Big Idea:
Plants and animals use their external parts and certain behaviors to help them survive, grow, and meet their needs.
How do plants and animals use their external parts to survive?
Guiding Questions:
How are young plants and animals alike and different from their parents?
What types (patterns) of behavior can be observed among parents that help offspring survive?

21st Century Themes/Skills:

DCI (Disciplinary Core Ideas)	*Science and Engineering Practices*	*Cross Cutting Concepts*	*Student Learning Objectives*	*Differentiated Activities (Consider the 5 Es)*	*Resources/Technology*	*Formative Assessments*	*Benchmark Assessment*
Analyzing and Interpreting Data • Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS3-1)	Analyzing and Interpreting Data • Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS3-1)	Patterns • Similarities and differences in patterns can be used to sort and classify natural phenomena. (3-LS3-1)	Identify physical characteristics of different organisms. Describe the function of certain physical characteristics of different organisms. Compare the physical functions of different organisms. Compare the physical characteristics of different individuals of the same organism.	ENGAGE 1: Instruct students to explore the Interactive Glossary Term characteristic. As a class, read aloud the definition: "a feature of an organism, something you can observe about an organism." Explain that students will be learning about characteristics in this lesson. Display a stuffed animal that the students can recognize and that has features comparable to a real animal. Ask: How did you know what animal it was? What things do you see that told you that it was a(n) _____? What things do you see that told you that it was not a(n) _____? Identify and correct students' misconceptions based on their comments during the discussion about the stuffed animal. Have students show stuffed animals that they have brought to class. Have students identify their stuffed animals and characteristics that identify the animal. Explain that all of the things that helped them determine what the animal is help us distinguish it from other kinds of animals. Tell students that they are going to view a video that shows how animals can look similar and different. Show students the video segment Warming Up (1:46). Ask students to pay close attention to the many different animals in the video. Play the video a second time, encouraging students to mimic the animals' movements by following the cartoon in the corner of the screen. Allow students to share similarities and differences between the various animals that they viewed in the video. Ask these questions to prompt the discussion: Why do orangutans have long arms? Why do jellyfish have long tentacles? What are some differences between the way an orangutan and a jellyfish move? Compare them. How do an orangutan and a jellyfish differ in looks? Why does a praying mantis have long legs? How is a praying mantis different from a jellyfish? Do squirrels and bears climb differently? What is the same about the way squirrels and bears climb? Ask students about other animals (including pets) that they know. Ask them to describe what these animals look like. Tell the students that over the next few days they are going to talk about the ways that different living things look. Ask students: What questions do you have about why animals and plants look the way they do? What would you like to learn? Write a list of student- and teacher-generated questions on a board or chart to reference throughout the session. Include the following Lesson Questions. What do different organisms look like? Why do different organisms have different physical characteristics? What is the function of specific physical characteristics of an organism (scales, feathers, plant roots, etc.)? What characteristics are similar and different among different organisms? Tell students that they will look for answers to these questions as they complete the activities over the next few days.	*Unit 2 Resources*	Assign students the Constructed Response and Selected Response assessments for physical characteristics. You may also wish to assign the online concept assessment, located in the Evaluate section of the Core Interactive Text, and use the results in the student reports to guide you in assigning any remediation to students.	

