

# DINOSAURS AND FOSSILS

## SCIENCE DOCENT SECOND GRADE

### **OBJECTIVE:**

Develop an appreciation for animal life and understand that all life is interdependent. Hands-on activities will include dinosaurs, changing environments, fossils, paleontologists, layers of the earth and dinosaur size.

### **INTRODUCTION (10 MINUTES):**

- Why do you think you are studying dinosaurs and layers of the earth?

*Learning about ecosystems and how living things lived and how the earth has changed helps us learn about our own ecosystem and how all life is interdependent.*

- How do we know dinosaurs existed?

*Dinosaurs did not write a daily journal or leave snapshots. The only proof scientists have of dinosaurs is their fossilized bones and eggs that are found in sedimentary rocks.*

- Paleontologists are scientists who study fossils. They dig up these bones that were covered by rock, mud and sand, put them together and study them.
- Through studying dinosaur fossils, knowledge is gained about dinosaurs such as what they ate, how big or little they were, how they died and how they protected themselves. But we do not know much about their lifestyles or how they acted. Did they wrestle with each other? Did they walk or run? Did they howl at the moon, play games or just eat all the time? (Ask students what they think)
- Review the names of some dinosaurs and a fact about each from the dinosaur flash cards.
- Scientists don't know exactly how dinosaurs acted and they don't know exactly why the dinosaurs became extinct. It could have been a seasonal flood (spray students with water), it could have been a huge meteorite that struck the earth causing dust to form in the atmosphere (throw a handful of confetti at students) causing the sun to stop shining on the earth (turn off the lights). This may have killed the plants that killed the plant-eating dinosaurs that killed the meat eating dinosaurs causing mass extinction.
- Scientists don't know everything - - that is why scientists and you, as second grade scientists, continue to study what is known and can be found out by looking at the surface of the earth or the earth's crust.

Materials: spray bottle, confetti, dinosaur flash cards

## **HANDS-ON ACTIVITY CENTERS (30 MINUTES)**

Today you will be exploring three stations that will help in explaining more about dinosaurs and fossils.

- Read these brief descriptions of the activity centers
- Give detailed directions only at a center that does not have an adult present
- Activity center two can be an independent center if desired

Activity Center One: You will become a paleontologist digging for dinosaur fossils. You will line up the bones to form a guess of what the dinosaur's skeleton looked like. Remember, when a paleontologist is digging up bones, he or she may not know what the dinosaur looked like until all of the pieces have been retrieved. Carefully dust each piece of bone off with a brush. Make sure to give each other enough space to work. Paleontologists must work close to each other at dig sites. (Note: have students wear safety glasses to simulate working in the field and to avoid getting sand in their eyes).

Activity Center Two: Observe some real dinosaur fossils.  
Make rubbings from a dinosaur stencil.

Activity Center Three: Dinosaur Facts Game

### **ACTIVITY CENTER ONE - DINOSAUR DIG**

- Prior to the activity center, place the plastic dinosaur bones in the tray and cover with dirt or sand. Create two trays. Do not mix the bones of both skeletons in one tray.
- Have students wear plastic glasses (note: these are not true safety glasses) to simulate working in the field.
- Students should use brushes to carefully brush off sand/dirt from the bones.
- Students should lay bones down to guess what the dinosaur looked like. Students will probably not have time to assemble the pieces
- After students have finished laying down the bones, show them the poster of what the skeleton actually looks like.

Materials: 2 sets of plastic dinosaur bones, sand or dirt, brushes, 2 trays, poster guide to skeleton, plastic glasses

## ACTIVITY CENTER TWO - DINOSAUR FOSSILS AND DINOSAUR RUBBINGS

### Dinosaur Rubbings

- Make a rubbing of the dinosaur raised stencils using crayons and a piece of paper

### How Fossils Form

- On a rocky shore or in a stony place, you may find sedimentary rocks that look as if they were once alive. There are shapes of shells, bones and teeth, leaves and tree bark. These are fossils - the remains of prehistoric animals and plants that were trapped in rocks and turned to stone
- Use the magnifying glasses (and microscope if available) to view fossil samples.
- Observe the crinoids box. These fossils are very old - older than the dinosaurs. Crinoids or sea lilies are marine invertebrates (creatures with no backbone) that lived about 550 million years ago.

Materials: dinosaur raised stencils, crayons, paper, 7 magnifying glasses, fossil samples, crinoids box, microscope (if available), fossil samples

## ACTIVITY CENTER THREE - DINOSAUR FACTS GAME

- Place the deck of cards on the center of the table. Students take turns selecting a card and reading one of the questions on the back to the other students. After students have been given a chance to answer the question, the student with the card shares the answer with the others. Students take turns until time is up.

Materials: dinosaur card game

## CONCLUSION - BODYSAURUS

Bodysaurus is included in this unit as a way to demonstrate to students how large a brontosaurus would be if it were here at Maidu School, if it was laying on the playground blacktop.

- Dinosaurs came in many different sizes. Some dinosaurs were small, about the size of a chicken, while other dinosaurs were huge, like the diplodocus or the ultrasaurus.
- The apatosaurus (also known as brontosaurus) had a long, thin neck and a tiny head. Its legs were the size of thick tree trunks and it had a very long tail.

The apatosaurus lived both on land and in water. It walked on four legs and ate plants. It had a very small brain.

- How many student body lengths, head to foot, do you think will add up to make the length of a apatosaurus? An apatosaurus is about 65 feet long and 15 feet high.
- Help students estimate on the board. The average second grader is about four feet tall.
- We are going to go outside and estimate the measurement of a apatosaurus on the sidewalk.
- Divide the class into 2 groups. Have one group stand on the sidewalk by the pick-up lane and have one student in that group hold the end of the rope. Holding the base of the rope, walk with the other group of students toward the playground, stopping when they have reached about 65 feet. Have the two groups look at each other to convey the length of the apatosaurus.
- To convey the height of the apatosaurus, have a point of reference on the roof of the classroom building which measures approximately 15 feet.

Materials: Picture of apatosaurus, 65 foot rope