — to watch something and notice details about it (observation, n. the process of noticing details, or a specific detail that is noticed)

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 146–155: the steps, materials and timing for this lesson.

Talk it over

1. Ask students, But are they both cats?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What Are Parents and Lesson 3 Guiding Question: How alike Offspring?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 3.1.1: Animal and Plant Species Cards — Teacher Guide PDF page 264
- Activity Page 3.1.2: Animal and Plant Types — Teacher Guide PDF page 265
- Activity Page 3.1.3: Parents and Offspring — Teacher Guide PDF page 266

Lesson 3.2: Plant Traits

THE BIG QUESTION

How are plants of the same type alike and different?

Words to know

- **compare** — to examine characteristics of two or more things, particularly looking for similarities
- **contrast** — to look for differences between two things
- **describe** — to express details about something
- **observe** — to watch something and notice details about it (observation, n. the process of noticing details, or a specific detail that is noticed)

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 156–160: the steps, materials and timing for this lesson.

Talk it over

1. Place students in pairs, and distribute Plants: Same or Different?
2. In other words, what do both plants have that is the same?
3. How are plants of the same type alike and different?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: How are plants of the same type alike and different?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 3.2.1: Plants: Same or Different? — Teacher Guide PDF page 267

Lesson 3.3: Animal Traits

THE BIG QUESTION

How are animals of the same type alike and different?

Words to know

- **compare** — to examine characteristics of two or more things, particularly looking for similarities
- **contrast** — to look for differences between two things
- **describe** — to express details about something
- **sibling** — an offspring that share one or both parents

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 161–165: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: How are animals of the same type alike and different?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 3.3.1: Lost Puppy — Teacher Guide PDF page 268

Lesson 3.4: Animals, Plants, and Their Traits

THE BIG QUESTION

How are plants and animals of the 3.4 Animals, Plants, and Their Traits (two class sessions) same type alike and different?

Words to know

- **compare** — to examine characteristics of two or more things, particularly looking for similarities
- **contrast** — to look for differences between two things
- **describe** — to express details about something
- **observe** — to watch something and notice details about it (observation, n. the process of noticing details, or a specific detail that is noticed)

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 166–179: the steps, materials and timing for this lesson.

Read

Read Student Book, Chapters 6–7: “Plants Are Alike and Different” and “Animals Are Alike and Different”: PDF pages 36–43. Look at the pictures and maps together.

Talk it over

1. Ask students, How do you know when you see a plant?
2. LITERAL—What is similar about the parent and the young plant?
3. Monitor Progress LITERAL—What is similar about the parents and the young plants?
4. Repeat the names of the types of animals shown in the slideshow. • Ask, What are some ways you can tell animals apart?
5. LITERAL—Where does a cactus wren build its nest?
6. LESSON 3.4 | ANIMALS, PLANTS, AND THEIR TRAITS 169 LITERAL—What is different about all the birds on the page?
7. Which birds have wings?
8. Still, they will not be identical to their parents. 172 PLANT AND ANIMAL SURVIVAL INFERENTIAL—What do you think will happen to the baby animals when they grow up?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: How are plants and animals of the 3.4 Animals, Plants, and Their Traits (two class sessions) same type alike and different?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 3.4.1: Saguaros — Teacher Guide PDF page 269

Lesson 3.5: Lesson 3 Roundup: Groups of Plants and Animals

THE BIG QUESTION

How alike are plants and animals of the same kind?

Words to know

- **compare** — to examine characteristics of two or more things, particularly looking for similarities
- **contrast** — to look for differences between two things
- **describe** — to express details about something
- **observe** — to watch something and notice details about it (observation, n. the process of noticing details, or a specific detail that is noticed)

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 180–185: the steps, materials and timing for this lesson.