				EXPLORE 1: Present students with the Lesson Questions and have them complete the first section of the Scientific Explanation Student Sheet using these questions. Students may type their responses directly into the digital resource, or they may write or draw their responses on a printed copy of the resource. The digital resource includes a link to a PDF version of the Student Sheet. Guide students to think about what they already know about each question and record their prior knowledge in the "My Prior Knowledge" section. Encourage students to think about and record how they know what they do (evidence and reasoning). Introduce the "Evidence I Found" section, explaining to students that they will fill this in as they go through the rest of the lesson. Have students begin the Evidence section with information gathered during Engage. **EXPLORE 2:** Review with students what they learned in the previous session. Remind students that living things, or organisms, all have features that we can observe. Point out that students have already encountered one important vocabulary word (characteristic). Write characteristic on the board, and then instruct students to explore the Interactive Glossary term organism (writing it on the board as well). Have students read the section of Explore in the Core Interactive Text titled What is a Physical Characteristic? What Do Different Organisms Look Like? Discuss what students have learned so far, emphasizing the following points: An organism is a living thing. Plants and animals are organisms, including cells, grass, worms, ducks, elephants, and humans. A physical characteristic is a feature that we can observe and see. Characteristics can range from the height, weight, and color of something to the way it moves or sounds. Tell students that they are going to view a video in which a boy named Sid shows us his bird house. Before viewing the video, ask what kinds of birds live in your community. Show pictures of birds (Steller's jay, American crow, hummingbird, cardinal, and winter wren). Show the video Birds (1:50). Ask students the following questions: What makes a bird different from other animals? What birds did you see in the video? (parrots, blue jays, hummingbirds, emus, ostriches, and others) What were the physical characteristics of these different birds? Explain that many kinds of birds share several physical characteristics. Elicit from students the names of birds that they know. Then tell them they are going to find out what physical characteristics that all birds share. Arrange students in pairs and tell them that each pair is going to brainstorm a list of all the characteristics that they can think of that birds share. Refer to the list of birds they came up with to help them visualize the characteristics. Give students time to talk in pairs and construct a list of characteristics. Then, regroup and have pairs share their lists. To reinforce what students have learned, instruct them to read the section of Explore in the Core Interactive Text titled What Can We Learn from Characteristics? Why Do Different Organisms Have Different Physical Characteristics? **EXPLORE 3:** Tell students that physical characteristics not only help us determine how animals are alike, but they also tell us something about what an animal does, how it moves, and how it eats. Emphasize that organisms must perform these behaviors to survive. Refer to the list of bird characteristics generated by the students. Discuss what the physical characteristics might tell us about the animals. For example, possible questions could include: Why do birds have beaks? What do they use beaks for? Why do some birds have beaks shaped like a spoon while others have beaks shaped like a spear? (Some birds with a spoon bill scoop up fish from the water, while other birds with long, narrow beaks sip nectar from flowers). Tell students that they are going to view a video about animals that can balance. Ask them to identify the animals and the characteristics mentioned in the video. Show the video Balancing (3:38). After the video, discuss the physical characteristics shown in the video (skinny legs, long necks in flamingos, strong arms and legs in raccoons, and steady legs in a cat). Discuss how these characteristics help these animals balance. Then, ask students to name other animals that they know have good balance. Ask whether these animals share characteristics with those in the video. As the students discuss other mammals, be sure to point out other prominent characteristics. For example, if a student mentions that humans have teeth, make sure to discuss that humans have hands and fingers that are used to pick up and hold things. Keep a list of characteristics on the board as they are discussed. To reinforce what students have learned, have them read the sections of Explore in the Core Interactive Text titled What is the Function of Specific Physical Characteristics of an Organism? and What Characteristics are Similar and Different Among Different Organisms? Have students complete the Hands-On Activity: Making Models.	Video Segment: Balancing		

