

DESCRIPTION

Students will explore the traveling exhibit Savage Ancient Seas and discover which attributes helped these creatures thrive in this very different world, and which variations were better suited for surviving a rapidly changing Earth.

OBJECTIVES

- Identify the different types of structural adaptations seen in these sea creatures.
- Discover how these adaptations helped them survive in this savage world.
- Create a timeline which shows where these creatures fit into the prehistoric world as well as identify the event that changed the Earth's environment.
- Identify which adaptations helped sea creatures survive a rapidly changing world.

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?

VOCABULARY

- Ammonite – an extinct invertebrate animal, related to squid, but possessing a hard, coiled or straight, chambered shell. Where the inner chamber wall meets the outer wall, a complex lacy pattern is developed.
- Arthrodire – a placoderm, or armored fish, with an extra set of joints in the skull. Placoderms are generally considered extinct with the possible exception of the ratfish (also known as chimera.)
- Cephalopod – “head-foot”, the group of invertebrate animals that includes squid and octopus.
- Mosasaur – a marine lizard of the Cretaceous Period, with a large head, no visible neck and four broad flippers. Related to modern monitor lizards, the most famous of which is the Komodo Dragon.
- Nautiloid – an invertebrate animal, related to squid, possessing a coiled or straight, chambered shell. Only a single type of this animal survives today but they were very common in prehistoric times. The inner chamber wall meets the outer shell wall in a straight line.
- Plesiosaur – a marine reptile of the Cretaceous period, with a small head, very long neck, a short, pointed tail and four flippers.
- Pliosaur – a marine reptile of the Cretaceous period, with a short-neck, a large head, a short pointed tail, and four flippers.
- Xiphactinus – a large fish of the Cretaceous Period. Related to the modern Arapaima found in the Amazon River of South America. They have bony tongues.

ACTIVITIES

- Create a food web for the sea creatures found in the exhibit.
- Research which sea creature was at the top of the food chain and discover which attributes kept it there.
- Compare and contrast the creatures which focused on speed and mobility versus the creatures which focused on size and power.
- Explore the environmental effects the asteroid impact had across the world and discover which creatures were able to survive.
- Research sharks and discover which attributes allowed them to survive while other creatures did not.

BOOKS FOR STUDENTS

- Arnold, Caroline, ill.by Laurie Caple (2000). Giant Shark: Megalodon, Prehistoric Super Predator, Calrion Books, NY.
- Chandler, Fiona, Sam Toplin, and Jane Bingham, (2000). Prehistoric World, Usborne World History.
- Lindsay, William (1994). Eyewitness Books: Prehistoric Life. Dorling Kindersley.
- Pellant, Chris (1994). Fossils of the World. Thunder Bay Press, San Diego (easy-to-do science projects).
- Taylor, Paul D. (1990) Eyewitness Books: Fossils. Alfred A. Knopf.
- Troll, Ray and Matsen, Brad, (1996). Raptors, Fossils, Fins and Fangs. Tricycle Press.
- Zimmerman, Howard (2001). Beyond the Dinosaurs, Byron Preiss Visual Publications, Inc., Atheneum Books for Young Readers

BOOKS FOR TEACHERS

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

WEBSITES OF INTEREST

- <https://owlcation.com/stem/Sea-Monsters-Monsters-Of-The-Cretaceous>
- <http://www.savageancientseas.com/>
- <http://oceansofkansas.com/>
- <http://www.livescience.com/29231-cretaceous-period.html>

