

Teachers Guide for Savage Ancient Seas

A 60 minute lesson at the State Museum

Grades K - 2

Description

Students will investigate these unusual fossil animals to discover the special features that helped them to live in an ocean environment and to explain how they met their basic needs.

Objectives

Students will:

- Compare and contrast the groups of marine animals in the exhibit and tell why they differ from dinosaurs.
- Describe the special features of turtles, mosasaurs and plesiosaurs that allowed them to live and move about in their ocean environment.
- List the body parts of these animals that allowed them to find their required food.
- Describe the basic needs of animals and how these “sea monsters” were able to meet their needs in the mid-American seaway of 70 million years ago.

Before Your Visit

If this is the first trip to the Museum for some of the students, you may want to discuss the following questions:

- What is a Museum?
- Why are we going to the State Museum?
- How does a question differ from a story? Good questions can lead to great learning; stories can erode this time.

Vocabulary

Preparing students for the lesson may require some special terms:

Bird – an animal that has feathers, breathes air with lungs and generally lays eggs.

Cephalopod – an animal without bones that has eight or more legs attached to a bag-like body. Modern animals include squid and octopus. Some fossil squid-like animals had straight or coiled shells.

Fins – a wide flat structure on a fish or other swimming animal used for swimming, steering or balancing in the water.

Fish – an animal that has scales and lives in the water, using gills to breathe.

Flipper – a wide flat limb on a seal or other aquatic animal used for swimming, steering or balancing in the water.

Gills – the feathery structure of fish and other water-living animals that absorbs oxygen needed for life from the water.

Horizontal – level from side to side. Tails on swimming mammals are horizontal.

Lungs – the internal structure of air-breathing animals that absorbs oxygen needed for life.

Marine – refers to a salt-water environment.

Reptile – an animal that has scales, breathes air with lungs and generally lays eggs.

Vertical – straight up and down. Tails on swimming reptiles and fish are vertical.

Activities

- Find pictures of fish and alligators/crocodiles. List the ways that they are different and the ways they are the same. Can the differences let the animal do things that the other cannot?
- Teeth tell us what an animal eats. Sharp, pointed teeth are for meat-eaters. Flat, chewing teeth are for plant-eaters. It is very important for plant-eaters to chew their food before they swallow it to help the stomach get all the nutrients out of the food. Look for pictures of animals in books and magazines and look at the shapes of the teeth. What kind of teeth do humans have? We have more than one shape of tooth. How do we use our front teeth? How do we use our back teeth?
- Look at the body shape of animals that live and hunt in the water. Compare sharks, barracudas, dolphins and whales. What is similar about their shapes? Even though there are big differences between fish and mammals, these ocean hunters need a stream-lined shape to move quickly through the water to catch their prey. Experiment with different shapes in a water-filled aquarium.

Books for Students

Many books on dinosaurs include other prehistoric animals, just be sure that they distinguish between dinosaurs (reptiles that lived on land and had upright leg posture) and other kinds of animals (including reptiles that flew or swam).

Burnie, David, (2001). *The Kingfisher Illustrated Dinosaur Encyclopedia*. Kingfisher, NY.

I Wonder Why (series): *Fish Grew Legs and Other Questions about Prehistoric Life*.

Jenkins, Ian, (2000). *The Big Golden Book of Dinosaurs*. A Golden Book, NY.

O'Brien, Patrick, (2001). *Megatooth*. Henry Holt and Co., NY

Books for Teachers

Taylor, Paul D., (1990). Eyewitness Books: *Fossils*. Alfred A. Knopf.

Websites

www.nhm.org/sas/home.html

www.savageancientseas.com

www.fernbank.edu/museum/savageas/seahome.html