				EXPLAIN 1: Elicit from the class the names of two animals. As a class, create a Venn diagram by comparing and contrasting the physical features of these animals. Create slips of paper with the names of different animals. These can be created in advance, or the names of animals can be elicited from the students. Have each student draw a slip with an animal name on it. Pair up the students and have them create a Venn diagram using the animals that they drew. Students may draw diagrams in their notes, or they may use the Venn diagram available in the Discovery Education Techbook. Invite volunteers to share their diagrams. Display the diagrams on the wall. As a class, revisit the lists of animals from the Hands-On Activity: Animal Groups. As necessary, regroup the animals according to any new information that students have learned.	Video Segment: Birds		
				EXPLORE 3: Remind students of the Lesson Questions. Explain that in this Explore, students will continue to compare the physical characteristics of different organisms, including both plants and animals. Review the concepts of warm-blooded (which is an Interactive Glossary term) and cold-blooded. Additionally, have students explore the Interactive Glossary terms reptile and amphibian. Emphasize the following points to the class: A cold-blooded organism is an animal whose body temperature changes with the surroundings. Cold-blooded organisms do not make their own heat. A reptile is a cold-blooded animal with scales that breathes air. An amphibian is a cold-blooded animal that usually lives part of its life in the water and the other part of its life on land, usually as an adult. Give examples for each definition and elicit other animals that fit these categories. Then, show the video segment What are Amphibians? Before showing the video, explain that it describes the characteristics of amphibians. As they view the video, students should look for characteristics that amphibians and reptiles have that are different from characteristics of warm-blooded animals such as birds and mammals. After the video, debrief and discuss the differences that students saw between cold-blooded animals and warm-blooded animals (naked skin, scales, hair, etc.). Add these characteristics to the list on the board from the previous Explore. Ask students what characteristics reptiles and amphibians have that are similar to characteristics of other animals (vertebrates, have legs, feet, etc.). Tell students they are going to read a passage about frogs and their characteristics. Ask students to pay attention to what frogs look like and how they get their food. Read the passage Frog Characteristics with the students. After reading, ask students to point out the words that tell about the frog's characteristics (webbed feet, long tongue, big eyes). Then, ask students what functions these characteristics perform for the frog (swimming, catching insects, seeing insects). Use this discussion as a transition to talk about the characteristics of insects and other invertebrate animals such as flies, worms, etc. Write the word invertebrate on the board, and have students explore the Interactive Glossary term. Tell students that an invertebrate animal does not have a backbone; some invertebrates are insects, worms, snails, jellyfish, and clams. Ask students if they know other examples of invertebrates. If not, provide them with examples (starfish, octopus, lobster, etc.). Discuss some of the characteristics that these animals have (wings, a shell, tentacles, antennae) and do not have (feathers, scales, hands, etc.). Elicit from students the names of several animals and write them on the board, Make sure that the list covers a broad range of types of animals, including reptiles, amphibians, mammals, insects, vertebrates, and invertebrates. Add animals to the list as needed. Make sure there are enough animals listed for each student pair to have five different animals. Divide students into pairs and distribute copies of the Comparison Chart; if more categories are necessary, prepare copies of a similar chart for sorting and classifying animals by physical characteristics (for example, wings, scales, beaks, vertebrate, invertebrate, warm-blooded, hair/fur, etc.). Assign or have each pair choose five different animals to fill in on their chart. Make sure that there are no repeats of animals among the pairs. Have students complete the chart with the lists they updated earlier and help them revise it as necessary. Tell students that animals are not the only organisms that have physical characteristics that help distinguish them from other organisms. Explain that plants also have physical characteristics. Say: Plants do not have hair, wings, or tentacles like animals do, but they have characteristics that help to tell them apart from other organisms. Their characteristics also have functions. Show students an actual plant or a picture of a plant (the Discovery Education Techbook contains many options). Ask students to describe what it looks like. Explain that students are describing the characteristics of the plant. Tell students that they are going to read a passage about how plants live. Tell them to pay attention to how plants get their food and water. Read the passage Plant Characteristics with the students. After reading, have students identify the characteristics of a plant (e.g., leaves, stem, and	Video Segment: Birds of the Ocean		

LS1.B: Growth and Development of Organisms • Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)	Obtaining, Evaluating, and Communicating Information • Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2)	Patterns • Patterns in the natural and human desig world can be observed, used to describe phenomena, and used as evidence. (1-LS1-		**EXPLAIN:** Have students use the evidence that they collected in the Explore session to complete the Scientific Explanation Student Sheet for the four Lesson Questions. Students may type their responses directly into the digital resource, or they may write or draw their responses on a printed copy of the resource. The digital resource includes a link to a PDF version of the Student Sheet. Have groups of two to four students share their explanations with each other. Students should then revise or enhance their explanations based on group discussion.	Video Segment: Many Kinds of Amphibians		
				ELABORATE 1: Ask the class to think of ways that humans can use ideas from animals to help design products. Discuss some examples. If students are unable to think of any, give them an example such as the way that the protective helmets used in bicycling resemble shells. Have students complete Hands-On Activity: Design Clothing and Hands-On Activity: Safe Solutions. Bring students together to discuss their work. Discuss some of the ideas that students developed. **ELABORATE 2:** To help students apply their understanding of physical characteristics, you may wish to have them complete the following project: Make a list of different functions that various characteristics fulfill (e.g., swimming, getting food, protection, eating, seeing, keeping warm). Have students come up with different characteristics that help different organisms with these functions. For example, for swimming, they might come up with webbed feet, arms, legs, and fins. Tell students that they are going to create an imaginary "superanimal" that can combine different characteristics from different organisms. Have students create a poster or, using Board Builder, an interactive presentation of their imaginary animal, labeling the characteristics and the functions that each characteristics serve for their animal.	Video Segment: What Are Amphibians		