Talk it over

1. , What traits does the young plant or animal share with its parents? How are they similar? Do you see any patterns?
2. , What makes your plant or animal belong to that group?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: How alike are plants and animals of the same kind?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 3.5.1: Drawing Traits — Teacher Guide PDF page 270

Lesson 4.1: What Behaviors Help Offspring Survive?

THE BIG QUESTION

What Behaviors Help Offspring Lesson 4 Guiding Question: What Survive?

Words to know

- **describe** — to express details about something
- **observe** — to watch something and notice details about it (observation, n. the process of noticing details, or a specific detail that is noticed)

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 186–192: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: What Behaviors Help Offspring Lesson 4 Guiding Question: What Survive?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 4.1.1: Animal Behaviors — Teacher Guide PDF page 271

Lesson 4.2: Behaviors of Parents and Offspring

THE BIG QUESTION

What do different animals do to Offspring survive?

Words to know

- **media** — means of conveying messages (singular, medium)

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 193–198: the steps, materials and timing for this lesson.

Talk it over

1. Have students work with a partner to share what they think that word means. (See Know the Science 1 and 2.) • Ask, What do baby animals need to survive?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What do different animals do to Offspring survive?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 4.2.1: Patterns of Behavior — Teacher Guide PDF pages 272–274

Lesson 4.3: Parents and Their Behaviors

THE BIG QUESTION

How can we show what parents do (two class sessions) to help their offspring survive?

Words to know

- **media** — means of conveying messages (singular, medium)
- **model** — a representation of something that can help people learn about the real thing

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 199–204: the steps, materials and timing for this lesson.

Check for understanding

- Answer the Big Question in a sentence or two: How can we show what parents do (two class sessions) to help their offspring survive?
- Use one of today's words in a sentence of your own.

Activity pages

- Activity Page 4.3.1: Numbers of Examples — Teacher Guide PDF page 275

Lesson 4.4: Lesson 4 Roundup: Offspring Survival Behaviors

THE BIG QUESTION

What kinds of patterns in behavior of parents and offspring help offspring survive?

Words to know

- **media** — means of conveying messages (singular, medium)
- **puppet** — a physical model of a thing that can be manipulated to move

Teacher's lesson plan

Follow the Teacher Guide, PDF pages 205–237: the steps, materials and timing for this lesson.

Read

Read Student Book, Chapters 8–10: “How Do Adult Animals Care for Their Young?” and “Surviving Young” and “Science in Action”: PDF pages 44–64. Look at the pictures and maps together.

Talk it over

1. There are things in the ocean that are not good for the animals that live there. Science is a Way of Knowing LITERAL—What kind of visitor does Luzi's class have?
2. Explain that when parent animals see their babies doing these things, they respond in certain ways. (See Know the Science.) • Ask, What are some ways that animal parents respond when their babies show them that they need something?
3. LITERAL—What does the puppet on the page look like?
4. Adult owls catch food to feed its young. 41 LITERAL—How does an adult owl feed its young?
5. Ask, What animals do you see on the page?
6. It returns to the nest to feed the nectar to its offspring. 42 LITERAL—What are all of the parent animals in the pictures doing?
7. A mother cheetah licks its cub to help it stay clean. 43 LITERAL—What are all of the parent animals in the pictures doing?
8. A group of adult elephants will surround a calf to keep it safe. 44 LITERAL—How do elephants protect their young?
9. LITERAL—How do alligators keep their young safe?
10. Invite students to share all the things they can now do on their own that they could not do when they were babies. (See Know the Standards 3.) Ask, Were you able to eat on your own as a baby?

