FOOD WEB WONDERS

PURPOSE: *Students will learn how species interact throughout a food web and discover how changes to the environment can impact the overall health of an ecosystem.*

MATERIALS

Ball of Yarn or Cord

Aquatic Organism Cards

VOCABULARY

Producer: An organism that makes its own food through photosynthesis.
Consumer: An organism that eats other organisms to gain nutrients.
Decomposer: An organism that breaks down dead or dying organic material.

SET-UP

Groups of 10 or more: Give at least two students producer cards and two students decomposer cards. One student will stand in the center and represent the Sun. The rest of your students will have consumer cards.

Groups of 10 or less: Give only one student a producer card and one student a decomposer card. One student will stand in the center and represent the Sun. The rest of your students will have consumer cards.

PRE-ACTIVITY DISCUSSION

What is a Food Chain?
Food chains describe "who eats who" in the wild. Help your group come up with an example of a food chain. Start them off with grass as the producer. See if they can complete the chain!

What is a Food Web?
In nature, there are many food chains involved in the makeup of an ecosystem. A food web consists of every food chain in an ecosystem. This is what we are going to create as a group today!

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DIRECTIONS

1. Have your group sit or stand in a circle. One student will stand in the middle as the Sun.
2. Pass out aquatic organism cards to each of the students in the circle based on the “Set-Up” directions listed on the previous page.
3. Give the “Sun” the ball of yarn. Ask the Sun to send their energy to one of the plants in the circle by holding onto the end of the yarn and passing the ball of yarn to someone with a plant card.
4. The “Plant” will take the yarn and send their energy to an herbivore by passing the yarn.
5. The herbivore will then roll the ball of yarn to another consumer, and so on.
6. Once you get to a top predator, send the ball of yarn to a decomposer. The decomposer passes the yarn back to a plant to create an overlapping food chain. Continue until everyone receives the yarn.
7. Have the students hold up their yarn to see how connected they are in this food web.

SCENARIOS

CLIMATE CHANGE

Read the following scenario to your students while they are connected in this food web:

Pollution from the burning of fossil fuels from cars, factories, and power plants has created a blanket of greenhouse gases around the Earth. Because of this, heat is trapped in the atmosphere and the temperature of Earth's surface has gotten warmer. Aquatic plants have a harder time reproducing under these conditions. "Plants, drop your yarn!” Now the herbivores have a harder time finding a food source. “Herbivores drop your yarn.” Anyone who has a loose connection on one side of them should drop the web as well.

What is the overall impact to the food web in this scenario?

LOSS OF TREES AND REMOVAL OF PLANTS FROM RIVER BANKS

Have your students pick up their yarn from the last scenario or create a new food web.

A construction company is developing some land next to the river. They are removing trees and other plants that are growing by the river. Without these plants to hold the rocks and soil in place, the riverbank will erode, filling the river with sediment. Major erosion can smother aquatic organisms and destroy their habitat. “Plants, drop your yarn!” “Anyone who feels the yarn loosen should drop their yarn now.” How will this impact the banks? How will this impact the water?

TEKS ALIGNMENT

3rd Grade: (b) 2D, 3A, 9A, 9B 4th Grade: (b) 3A, 9A, 9B 5th Grade: (b) 2C, 2D, 3A, 9A, 9B, 9C 6th Grade: (b) 3A, 12E 7th Grade: (b) 3A, 10A 8th Grade (b) 3A, 11A HS: Aquatic Science (c) 2J, 5C, 5D, 11A HS Environmental Systems: 2K, 4B, 4G, 8A, 9D

Adapted from Texas Aquatic Science Curriculum

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