

Survival: Traits and Advantages

Animal Adaptations

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Published by *Oklahoma Young Scholars/Javits*

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Grade Level	3rd Grade	**Time Frame**	120 Minutes
Subject	Science	**Duration**	3 Periods

Essential Question

How do variations in characteristics/traits among individuals of the same species provide advantages?

Summary

This is the second lesson in a series called, "Survival." In an effort to understand animal characteristics and adaptations, this lesson invites students to make observations about a variety of animals, participate in a modified four corners activity, and create a class Anchor Chart. Learning is extended by students' creating an illustration about human characteristics and adaptations for survival. The lesson is summarized when students write a reflection over the lesson content.

Snapshot

Engage

Using the I Notice, I Wonder strategy, students make observations about two types of cows.

Explore

Students reason and explain what characteristics help animals survive in their environment.

Explain

Students formulate academic vocabulary and create a class Anchor Chart.

Extend

Students illustrate chosen characteristics/traits they would like to have to survive more easily.

Evaluate

Students reflect on their learning and how their understanding of survival adaptations has changed.

Standards

Oklahoma Academic Standards (3rd Grade)

3.LS3.2.2: The environment also affects the traits that an organism develops.
3.LS4.2: Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving and reproducing.
3.LS4.2.1: Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.

Attachments

- I Notice I Wonder - Survival Traits.docx
- I Notice I Wonder - Survival Traits.pdf
- Imaginary Traits - Survival Traits.docx
- Imaginary Traits - Survival Traits.pdf
- Lesson Slides - Survival Traits.pptx
- T-Chart handout-Survival Traits.docx
- T-Chart handout-Survival Traits.pdf
- Teacher Sample-T-Chart handout-Survival Traits.docx
- Teacher Sample-T-Chart handout-Survival Traits.pdf
- What, So What, What Now - Survival Traits.docx
- What, So What, What Now - Survival Traits.pdf

Materials

- Lesson Slides (attached)
- I Notice, I Wonder Survival Traits handout (one per student; attached)
- T-Chart handout (one per student; attached)
- Teacher Sample-T-Chart handout (optional)
- Imaginary Human Traits handout (one per student; attached)
- What, So What, What Now? handout (one per student; attached)
- Large chart paper
- Crayons or color pencils

15 minutes

Engage

Lesson Preparation

Prior to class, using the T-Chart strategy, create a large T-chart using big paper or on the whiteboard. Label the first column of the T-chart "Characteristics/Traits" and label the second column "Advantages."

Use the attached **Lesson Slides** to guide the lesson. Pass out the attached **I Notice, I Wonder Survival Traits** handout or have students draw a T-Chart on notebook paper with the headings *I Notice* and *I Wonder*. Introduce students to the I Notice, I Wonder strategy. Explain that students will record what they observe on the left side and questions they have on the right side. Display **slide 3** and tell students to examine the two images. Tell students to list at least two things they notice and two things they wonder about the photos. Guide students by prompting them with questions such as: *What do you notice about their coats? What do you notice about the surroundings? What about their ears, head, feet, and coat?*

Possible Student Responses

- I notice the cows are different colors. I notice one cow has horns and the other doesn't. I notice the brown cows are fluffier looking than the white cows.
- I wonder if these cattle live in the same area? Since the one type of cattle is very hairy, I wonder if that makes him hot? Does the white hair cow stay cooler due to the light hair color?

Show **slides 4** and **5**. Share the essential question and lesson objective with students. Using the cattle pictures and student observations, help students to define the words **characteristics** and **advantages.**

Explain that "when we say the cow in the first photo has long hair, we are talking about a characteristic or traits of the cow. The color of your eyes is one of your traits. Name some of the characteristics of cows that we have on our class T-Chart."

Ask students to share the characteristics of the cows that they have noticed from the images. Write those characteristics on the left side of the class T-Chart that is labeled "Characteristics/Traits." Next, explain that advantages are the things that help animals survive in their environment. Ask students to share how the characteristics listed for the cows could help cows survive in their environment and add that to the right side of the T-Chart labeled "Advantages." Leave the class T-Chart displayed as it will be added to throughout the lesson.

20 minutes

Explore

Teacher's Note

This activity is a variation on the Four Corners strategy. Designate a number (1-4) for each corner of the room. As students look at animals in slides 7-9, have them identify which animals they believe are most likely to survive. Ask them to determine why they chose a particular slide number and to be prepared to explain their choice.

Display **slide 6**.