11. DCI LS1.B Can you eat on your own now?
12. See the Online Resources Guide for a link to the recommended video:
www.coreknowledge.org/cksci-online-resources Activity Page • Ask, What are the birds doing?
13. LITERAL—How did the owl change?
14. INFERENTIAL—When do you think the owl will be able to return to its home?
15. Baby monkeys begin to climb trees when they are very young. 47 LITERAL—When do young deer stop drinking milk from their mothers?
16. LITERAL—What can baby monkeys do when they are very young?
17. Different kinds of animals are more independent than others when they are born.
 212 PLANT AND ANIMAL SURVIVAL LITERAL—Why do baby snakes slither away as soon as they are born?
18. Then ask, What does your pet do when it is hungry?
19. LESSON 4.4 | LESSON 4 ROUNDUP: OFFSPRING SURVIVAL BEHAVIORS 213
 LITERAL—What is similar about all of the pets on this page?
20. LITERAL—What kind of habitat is this?
21. He helps ocean wildlife just like Luzi’s friends help desert animals.” 51
 LITERAL—What kind of habitat is shown in the picture?
22. If the turtles are hurt or sick, people take care of them in tanks at the rescue center until the turtles can survive on their own again. 52 NGSS Elements
 INFERENTIAL—What can you tell about the ocean by looking at these pictures?
23. LITERAL—What does Josue do?
24. INFERENTIAL—Why do you think it is important to keep tanks clean for sea turtles and other marine animals?
25. LITERAL—Who invented breathing equipment for underwater use?
26. UNIT SUPPLEMENT | SCIENCE IN ACTION: MEETING AN OCEAN NATURALIST 229
 LITERAL—Who was Jacques Cousteau?

Answers are at the back of this pack.

Check for understanding

- Answer the Big Question in a sentence or two: What kinds of patterns in behavior of parents and offspring help offspring survive?
- Use one of today’s words in a sentence of your own.

Activity pages

- Activity Page 4.4.1: Write a Statement — Teacher Guide PDF page 276
- Activity Page 4.4.2: Describe Patterns — Teacher Guide PDF page 277

UNIT REVIEW

Unit review and assessment

- Activity page answer key (for the teacher): Teacher Guide PDF pages 278–280

WORDS QUIZ

Plant and Animal Survival

Name: _____ Date: _____

Circle the letter of the best answer.

1. Which word means “a plan to show how something is made or how a process should work (v. to develop a plan for a device or a solution to a problem)”?
 - a) trait
 - b) puppet
 - c) design
 - d) model
2. Which word means “an offspring that share one or both parents”?
 - a) blooming
 - b) sense
 - c) sibling
 - d) thigmotropism
3. Which word means “the bloom of a plant where pollination occurs”?
 - a) puppet
 - b) blooming
 - c) model
 - d) flower
4. Which word means “a person who studies the history of nature”?
 - a) filter
 - b) naturalist
 - c) communicate
 - d) body part
5. Which word means “to react to something (response, n. a reaction to something)”?
 - a) respond
 - b) naturalist
 - c) problem
 - d) vibration
6. Which word means “the way in which something is made and the parts it is made of”?
 - a) structure
 - b) mimic
 - c) design
 - d) volunteer

- 7.** Which word means “a device that moves liquids or gases from one location to another”?
- a) pattern
 - b) safe
 - c) pump
 - d) marine
- 8.** Which word means “a process, action, or device that fixes a problem”?
- a) pattern
 - b) tropism
 - c) solution
 - d) wildlife
- 9.** Which word means “to create something that did not exist before and words and phrases are the unit that you should model for use in isolated drill or memorization”?
- a) root
 - b) invent
 - c) tropism
 - d) purpose
- 10.** Which word means “actions taken by living things”?
- a) offspring
 - b) behavior
 - c) stem
 - d) thigmotropism
- 11.** Which word means “the imitation of natural biological structures, systems, and processes”?
- a) parent
 - b) sight
 - c) blooming
 - d) biomimicry
- 12.** Which word means “the growth of a plant in response to something it detects in its environment”?
- a) tropism
 - b) pattern
 - c) naturalist
 - d) invent

