
Great Traits

Overview

This lesson and related activities are designed to give students hands-on experience in comparing traits of organisms that enhance their survival and reproduction.

Grade: 7

TEKS

Scientific Processes

7.1 A, B

7.2 A, B, C, D

7.3 C

7.4 A

Science Concepts

7.10 B

Vocabulary

Trait

Dispersal

Materials

Chart paper

Highlighters

Tape

Hand lenses

Downloadable Sheets

*Turtle Cards

*Trait Comparison Chart

*Data Collection Sheet-
Beak Traits

*Data Collection Sheet-
Seed Dispersal

Pre-Eastman Classroom Activities

Before Class Begins:

1. Prepare enough sets of Turtle Cards for one set per four students.
2. Label three pieces of chart paper. One is labeled "Desert", one is labeled "Sea", and one is labeled "Pond".
3. Copy enough Trait Comparison Charts for one per student.

Lesson:

1. Write on the board: "What would life be like if your nose was upside down?"
2. Discuss answers: no place to put glasses, gravity wouldn't help keep your nose clear, you could drown when it rains, etc.
3. Distribute Turtle Cards and highlighters to groups of four. Identify and highlight traits on the cards that help each turtle to survive. Predict the environment that each turtle is best suited for.
4. Post three pieces of chart paper labeled with "Desert", "Sea", and "Pond". Students will tape their turtle cards onto the corresponding chart paper based on their environmental predictions.
5. Discuss responses. Students should justify their predictions.
6. The teacher will guide students to understand that organisms have traits that enhance their survival and reproduction.
7. Pass out a Trait Comparison Chart to each student. Students should fold their charts back so that the last column (*How Does Each Trait Enhance Survival?*) cannot be seen. They will complete this section later in the lesson.
8. As a class example, complete the first comparison together. Instruct students to complete the remaining comparisons on their own.
9. After completing the comparisons, students should unfold the last column and complete it with a partner.
10. As a class, discuss students' responses.

Great Traits

In The Field

1. Prior to leaving the school, make sure you have:
 - Clothespins
 - Spoons
 - Toothpicks
 - Popsicle sticks
 - Raisins
 - Sunflower seeds
 - Popped popcorn
 - Ziploc bags for seed collection
 - Timer
 - Beak Traits Data Collection Sheets
 - Sharpie markers
 - First Aid Kit
2. Set behavior expectations and go over safety issues with students, including the proper treatment of plants in the forest. Remind students not to touch anything without permission or put anything in their mouths.
3. In this activity students will use a variety of tools to simulate the beaks of birds. They will work in groups of four with each group member having a different type of beak. They will compare the advantages of each beak style.
4. Organize student in groups of four. Distribute one Ziploc bag per student, a clothespin, a spoon, a toothpick, and pair of popsicle sticks to each group. Each member will pick one of these tools to use as a “beak” in order to collect food. They will place collected food in their Ziploc bag.
5. Toss some raisins, sunflower seeds, and popped popcorn on the ground for each group. When the teacher says “Go”, each student will collect as much food as possible in one minute, placing it in his or her Ziploc.
6. At the end of one minute, each group will count and record their food items on the Beak Traits Data Collection Sheet, answering the questions based on their observations.
7. Discuss their observations about each trait as a class. Each group should share their responses for the Data Collection Sheet.
8. Have students empty their Ziploc bags.

SEED DISPERSAL ACTIVITY

1. Student will use their Ziplocs from the previous activity to collect seeds. Encourage them to find as many types of seeds as possible. In addition to seeds in the forest area, students should carefully look for seeds among the grasses and weeds.
2. Seal the bags tightly for transportation back to school. Label each bag with the student’s name. These will be used for an activity in the classroom.

Great Traits

Post-Eastman Classroom Activities

Seed Dispersal Lab Activity

Before Class Begins:

1. Copy the Seed Dispersal Data Collection Sheet for each student.

Lesson:

1. The teacher will connect the Beak Traits activity from the forest to seed dispersal. Remind students that successful plants usually have some trait that enables dispersal. Seeds that fall beneath the parent plant probably could not compete for nutrients and water and therefore would not reproduce. Discuss some possible dispersal methods, such as wind, animals, and water.
2. Distribute students' Ziploc bag of seeds from the forest and hand lenses.
3. Students will tape or glue their seeds to the Seed Dispersal Data Collection Sheet in the appropriate area. They will then complete the chart.

Name _____

SEED DISPERSAL DATA COLLECTION SHEET

SEED	TRAIT	PREDICTED METHOD OF DISPERSAL

1. In the forest, did you collect any seeds from your clothing? How did they stay attached to you?
2. Were there any seeds that could be dispersed by more than one method? Explain.
3. What human/animal activities help to disperse seeds?
4. Choose one seed and explain how the dispersal traits help the species to survive.

Name _____

BEAK TRAITS DATA COLLECTION SHEET

Record the amount of each type of food collected by each beak for your group.

	Clothespins	Spoons	Toothpicks	Popsicle Sticks
Raisins				
Sunflower seeds				
Popped Popcorn				
TOTAL				

1. Which of the four beak traits collected the most food?
2. Which of the four beak traits had the most limited use?
3. Which beak trait would be best if you lived in a sunflower patch? Why?
4. What would happen if you had a toothpick beak and lived in a sunflower patch environment?

TRAIT COMPARISON CHARTS

	WAYS ALIKE	WAYS DIFFERENT	HOW DOES THIS TRAIT ENHANCE SURVIVAL?
Human hand and Lion paw			
Flamingo legs and Kangaroo legs			
Sea lion nose and Elephant Trunk			
Giraffe tongue and Frog tongue			
Horse reproduction and Frog reproduction			

TURTLE CARDS

With a leathery covering as a shell, these turtles grow up to two meters in length and have a mass of 273-727 kilograms. They are gray to blue-black in color. Their winglike, tapering flippers may be four meters wide.

These turtles have a very thick shell and grow to 25-35 cm in length. They have flat front feet with legs that have long scales. Their hind legs and feet are round and stumpy. The mouths of these turtles have a beak-like structure they use to cut food.

These turtles are often seen sunning themselves on logs. They are green with red and yellow marking and grow 10-25 cm. They have smooth shells and hibernate in mud.

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