

Lesson Plan

Introduction

- Lesson topic – Camouflage and Mimicry
- Length of Lesson – 50:00
- VA Standards of Learning –
3.4 The student will investigate and understand that adaptations allow animals to satisfy life needs and respond to the environment. Key concepts include:
 - a) behavioral adaptations; and
 - b) physical adaptations.
- Context – Students discover that some animals have physical adaptations that help them survive in their environments.
- Global Themes – Animals adapt to their environments in many different ways in order to ensure species survival. In fourth grade, students will build upon this lesson to include plant adaptations and broader concepts such as ecosystems and human influence upon them.

Content Objectives

Students will:

- Identify physical adaptations in animals
- Define camouflage and mimicry

Assessment Aligned to Objectives

Formative Assessment

The students will:

- Find animals in their environment hidden by camouflage
- Conclude that animals use camouflage and mimicry for survival
- Compare and contrast camouflage and mimicry

The teacher will look and listen for:

- Correct definition of camouflage and mimicry
- Student conclusions that animals' appearances can hide them in their environments

Summative Assessment

The students will:

- Create a habitat and method of mimicry for a given animal
- Answer teacher questions and give examples of animals that use camouflage and mimicry

The teacher will look and listen for:

- Student drawings that accurately reflect the concept of camouflage and mimicry
- Ask students to answer questions and give examples of animals that use camouflage and mimicry

Materials/Technology and Advanced Preparation

- Prepare Prezi presentation – start background music
- Paper, colored pencils, crayons, markers, etc.
- Student Science Journals
- Animal Adaptations foldable

Teaching and Learning Sequence

TIME	TEACHER ACTIONS	STUDENT ACTIONS
<i>Introduction/Anticipatory Set</i>		
5:00	<ul style="list-style-type: none"> • Play background music (“Sound of the Wild”) on Prezi presentation (Prezi should be set and ready to play). • Ask students to sit in front of the whiteboard/screen with their science journals and pencil and ask if they can tell me what is making the sounds they hear. (Tell them they must listen quietly for 60 seconds before raising their hands.) • Remind students that we have been working on animal adaptations and ask if they can remember what they are. (Call on several different students including those that do not volunteer.) • Ask students to bring out their science journals – Animal Adaptation graphic organizer – if they need help remembering what we have learned so far. • Show students that there are two empty folds in the organizer and that we will fill those in together, but first we’re going to watch a presentation. • Ask students to guess what we might learn today. 	<ul style="list-style-type: none"> • Listen to animal sounds as they move from one task to the Science lesson. • Raise hands to answer teacher questions. • Have science journals ready (Adaptations foldable).
<i>Lesson Development</i>		
30:00	<ul style="list-style-type: none"> • Show students first Prezi slide and ask if they can find the animal hidden in it. (Ask students to raise their hands, then call them to the screen to point out the hidden animal [<i>deer</i>]; especially the kinesthetic learners.) • Repeat with slides 2 and 3. • Ask them if it was easy to find the animals. Why? 	<ul style="list-style-type: none"> • Raise hands if they can identify the hidden animals and move to the screen to show to others. • Answer questions.

