

Discovery Guide

Prehistoric Life

Grades 3-5



Welcome to the University of Michigan Museum of Natural History!

These guides are intended to focus student attention and start conversations about topics in natural history.

Pre-visit tips

Please make copies of this guide for your students before coming to the museum. This will ensure that the proper number of guides are available for your group.

Bring pencils and clip boards or notebooks to write on.

Please divide your students into groups of about 5 to 10 students.

Provide the chaperones with a copy of the answer guide(s).

While Visiting

Encourage questions! If you cannot find the answer, ask the student host.

Encourage touch! Children learn best when as many senses as possible are engaged in the learning process. Please look at, listen to, and even to touch items that are not behind barriers.

Encourage discovery! Remind students that it is not a race but an adventure of discovery.

In the Classroom

The following questions and prompts are designed to promote in-classroom discussion and writing across the curriculum.

1. Have your students create a KWL chart. After a brief discussion introducing prehistoric life, have students list what they know about prehistoric life and dinosaurs. Then have students list what they want to know. After your visit, have your students list what they learned.
2. Fossils are an important part of learning about prehistoric life. In order to turn fossilized, bones and other “hard parts” of plants and animals must be exposed to no oxygen over a long period of time. Have your students predict what conditions fossils must form in. After your visit, discuss how their answers have changed.

Questions?

Please visit our website at www.ummnh.org or call us at **734.764.0480**.

Answer Guide

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1. When something is petrified, it turns to stone. When the tree was alive, the wood would have looked like ordinary wood. As the wood fossilized, minerals that contained iron oxide petrified the log. The iron oxide is why the fossilized wood appear to have streaks of different colors.

2. **D, Devonian, Ordovician and Cambrian.** Trilobites reached peak numbers in the Cambrian period, and did not become extinct until about 300 million years later. Trilobites lived in many different environments and came in many different sizes. Some lived under water, some lived on land, and some were even parasites!

3. *T. rex*'s teeth are different sizes because unlike us, ***T. rex* could grow a new tooth at any time.** The bigger teeth are older and the smaller ones just started growing.

4. Amber is **fossilized tree resin.** Resin is a thick, sticky substance produced by trees that protect it from insects and disease. Amber is important to scientists because **it sometimes contains inclusions.** Inclusions are objects that become preserved in amber, like plants, insects, or bones from frogs and lizards. These inclusions can be researched by scientists for a better understanding of the time period in which they were trapped.

5. **B, Marine reptile.** *Ichthyosaurus* was a marine reptile that lived in the earth's ancient seas before it died out in the Cretaceous period.

6. Allosaurus, with its **dagger-like teeth, sharp claws** and a **massive stride**, was a very successful predator - it was much more successful at hunting than any human could be.

7. **Gastroliths, to help digest.** Some modern-day birds, like the chicken, also store rocks in their gizzard to help them digest what they have eaten.

8. A Venn Diagram allows students to visually look at the similarities between two things. Students will write details about how Bottlenose Dolphins and *Basilosaurus* are different in the outer circles. Then they will write the similarities where the circles overlap.

Same: body and head shape, flippers, habitat
Different: tooth shape, "legs" vs flippers

9. **Sharp teeth and claws.** The sabertooth cat (*Smilodon*) is related to domestic cats. Sabertooth only hunted big prey because of the size of its fragile canines (front teeth). Unlike *T. rex*, Sabertooth could not regrow teeth when needed. If Sabertooth were to hunt small animals, they would be easier to catch but Sabertooth's front teeth would pierce through the body of its prey, which would break the teeth. When large prey like Mastodons died out, Sabertooth did not have food and so also became extinct.

10. Both Mammoths and Mastodons were herbivores. **Mammoths** lived in more flat areas, so their teeth were more fit for eating **grasses.** **Mastodons** lived in more wooded, vegetated areas, and their teeth were better suited for eating **branches, leaves, and other rougher plants.**