Food Chains

Who eats whom?

We can show "who eats whom" in an ecosystem by drawing a food chain connecting predators to what they eat.

Of course, many animals have more than just one predator, and most predators eat more than just one kind of prey. When we include all members of an ecosystem that interrelate, we get a food web.

Chain Links

OBJECTIVE: Students will demonstrate the concept of a food chain by creating an art activity.

MATERIALS: green-dyed rice (or brown rice), small macaroni stars (or other small flat shapes), goldfish crackers, sandpaper sharks (use the shark shapes on page 14 of this Guide as patterns), white and blue construction paper, yellow felt circles (about 2 inches in diameter—one per student).

ACTION: First, prepare the following materials:

1. Dye rice green by putting 2 tablespoons of water and several drops of food coloring in a quart jar and adding rice until it is about 1-1/2 inches from the top of the jar. Shake until the rice is colored. Drain the excess water and spread the rice on several layers of newspaper to dry. Periodically stir it with a knife or spatula to keep it from sticking together.

2. Cut sharks out of sandpaper (one or two for each student).

Give each student one sheet of white and one sheet of blue construction paper. Have students cut or tear scallops off the edge of the long side of the blue construction paper to represent waves on top of the ocean. Then students glue their blue paper on top of their white paper.

Students glue a sandpaper shark to their paper. (Discuss how a shark's scales are tiny teeth that make a shark's skin rough, like sandpaper.)

What do sharks eat? Some sharks eat fish. Students glue goldfish crackers onto their paper to represent fish.

What do fishes eat? Some fish eat tiny floating animals called plankton. Students glue macaroni stars onto their paper to represent animal plankton. What do tiny floating animals eat? Tiny floating plants, or plant plankton. Students glue green-dyed rice onto their paper to represent plant plankton.

Where do plants get their energy? From the sun! Each student glues a bright sun (yellow felt circle) in the sky at the top of the paper.

Sharks in Danger

Over the years, people have used sharks for food, medicines, vitamins, weapons, and jewelry — even sandpaper. But today some shark populations are on the very brink of extinction. What happened?

For one thing, shark meat became a popular food. And thousands of sharks are caught by accident, snagged in nets set out to catch other kinds of fish.

Go fish—wisely.

A wise management plan for sharks includes setting catch limits and closed seasons for both commercial and recreational anglers. And wasteful practices such as shark *finning* — removing only the fins and tossing back the rest of the shark — could be prohibited.

What can we do to help?

Conservation begins with learning. Research into shark reproduction helps us understand shark population dynamics. And when we understand shark populations, we can better plan for their future.

Keeping the ocean clean and adhering to fishing regulations are more ways we can help. (Hint for teachers: visit your local bait and tackle shop or contact your state's Fish and Game Department for information on fishing regulations in your state.)

How Big Am I?

OBJECTIVE: Given various tools for measurement, students will able to measure length. They will compare various units of measurement.

MATERIALS: ***"How Big Am I?"*** funsheet (page 14 of this Guide), butcher paper, tape measure or yardstick, rulers that measure in inches, rulers that measure in centimeters, paper clips, goldfish crackers.

Discuss how people use measurements. Are the students in your class familiar with feet and inches? Meters and centimeters? Tape a strip of butcher paper going up one wall and choose an average-size student volunteer to measure. Have the student stand against the wall and mark his height with a thick marker. Use a yardstick or a tape measure to measure the student in inches and in centimeters. Emphasize that these different units of measurements are different ways to say the same thing.

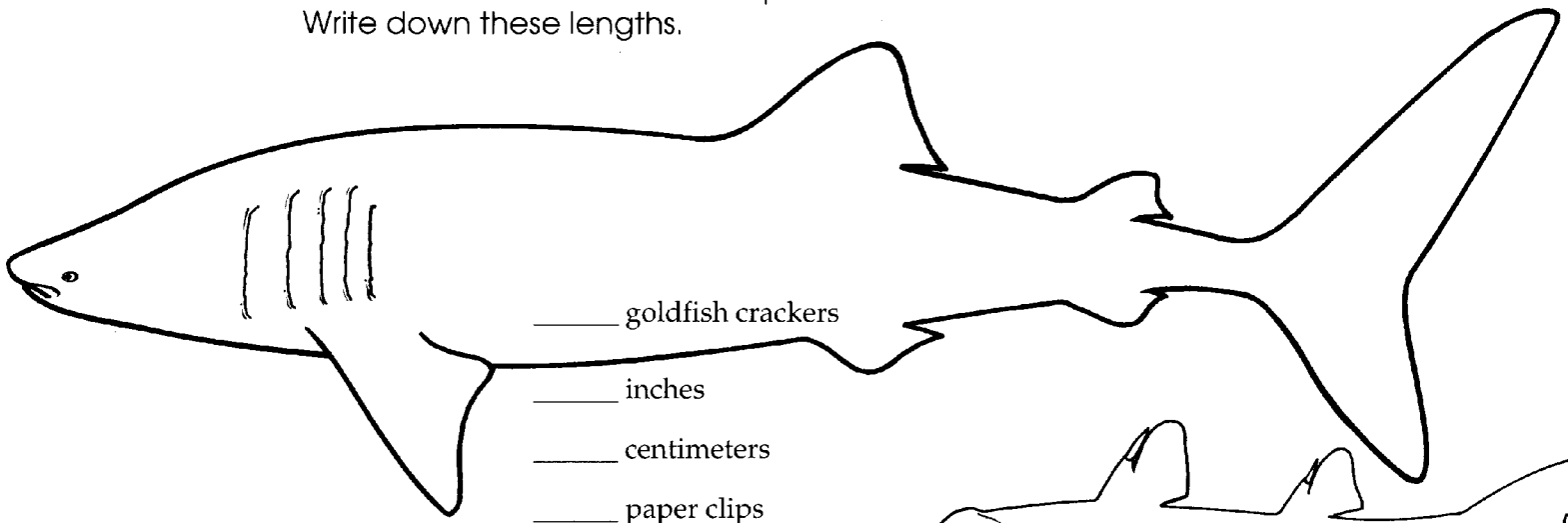
In many states, fishing is regulated. One way we can regulate fishing is to make sure that people don't take the smallest, youngest fish. In the United States, anglers measure fish in inches, usually from the tip of the "nose" to the fork in the tail. This measurement is called the *fork length*. Scientists who study fish measure them in centimeters or meters.

