



Coral Reefs

Concepts

Organisms have special characteristics or adaptations that allow them to survive in their natural habitat.

HCPS III Benchmarks

SC 4.5.3

Duration

1 hour

Source Material

MARE

PRISM

Vocabulary

Adaptations

Ichthyologist

What does it take to be a survivor?

Part One

Summary

During the next six lessons, the students will gain a better understanding of what it means to be a fish and to successfully survive in the marine environment. Through a variety of instructional strategies and hands-on activities, the students will learn about the physical adaptations of fish that allow them to better survive in the marine environment. This lesson is a simple introduction to this larger concept and allows the students the opportunity to share what they already know or think they know about fish.

Objectives

- Students will be able to state prior knowledge of fish through a cooperative, interview process

Materials

Per student:

Colored Markers

Paper

Pencils

Per class:

Chart paper or white board

Making Connections

Students may recall a time when they have wondered why some fish look different than others or why there are so many different kinds of fish. They may have observed such differences in the water while swimming or snorkeling. Some of their knowledge may come from experiences with fishing or even cooking their catch.

Teacher Prep for Activity

Hang chart paper and get out colored markers, paper, and pencils.

Background

See Introduction and supplemental materials.

Vocabulary

Adaptation - features or characteristics that help organisms survive and thrive in their habitat

Ichthyologist – a scientist (zoologist) who studies fishes



Procedure

Activity 1: Thought Swap

1. Explain to the students that during this introductory activity they will have a chance to talk with or interview their classmates during what is called a “Thought Swap”. They will need to cooperate, follow directions, and talk quietly with each of their partners.
2. Ask the students what a good listener should do [you don’t interrupt; you look directly at the person]. Tell the students that during the “Thought Swap” each person will have a chance to discuss each question or topic. In order to have a good discussion each partner should be a good listener and speak clearly when it is their turn.
3. Have the students stand shoulder to shoulder and form two parallel lines. Each person should be facing a partner. The students should be standing side by side at least six inches apart.
4. Tell the students that you will be asking a question to give them a topic to discuss with their partner. They will have one minute to talk about it.
5. Pose the first question for the students to discuss from the list which follows #7 below. Walk along the two lines to help shy or resistant partners get started and to monitor conversations. When you call time, have the students report something that their partner told them.
6. Before the next question, tell the students that the line needs to move along. Have one of the lines move one position to the left so that everyone is facing a new person; the person at the end of the line walks around to the beginning of the line. Everyone now has a new partner.
7. Repeat steps 5 and 6 until you have asked all the questions below:
 - What features or adaptations do people have to help us live successfully on land? (*Features that help organisms survive and thrive in their habitat are called adaptations; legs, arms, lungs, nose, etc*)
 - What features do fish have that help them live so successfully in water? (*fins and tail for movement, gills, scales, cold blooded*)
 - Compare fish and people. What adaptations do we all have in common? (*both have a way to breathe, move, get food, have babies, sense their surroundings and habitat, protect themselves from enemies, etc.*)
 - How are people adapted to be good predators of fish? What have people invented to help us catch fish? (*fishing poles, nets, GPS, etc.*)
 - Let’s say you were fishing one day and caught a really cool fish. If you had a chance to ask an **ichthyologist** (someone who studies fish) some questions about your fish, what questions would you ask? (*about its lifestyle, what it eats, who eats it, if it is a fast or slow swimmer, if it is good to eat*)
 - What sort of questions do you think the ichthyologist would like to ask you about the fish you caught? (*Where did you catch it? What did you use for bait to attract it? Was it hard to catch? Are you going to eat it?*)
 - Where do you think the ichthyologist got all the information he/she shared with you about the fish? What do you think you could do to find out all you could about a fish that you might catch or buy in the store? (*From books, internet, experiences, ask someone*)
8. Have the students sit at their desks with their last partner and prepare for the next activity.

Activity 2: Two on a Pencil

1. Have the students work with their last partner from Thought Swap. Distribute a sheet of blank paper and one pencil to each pair. Have them put the sheet of paper between them and ask them both to hold onto the same pencil. Tell the students that they are going to work together to draw a picture of an animal - any animal, real or imaginary - without talking to



- one another! Explain that their drawing should include all of the features or parts of the animal that they can think of that might help it survive in its habitat.
2. When the students have finished their drawing, have them discuss with each other and label all the parts they included and briefly describe in writing why it needs that part to survive in its habitat. [They might suggest some of the following: senses (eyes, ears, nose, taste, touch); fins or legs for movement (to capture food, get exercise, escape predators); teeth (for capturing and eating food or for defense); nose for breathing; scales or fur (for protection or camouflage).
 3. Have volunteers share their drawings and descriptions with the class. List the parts on chart paper or the board as they describe them. Now ask them to help you organize the parts they described into larger categories such as the following:
 - Breathing
 - Body covering
 - Senses
 - How they get around
 - What they use to eat
 4. Write these categories on chart paper or the board and tell the students that these are the features of animals that help them to survive in their habitat.

Assessments

Completion of animal drawing with labeled anatomical structures