Answers

Getting started: Meet the Big Question

1. **yes LITERAL—What part of the body does an owl use to fly?**
See Know the Standards 2.
2. **Ask students, What kinds of animals do you see outside?**
Birds, owls, lizards, cats, horses
3. **It belongs in its nest. (See Know the Standards 1.) NGSS Elements LITERAL—What does the owl look like?**
It is small. It is fluffy. It has big eyes. It has a beak. Its feathers are brownish gray. It has wings. It has claws.
4. **DCI LS1.A INFERENTIAL—What might this owl be doing on the ground?**
It might have fallen out of its nest.
5. **LITERAL—What does the vet tell Luzi about the owl?**
It is a baby owl. The owl cannot fly yet. It must have fallen out of its nest.
INFERENTIAL—If the doctor says the owl cannot fly yet, do you think that means owls have to learn how to fly as they get a little older? NGSS Elements
6. **She is excited to help! 7 INFERENTIAL—Why would someone want to volunteer at a wildlife rescue center?**
Because someone might like animals, want to help them, or want to learn more about caring for them

Lesson 1.2: How Do Animals Use Their Parts?

1. **Use question prompts to help stimulate student ideas about what they know, such as the following (see Know the Science 1): What is unique about birds?**
They have beaks. They have feathers. What kinds of things can some birds do?
2. **What do birds need to live?**
They need air. They need food and water. They need homes (shelter).

Lesson 1.3: How Do Plant Parts Help the Plant?

1. **Print What Makes Up a Plant?**
AP 1.3.1
2. **Distribute What Makes Up a Plant?**
AP 1.3.1

Lesson 1.4: What Things Do We Use That Are Similar to Animal and Plant Parts?

1. **internet access and the means to project images/video for whole-class viewing Activity Page What Do We Use?**
AP 1.4.1

2. **Distribute What Do We Use?**

AP 1.4.1

3. **What does an elephant trunk look like?**

Showerhead or water hose

4. **LITERAL—What is the worker doing to the baby sloth?**

Feeding it SUPPORT—Explain that in order for workers to know what they should use to feed the baby sloth, they first have to know some things about the sloth.

INFERENTIAL—What do you think someone has to know about a sloth before it is fed?

5. **LITERAL—What are some of the parts of the owl?**

Eyes, beak, wings, feathers, claws, tail INFERENTIAL—What do you think these parts help it do?

6. **A cheetah has parts that help it run fast. 10 LITERAL—What are some other ways that animals can move?**

Crawling, slithering, jumping, bouncing Add student responses to the list on the board.

Look at the first picture on page 10 together as a class. Ask students what parts on the fish help it swim. Repeat this with the pictures of the jackrabbit and the cheetah.

INFERENTIAL—Why do you think animals have to move to stay alive?

7. **A frog catches insects with its tongue. 11 INFERENTIAL—Why don't birds have a long tongue?**

Because they can reach things with their beak INFERENTIAL—Why don't frogs have long beaks?

8. **Ask students what else they wonder about sharks. (See Know the Science 3.) LITERAL—What parts do humans have that let us breathe?**

Lungs, noses, mouths SUPPORT—Ask students if they have ever used a snorkel mask when swimming in the water. Explain that a snorkel mask is a mask that covers your eyes and nose. It also has a tube that goes into your mouth and sticks above the water. You breathe through your mouth through the tube, and all the while your head can be under the water, looking around. LITERAL—What kind of human problem does a snorkel mask solve?

9. **LITERAL—What part of the plant do you see?**

Flower, leaves, stem Page 15

10. **INFERENTIAL—Why do you think a cactus's roots are close to the surface?**

It can get water more quickly. Page 16

11. **New plants grow. 18 LITERAL—Where does the bee get the pollen?**

From the flower

Lesson 2.4: Animal and Plant Senses

1. **internet access and the means to project images and video for whole-class viewing Student Book, Chapter 5 “How Do Plants Respond to the Environment?” Activity Pages What Part Would I Use?**