- Designate each corner of the classroom as One, Two, Three, or Four.
- Explain to students they will be shown three slides. Each slide has four examples of a designated animal.
- Explain that after looking at the animals, they should choose which animal is most likely to survive their environment.
- Students should move to the corner of the room that corresponds to the animal example.

Show **slide 7**. Ask students to look at the four different dog photographs and determine which of the four dogs is most likely to survive a cold environment. Ask them to move to the corresponding corner. Once students have selected their corner, have them talk about what characteristics are needed to survive cold weather and why. Ask students to think and discuss what advantages the individual dogs have to survive cold weather. Have a representative from each group share the group's thoughts.

Add the characteristics students identify to the class T-Chart in the left-hand column. Add the advantages to the right-hand column.

Repeat this process with **slides 8** and **9**.

40 minutes

Explain

Lesson Preparation

Prior to class, begin an Anchor Chart that will be added to during the lesson. Title the Anchor Chart **Animal Adaptations for Survival**. On the Anchor Chart, write the definition for *classes* (*types of animals sorted into categories depending on their characteristics.)* After the definition of *classes*, leave space to define the following words: *species*, *variation*, then list the six animal types vertically: *invertebrates*, *mammals*, *birds*, *amphibians*, *reptiles*, and *fish*. The Anchor Chart will be completed as a class during the lesson.

Using the T-Chart information, help students define the words *species* and *variations.* Do this by going back to the two pictures of the cows and say, "These cows look the same but have many different characteristics. The scientific word for a particular group of animals or plants that belong together, share some of the same characteristics, and can produce young animals or plants is called a *species*." Add the word *species* to the Anchor Chart. Ask students to determine a definition for *species* in their own words. Introduce the word *variations*. You can do this by going back to the class T-Chart and pointing out that there is a variety of characteristics listed in the first column and that animals within the same species can have a variety of characteristics, such as a variety of fur, hair, eyes, ears, fins, feathers and so on.

Explain that a species is part of a *class* (group) of animals. Scientists have identified six main groups/classes of animals:

- Amphibians
- Birds
- Fish
- Invertebrates
- Mammals
- Reptiles

Move to **slide 10** and display the National Geographic Kids webpage Notice the six *classes* of animals listed horizontally across the top when you click on the tab for animals. Allow for class time for individuals or pairs of students to explore the different classes of animals. You may want to structure this more by assigning certain groups of students to explore a class of animals. They are not recording anything at this time, just having fun and learning things about the animals.

Lesson Pacing

Consider stopping at this point until the next class period.

Review the terms *characteristics* and *advantages* verbally with students. Tell students to prepare a T-Chart in their notebook with columns labeled *characteristics* and *advantages* or use the attached **T-Chart** handout.

Move to **slide 11** and show the class the video clip about animal adaptations. The video focuses on the camel, giraffe and penguin and how their different body structures and behaviors help them survive in specific habitats. During the video, stop after each animal to give students time to record on their T-Chart the animal's characteristics and the correlating advantages that help the animal survive in its habitat.

Embedded video
https://youtube.com/watch?v=fRX2JtKFUzk

Move to **slide 12** and have students work with an Elbow Partner to compare their thoughts and talk about their T-Charts. Partners should choose one fact that really surprised them and be ready to share this idea with the class.

30 minutes

Extend

Move to **slide 13** and ask students to think about the characteristics/traits humans have that help them live in their environment. Provide time for students to think and then answer the question as a whole group by asking for a volunteer. Next, ask students to consider which animal traits they would like to have and how those traits would help them better survive in their environment.

Have students look over the T-Chart they have created that lists characteristics and advantages. Pass out the attached **Imaginary Human Traits** handout and move to **slide 14**. Provide time for students to individually create their own illustration of a human with imaginary traits for survival. When they have created their drawing, ask students to add an explanation of their imaginary trait in the second box and explain how that trait would help with survival in the third box.

15 minutes

Evaluate

Move to **slide 15.** Pass out the attached **What, So What, What Now** handout or have students complete their reflection on notebook paper. Using the "What? So What? What Now?" strategy, have students reflect on what they have learned, why it matters to them, and how this changes their thoughts about traits for survival.

Resources

- Africa Geographic. (n.d.). San Bushman Food. [Digital Image]. https://africageographic.com/wp-content/uploads/2015/04/Bushmen-interaction.jpg
- Animal Adaptations. (2010, Nov 9). Animal Adaptations: How an animal's body helps them survive in their habitat. [Video]. YouTube. https://www.youtube.com/watch?v=fRX2JtKFUzk
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- K20 Center. (n.d.). Anchor charts. Strategies. https://learn.k20center.ou.edu/strategy/58
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