<p>What made it difficult to find the animals?</p> <ul style="list-style-type: none"> • Ask students what we know about how animals adapt (we have learned that they adapt their behavior). • Tell them there is another way animals can adapt to their environments and that is by using physical adaptations, specifically camouflage. (Slides 4-7). • Ask students to bring out their Adaptations Foldable and write “Camouflage” in one of the two remaining folds; then have them write the definition of camouflage on the other side. (Slides 8-9). • Because slide 9 has the terms predator and prey; ask students if they can define those words. • Show slide 11 (tiger) and ask students if they can find the hidden animal. • Ask them if the tiger is a predator or prey and why. Ask how the tiger is camouflaged and why would that be important to its survival. • Show slide 12 (zebra). Ask students if a zebra is a predator or prey. • Ask students if the zebra is camouflaged; ask why or why not? • Tell students that we will watch a video of a herd of zebras. Point out that they should try to follow the same zebra. • Show 1:30 of video (sound off). • Ask if they thought zebras used camouflage ... Was it hard to pick just one zebra? Imagine being a color-blind predator and trying to focus on just one zebra to hunt. • Tell students that we will be looking at several more pictures of camouflaged animals and that when they find the animal, they should raise their hands. • Show slides 16-22 and ask if students can find the camouflaged animal and <i>why that particular animal needs camouflage for survival</i>. (Call on different 	<ul style="list-style-type: none"> • Fill out Adaptions foldable. • Raise hands to answer questions. • Find and show tiger. Answer questions. • Answer questions. • Watch video. • Identify hidden animals; answer questions.
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	<p>students to come up to the screen and point to the animal.)</p> <ul style="list-style-type: none"> • Show slide 23 (camouflaged cuttlefish) and ask students if they can find the animal. (probably not) • Show slide 24 (apparent cuttlefish) and tell students what it is and what it does. • Show cuttlefish video (2:19). • Ask students why a cuttlefish would need camouflage. • Show “mimicry” slide (slide 27) and ask if anyone can tell me what mimicry is. • Tell students the definition of mimicry; show the next slide (28) and ask students to fill out their foldables. • Show slide 29 (coral snake); then slide 30 (king snake). Ask students if the two snakes are the same kind of snake. • Show slide 31 (both snakes together) and ask if they can see the difference between the two. Point out that the coral snake is poisonous and the king snake is not. • Ask why the king snake looks like the coral snake (the king snake mimics the coral snake so that predators will avoid it). • Show slides 32, 33 and ask if anyone can see the difference between the two butterflies. (I can't.) • Show slide 34 with both together and explain that one tastes good (viceroy) and one does not (monarch); why would that be such a good thing? • Show Animal Imposters video (slide 35). (2:00) • Show slides 37 and 38 (mimicry) and ask if anyone can find the animals; ask them to come up to the screen to show them to the rest of the class. • Ask how these two animals use mimicry and why. • Show last two slides and point out that there are thousands of species that use physical adaptations to survive; if they would like to know more, here are 	<ul style="list-style-type: none"> • Watch video. • Answer questions. • Answer questions. • Complete foldables with definition of mimicry. • Answer questions. • Answer questions. • Answer questions. • Watch video. • Find animals. • Answer questions.
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	<p>a few ideas ...</p> <ul style="list-style-type: none"> • Hand out photos of animals to pairs of students. • Tell them that they will create a habitat in which the animal can use physical adaptations for survival. • Ask students to return to their desks to begin the activity. 	<ul style="list-style-type: none"> • Students return to their desks to create habitats.
<i>Closure</i>		
10:00	<ul style="list-style-type: none"> • After the students have completed their habitats, bring them back to the floor and ask the pairs to share their animals and habitats with their classmates. • Ask the pairs to describe if their animal is predator or prey (or both) and how their physical attributes help them survive in the habitat created. • Ask students to turn to an elbow partner and explain the difference between camouflage and mimicry. • Ask pairs to share their discussions with the rest of the class. • Tell students to open their agendas to write down their homework for tonight. • Homework for tonight will be to find an animal, insect or <i>person</i> around the house or neighborhood that uses camouflage and mimicry for survival. Explain how and why that animal (insect or person) uses the physical adaptation for survival. • Ask students to return to their desks for our next lesson. 	<ul style="list-style-type: none"> • Students return to floor in front of screen. • Pairs show the photo of their animal, then describe how their animal uses camouflage or mimicry for survival. • Compare and contrast camouflage and mimicry. • Share with classmates. • Students write down homework assignment. • Students return to their desks.

Homework

- Their homework will be to find an animal, insect (or person) at/around their house and write down how it uses camouflage or mimicry to survive.

Lesson Organizer**Prior Knowledge and NEW Instructional Content****Prior knowledge:**

- The students will be able to define: adaptation, behavioral adaptation, hibernation, migration, dormancy, instinct, learned behavior from the previous lesson (3.4a)
- Terms: predator, prey, habitat

Vocabulary:

- Physical adaptations: animals possess certain traits in appearance which help them survive in their environments
- Camouflage: the means by which animals escape the notice of predators, usually because of a resemblance to their surroundings using coloration or outer coverage patterns.
- Mimicry: a species has features similar to another species. Either one or both are protected when a third species cannot tell them apart.

New Content:

- give examples of methods that animals use to gather and store food, find shelter, defend themselves, and rear young.
- describe and explain the terms camouflage, mimicry, hibernation, migration, dormancy, instinct, and learned behavior.
- explain how an animal's behavioral adaptations help it live in its specific habitat.
- distinguish between physical and behavioral adaptations of animals.
- compare the physical characteristics of animals, and explain how the animals are adapted to a certain environment.
- compare and contrast instinct and learned behavior.
- create (model) a camouflage pattern for an animal living in a specific dry-land or water-related environment. (Relates to 3.6.)
- design and construct a model of a habitat for an animal with a specific adaptation.

Instructional Modifications to ASSIST Students	Main Events of Instruction	Instructional Modifications to CHALLENGE Students
<ul style="list-style-type: none"> • Group with more advanced peers • Allow students to move to the screen (get up off the floor) to point out camouflaged animals • Refer them to their Animal Adaptations graphic organizers • Partner with students needing a challenge to work together on animal research project (see Modification to Challenge Students) 	<ul style="list-style-type: none"> • Watch and interact with Prezi presentation • Create an animal and hide it in an environment with camouflage (and mimicry); explain why it needs/uses camouflage/mimicry 	<ul style="list-style-type: none"> • Ask them to research (books or Internet) another animal/insect that uses camouflage or mimicry and share with the class • Ask them to consider how humans use camouflage and push for deeper answers than just “hunting” (soldiers, tanks, tents, ships, etc.)