Distribute copies of the ***"How Big am I?"*** funsheet. Students measure each shark using paper clips, using goldfish crackers, and using inch - and centimeter - rulers. Remind the students that these different units of measure are all different ways for saying the same thing.

How Big Am I?

Name _____

Measure each shark from the tip of the "nose" to the fork in the tail.
Write down these lengths.

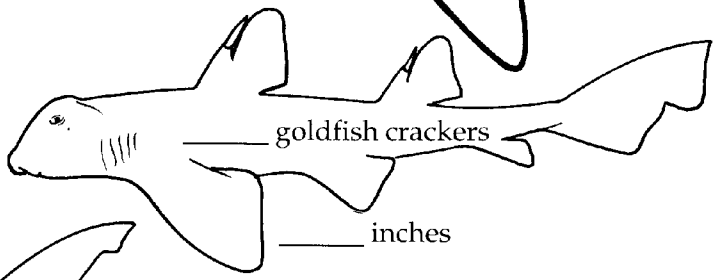


_____ goldfish crackers

_____ inches

_____ centimeters

_____ paper clips

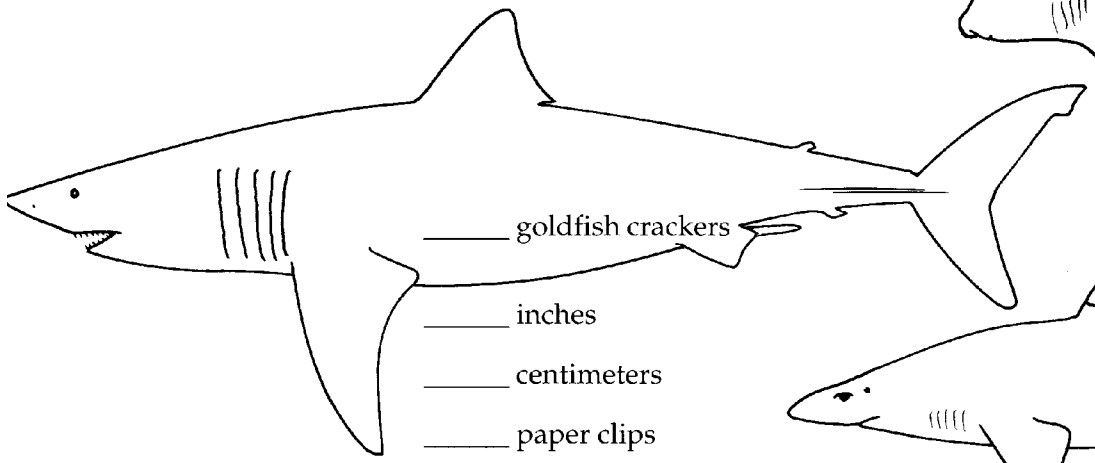


_____ goldfish crackers

_____ inches

_____ centimeters

_____ paper clips

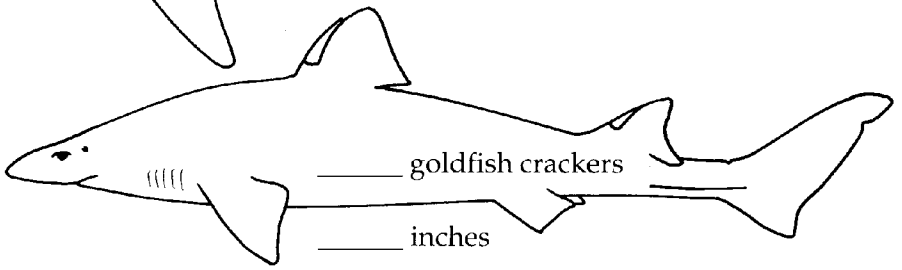


_____ goldfish crackers

_____ inches

_____ centimeters

_____ paper clips



_____ goldfish crackers

_____ inches

_____ centimeters

_____ paper clips

Some More Good Reading

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Shark! Pre/Post Assessment

Use this assessment to discover how much your students already know about sharks before you begin this unit, and later as a conclusion to your study.

- Are sharks good or bad? Why?
- What's the difference between sharks and other fishes?
- Describe or draw a shark's home.
- What do sharks eat? What eats sharks?
- Why do some fish swim in schools?
- If you were a hungry shark, how would you find food? How would you eat it?
- How do people affect sharks?
- Should we protect shark populations? If we should, how should we do it?

Want more information?

The Sea World Education Department has information booklets and curriculum materials available on a variety of marine animals and topics. Call or write to request an EDUCATIONAL MATERIALS ORDER FORM.

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