MUSEUM OF THE ROCKIES

touch history

Digging Dinosaurs Class Lesson Plan

Molly Ward, MOR Paleontology Educator and Technology Coordinator

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Preparation Time: 1 hour+ at least 24 hours in advance, 15 minutes or less on the class day
Time for Lesson: 1 hour and 10 minutes
Number of students: 15 or fewer

Goals

- Students understand the process of paleontology.
- Students appreciate the importance of science in the process of paleontology.

Objectives

The student will:

- Identify major steps and relative order of major steps in the process of paleontology.
- Identify the role of fossil preparators and fossil preparation in the process of paleontology.
- Use tools and proper techniques for fossil preparation.

Class Outline

Introduction—10 minutes
Process of Paleontology Activity—15 minutes
Process of Paleontology/Fossil Preparation discussion (possible Fossil Viewing Lab and/or Mesozoic Media Center visit)—15 minutes
Digging Dinosaurs Activity—30 minutes

Introduction

In this class students learn about the steps in the process of paleontology (the process a fossil goes through from discovery in the field to display in a museum). They will work as a group to fill in the blanks on a large diagram of the process. They also have a chance to try out part of the process by removing a real dinosaur bone fossil from manmade matrix. They will use some of the same tools that paleontologists use and learn proper techniques and why they are used. Finally, students should come away understanding what part of the process this represents.

***Process of Paleontology* Activity—15 minutes**

This activity gets students involved thinking about all of the steps a fossil goes through from when it is discovered to when it goes on display in a museum. It focuses mainly on the important steps, how and why they are done (their importance to science), and who does

them. In a more subtle way, the activity explains the process of science in paleontology, how we know what we know about dinosaurs, and the importance of proper collection to science.

Process of Paleontology/Fossil Preparation discussion (possible Fossil Viewing Lab and/or Mesozoic Media Center visit) —15 minutes

A short discussion following *The Paleontological Process* activity is necessary to form a connection in students' minds about how the first activity of the class relates to the second. In the first activity we studied all the major steps in the entire process of paleontology. In the second, we will get to try one of those steps. The *Digging Dinosaurs* activity focuses not on the part of the process where the fossil is dug out of the ground in the field (excavation), but the part when the jacketed fossil is brought back to the museum and the extra matrix (rock and dirt) is carefully cleaned off of the fossil to prepare it for the next step.

In the *Digging Dinosaurs* activity, the plastic tub represents the field jacket, the sand/plaster mixture represents the rock and dirt, and the fossil bone fragment the fossil.

Kids use dental picks and toothbrushes, just like real fossil preparators, to carefully remove the matrix from around the fossil. They need to be briefed on how to use this equipment. The picks are for scraping (using the side of the sharp part) not stabbing. Why? Kids know they could hurt themselves or the fossil. Also, make sure the erasers stay on the other sharp end of the tool that is near the kids' face. Toothbrushes are for sweeping away dust—not scrubbing or getting the fossil wet. Why? Scrubbing could damage the fossil and get dust in eyes. Water could help dissolve the matrix, but could also damage the fossil.

An added twist (partially because kids like to prepare and need more to do) is the addition of a rock and a toy to the jacket. The rock can also be used to help kids differentiate between the fossil and a rock.

Because the fossils we can use are small chunks and are pretty boring looking, it is important to explain that the fossil the kids will be seeking is a small chunk and is realistic since paleontologists often do not find entire complete bones or skeletons—they are broken up over time and through geological processes.

If you are teaching this class at MOR and at an appropriate time (or you set it up ahead of time) you could take the group up to visit the Viewing Lab and see the process they are about to do in action. There is also great video footage and information about preparation and the process of paleontology in the Mesozoic Media Center. If not, use the associated PowerPoint slides to show real fossil preparators at work.

***Digging Dinosaurs* Activity—30 minutes**

The *Digging Dinosaurs* activity is a hands-on experience for kids to try fossil preparation themselves. Keys to the success of this activity include a thorough introduction (above) explaining what part of the process this represents (fossil preparation), what they will find

(chunks of fossils, not whole bones) and why, and technique (gentle so not to hurt fossils or themselves) and lots of adult supervision and feedback.