AP 2.4.1

2. **Place students in pairs, and distribute What Part Would I Use?**
AP 2.4.1
3. **It can see food from almost two miles away. 21 LITERAL—Which animal can see food from miles away?**
Eagle INFERENTIAL—Why do you think having good eyesight can help animals survive?
4. **Not all animals have eyes to see or ears to hear, but they have other body parts that allow them to sense their surroundings. 116 PLANT AND ANIMAL SURVIVAL LITERAL—Which animal on the page has large ears?**
The fox INFERENTIAL—Why do you think having large ears and being able to hear food moving underground are good for the fox?
5. **LITERAL—How does the drum fish hear?**
It has sacs that shake when other animals swim by. SUPPORT—Remind students that they did an experiment where they listened for vibrations with the use of yardsticks. Explain that this is like how the drum fish hears. INFERENTIAL—Do you think sensing other animals helps the drum fish? How?
6. **It can feel when the air around it moves. 23 LITERAL—Which animal can smell your sweat?**
Mosquito LITERAL—Which animal uses its tongue to smell?
7. **LESSON 2.4 | ANIMAL AND PLANT SENSES 119 LITERAL—Which animal squirts ink when it escapes from enemies?**
Octopus INFERENTIAL—Why does squirting ink help the octopus respond to danger?
8. **That is why you hear the most cricket chirping in the summer. 25 INFERENTIAL—Why do you think the iguana lays its eggs when it senses that the sand is warm enough?**
So the eggs will hatch INFERENTIAL—What do you think would happen if the scallop did not have as many tiny eyes?
9. **LITERAL—What are some things plants can respond to?**
Light, temperature, water, touch 124
10. **PLANT AND ANIMAL SURVIVAL LITERAL—What can plants NOT do?**
They can't see, hear, or smell. Page 27
11. **LITERAL—What does sunlight let plants do?**
Make food, grow, turn toward the light, and bloom if they produce flowers
12. **LITERAL—What happens when plants get too hot?**
They can wilt. LITERAL—How can plants cool themselves off?
13. **DCI LS1.D Information Processing: Wilting and blooming are responses that plants have after sensing the temperature and the sunlight. 126 PLANT AND ANIMAL SURVIVAL LITERAL—What happens when trees sense colder temperature?**
They lose their leaves. SUPPORT—Show a picture of rhododendrons in very cold weather. Explain that these are evergreen plants and the plants will roll or fold their

leaves down to protect the inner parts of the leaves from the cold. The colder the temperature, the more these leaves droop. When it reaches below freezing, the leaves look like dangling green beans! Page 29 NGSS Elements

14. How do you know?

The one on the bottom is wilting. Its leaves are drooping down. It does not look healthy and alive. Now read the page with students. SUPPORT—Guide a brief discussion about the plant parts mentioned on the page: stems and leaves. Ask students to tell what the stems do. Ask students to tell what the leaves do. Discuss why these parts are important for keeping the plant alive. Page 30 NGSS Elements

15. LITERAL—What part of the Venus flytrap senses when something touches it?

Tiny hairs INFERENTIAL—Why do plants grow up on walls? What are they trying to do?

16. INFERENTIAL—Why do plant roots grow around objects underground?

They want to get more water, and the other objects might get in their way. Page 31 NGSS Elements

17. LESSON 2.4 | ANIMAL AND PLANT SENSES 129 LITERAL—What are the children in the picture doing to study the plants?

They are drawing pictures. They are writing about the plants. INFERENTIAL—What are some other things you can do to study plants?

18. Can the trap tell the difference between rainwater and other things?

Yes How much time is needed for the hairs to be touched?

Lesson 3.1: What Are Parents and Offspring?

1. Ask students, But are they both cats?

Yes

Lesson 3.2: Plant Traits

1. Place students in pairs, and distribute Plants: Same or Different?

AP 3.2.1

2. In other words, what do both plants have that is the same?

Both plants have stems. The shapes of the leaves are the same. The shapes of the petals are the same.

3. How are plants of the same type alike and different?

Almost all plants have roots, a stem, and leaves. Those parts of plants can differ in size.

Lesson 3.4: Animals, Plants, and Their Traits

1. Ask students, How do you know when you see a plant?

It is green. It is alive. It has leaves.

2. LITERAL—What is similar about the parent and the young plant?

They are both green. They have the same type of leaves. They have a similar shape.

3. Monitor Progress LITERAL—What is similar about the parents and the young plants?

They are both green. They have the same type of leaves. They have a similar shape.
LITERAL—What is different about the parents and the young plants?

4. **Repeat the names of the types of animals shown in the slideshow. • Ask, What are some ways you can tell animals apart?**
From how they look
5. **LITERAL—Where does a cactus wren build its nest?**
Inside a cactus 168
6. **LESSON 3.4 | ANIMALS, PLANTS, AND THEIR TRAITS 169 LITERAL—What is different about all the birds on the page?**
They have different patterns. They have different colors. They are different sizes and shapes. INFERENTIAL—How do you think scientists use these traits to study birds?
7. **Which birds have wings?**
They all have wings. LITERAL—Which bird has yellow eyes?
8. **Still, they will not be identical to their parents. 172 PLANT AND ANIMAL SURVIVAL INFERENTIAL—What do you think will happen to the baby animals when they grow up?**
They will look more like their parents than they do now. INFERENTIAL—Do you think the baby animals will look exactly like their parents when they grow up?

Lesson 3.5: Lesson 3 Roundup: Groups of Plants and Animals

1. **, What traits does the young plant or animal share with its parents? How are they similar? Do you see any patterns?**
See Know the Standards 5.
2. **, What makes your plant or animal belong to that group?**
For example: What makes a dog a dog? What makes a cactus a cactus? Do all cacti have to have spines? Do all dogs have tails and ears?

Lesson 4.2: Behaviors of Parents and Offspring

1. **Have students work with a partner to share what they think that word means. (See Know the Science 1 and 2.) • Ask, What do baby animals need to survive?**
Food, water, shelter

Lesson 4.4: Lesson 4 Roundup: Offspring Survival Behaviors

1. **There are things in the ocean that are not good for the animals that live there. Science is a Way of Knowing LITERAL—What kind of visitor does Luzi's class have?**
See Know the Standards 1.
2. **Explain that when parent animals see their babies doing these things, they respond in certain ways. (See Know the Science.) • Ask, What are some ways that animal parents respond when their babies show them that they need something?**

Feeding, protecting, cleaning, teaching, comforting

3. **LITERAL—What does the puppet on the page look like?**

An owl INFERENTIAL—Why do you think the worker is feeding the baby owl with a puppet?

4. **Adult owls catch food to feed its young. 41 LITERAL—How does an adult owl feed its young?**

It goes out to get the food and brings it back to the young owl in the nest.

INFERENTIAL—Why do you think the workers do not want to teach the owl to get its food from humans?

5. **Ask, What animals do you see on the page?**

Penguins, foxes, and hummingbirds Living things can produce young. Many baby animals need help from their parents to survive. They are too young to find and catch their own food. Their parents help feed them.

6. **It returns to the nest to feed the nectar to its offspring. 42 LITERAL—What are all of the parent animals in the pictures doing?**

Feeding their young LITERAL—Do these animals all eat the same thing?

7. **A mother cheetah licks its cub to help it stay clean. 43 LITERAL—What are all of the parent animals in the pictures doing?**

Cleaning their young

8. **A group of adult elephants will surround a calf to keep it safe. 44 LITERAL—How do elephants protect their young?**

They surround the calf to keep it safe. LITERAL—What does a mother kangaroo do to keep her baby safe?

9. **LITERAL—How do alligators keep their young safe?**

They carry their babies around in their mouths. INFERENTIAL—How are all of these behaviors similar?

10. **Invite students to share all the things they can now do on their own that they could not do when they were babies. (See Know the Standards 3.) Ask, Were you able to eat on your own as a baby?**

No

11. **DCI LS1.B Can you eat on your own now?**

Yes What are some other things you can do now that you could not do when you were so little?

12. **See the Online Resources Guide for a link to the recommended video: www.coreknowledge.org/cksci-online-resources Activity Page • Ask, What are the birds doing?**

They are chirping. They are keeping their mouths wide open.

13. **LITERAL—How did the owl change?**

It is bigger. It can do more things. LITERAL—What can the owl do now that it could not do before?

14. **INFERENTIAL—When do you think the owl will be able to return to its home?**

When it can find and catch food on its own

15. **Baby monkeys begin to climb trees when they are very young. 47**

LITERAL—When do young deer stop drinking milk from their mothers?

After two months **INFERENTIAL—What do you think happens after the deer stops feeding from its mother?**

16. **LITERAL—What can baby monkeys do when they are very young?**

They can climb trees. **INFERENTIAL—Do you think knowing how to climb a tree is important for the monkey to survive? Why?**

17. **Different kinds of animals are more independent than others when they are born. 212 PLANT AND ANIMAL SURVIVAL LITERAL—Why do baby snakes slither away as soon as they are born?**

They have to find food. **LITERAL—What do all of the animal babies on this page have in common?**

18. **Then ask, What does your pet do when it is hungry?**

My dog barks. My cat meows. My dog taps me with its paw. My cat starts crying and whining. People in a wildlife center take care of animals in the hope that the animals can one day take care of themselves. Some animals that live with people will always need human care. Pets are different from wild animals. Both baby and adult pets depend on humans for food, water, and shelter. They might not survive on their own, even when they are fully grown.

19. **LESSON 4.4 | LESSON 4 ROUNDUP: OFFSPRING SURVIVAL BEHAVIORS 213 LITERAL—What is similar about all of the pets on this page?**

Their owners are doing things for them.

20. **LITERAL—What kind of habitat is this?**

This is the desert. Explain that a naturalist is someone who studies plants and animals in their natural environment.

21. **He helps ocean wildlife just like Luzi's friends help desert animals." 51 LITERAL—What kind of habitat is shown in the picture?**

This is the ocean. Explain that marine is a word that refers to the ocean. Marine animals and plants can live in oceans. **SUPPORT—Elicit a discussion about the types of parts that living things have in the ocean that help them survive there, such as fins, tails, gills, and scales. Emphasize that animals and plants have parts that help them survive in specific environments but not in other ones. For instance, the parts that help fish survive in the ocean would not help them survive in the desert.**

22. **If the turtles are hurt or sick, people take care of them in tanks at the rescue center until the turtles can survive on their own again. 52 NGSS Elements INFERENTIAL—What can you tell about the ocean by looking at these pictures?**

There are things in the ocean that are not good for the animals that live there.

23. **LITERAL—What does Josue do?**

He helps sea turtles that have been injured. LITERAL—Why is it dangerous for sea turtles to be out in the ocean?

24. **INFERENTIAL—Why do you think it is important to keep tanks clean for sea turtles and other marine animals?**

So the sea turtles have fresh/clean water to swim in and so they don't get sick

25. **LITERAL—Who invented breathing equipment for underwater use?**

Jacques Cousteau

26. **UNIT SUPPLEMENT | SCIENCE IN ACTION: MEETING AN OCEAN NATURALIST**
229 LITERAL—Who was Jacques Cousteau?

He was a French scientist and conservationist. Explain that a conservationist is a person who is concerned with saving Earth's resources and helping out the planet. Talk briefly about the types of things conservationists do, such as helping save forests from being torn down, helping save animals from being hunted or fished, and advocating for people to use more energy from the sun. INFERENTIAL—Why do you think Jacques Cousteau designed a breathing tool?

Unit quiz key

1. c 2. c 3. d 4. b 5. a 6. a 7. c 8. c 9. b 10. b 11. d 12. a