

## FOCUS ON FOSSILS KINDERGARTEN-SECOND

### Earth Science TEKS

*Kindergarten:* K.7A, K.7B (Earth) K.5A (Matter)

*First Grade:* 1.7A, 1.7B, 1.7C (Earth) 1.5A (Matter)

*Second Grade:* 2.7A, 2.7B, 2.7C 2.5A (Matter)

### Vocabulary

bumpy, color, extinct, fossils, heavy, man-made resources, natural resources, paleontologists, physical properties, pointy, rocks, rough, round, shape, sharp, size, skeleton, smooth, square, texture

### Pre-Show Activity

#### Pre-Show Lesson: Fossils

Post this question on the board: "What is a fossil?"

#### *Materials:*

Per Pair: small "jewelry bag" with a fossil in it (You can obtain small fossils at the Houston Museum of Natural Science Gift Shop)

Per Class: fossil guide

#### *Procedure:*

1. Have students sit in a circle on the floor. Ask them, "What is old?" and "How old do you think something needs to be for scientists to consider it a fossil?" Discuss. Explain to them that to be a fossil, usually paleontologists (scientists who study ancient plants and animals) say it must be over 10,000 years old. It has to date back to before humans were on Earth. Some fossils are actually millions or billions of years old! Ask, "How do you think you would need to handle something that is millions of years old?" Remind students that fossils are very fragile. Brainstorm some objects that might be fossils with the students and

make a list on the board. For younger students you may want to have pictures of fossils and non fossils to talk about. Be sure to emphasize that only things that were living can be fossils.

2. Hand each pair of students the “mystery bag”. Without looking in the bag, ask them to describe the texture and shape. See if they can predict what type of fossil it might be. You may want to provide a word bank for younger students. Possible fossils: shell, bone, tooth, etc.

3. Invite students to carefully remove the fossil from the bag. Discuss if it looks like what they expected. What body parts can they see? Color? Texture? Size? Shape? Natural or man-made?

4. Students will draw and color their fossil on a clean sheet of paper. They will need to make their drawing as accurate as possible. They should also write words to describe it. For younger students you may want to provide a word bank. See Appendix A-1.

5. Students will sit in a circle up front. Place all the student drawn fossil pictures in the middle. Tell students that when paleontologists find a fossil, they often match it to a picture to help identify it. They use a fossil guide to do this. Show students an example of a fossil guide. Tell them that they have made a fossil guide with their drawings, and now we are going to try to match our fossils with their guide. Give each pair of students a fossil, and as a class, try to match the fossils back with the student drawn pictures. Students should not have their original fossil.

6. Discuss with students the difficulty of matching fossils with the guide. Ask if they think it would be easier with a scientific field guide. Why or why not?

## Post-Show Enrichment Activities

### Activity One: Talk a Mile a Minute

#### *Procedure:*

1. Put students into groups and assign each student in the group a color. Each group should have a green, red, yellow and blue person.
2. One person, the blue person, from each group will start. Tell that person to face or approach you while the rest of the class turns around or covers their eyes.
3. Either hold up a word for the blue students to see, or quietly tell the student a word (for younger students). The words given will be from the presentation.
4. The blue student will go back to their group and talk “a mile a minute” about their word without saying the word. The talker is allowed to say anything else related to the word during this time, but they cannot say any form of the word. The talker will keep talking until someone in the group identifies the word.
5. The person who identifies the word will be the next speaker for their group. If you prefer, you can choose a different color from the group to be the next speaker so that all children will get an equal opportunity to talk.

Possible words: fossil, paleontologist, extinct, skeleton

### Activity Two: Fossil Classification

#### *Procedure:*

1. Copy some pictures of fossils and some of plants, animals, shells, rocks, etc. on tag board. Make a set of copies for each group.
2. Ask students to classify them as either a fossil or not a fossil.
3. Next, you may use these pictures to play a game. Turn pictures over or place them in a bag so that students cannot see the front. Students will reach in and pull out a picture. If it is a fossil, they get a point. Students can keep track of their points.

### Activity Three: Make a Fossil

*Materials:* paper cups, plaster of Paris, masking tape, newspaper.

*Procedure:*

1. Cut around the middle of the paper cup, leaving a small section intact for a hinge connecting the top and the bottom halves of the cup. The teacher may need to prepare the cups ahead of time.
2. Press some clay into the lower portion of a small paper cup.
3. Students will press their upper teeth into the clay as deeply as possible without damaging the edges of the cup. They are making a mold. This would be like a dinosaur footprint.
4. Use masking tape to tape the cup back together. Be sure it is carefully sealed.
5. Put the cup on newspaper so that you will not make a mess on the desks.
6. Pour plaster of Paris into the cup. Make it to a fairly fluid consistency, so air bubbles can be released more easily. Tap the base of the cup several times on the tabletop to dislodge air bubbles.
7. When the plaster is hard, tear away the cup and carefully peel clay away from the plaster to reveal a cast of your teeth. A cast fossil forms when the mold is filled and hardened. This is a man-made fossil. It is not a real fossil.

Discuss with students examples of naturally made fossils that form like this. Show a shaped ice cube, candy molds or muffin tray. There are many different shapes of these. You can even find a dinosaur skeleton and footprints. Fill it up with sediment or plaster of Paris and explain the natural process to the students.

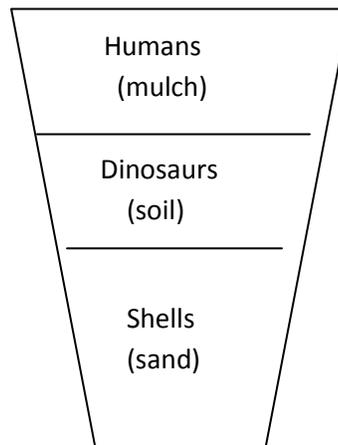
### Activity Four: Digging for Fossils

*Materials:*

Per group: newspaper, plastic shoe box, some small plastic dinosaurs, shells, or other small plastic plants or animals, plastic sea organisms, plenty of sand and soil.

*Procedure:*

1. The teacher reads *Curious George's Dinosaur Discovery* by Margret and H.A. Rey.
2. Cover the desks in newspaper and give each group the supplies listed above.
3. Tell students a simple story about how fossils are formed and the layering of the Earth. Students will model this as you speak. Have students cover the bottom of their plastic container with sand. Tell students that millions of years ago Texas was covered by the ocean. Some of these sea organisms died and were covered with sand. *Students will lay down some plastic ocean organisms. Next, they will cover them with more sand until they are buried.* Eventually, the Earth shifted and the water dried up throughout Texas. Then dinosaurs roamed the area. Eventually these died out, and some were covered with more dirt. *Students will cover these with soil.* Millions of years later, today, humans live in Texas and some of them called paleontologists search for fossils of these organisms so that we can learn more about what Earth was like in the past.
4. Have groups switch shoe boxes. Students are going to pretend to be paleontologists and go on a fossil dig to find the “hidden fossils”. Students will use small plastic spoons to dig for fossils. When they excavate, they will need to figure out where they are going to dig and where they are going to place the dirt that they dug up. It must stay in their shoe box. Students will count how many spoonfuls of dirt it will take for them to find a fossil. They can continue finding fossils until time is up.
5. Debrief with students and discuss what it was like being a paleontologist. With older students discuss how weathering and erosion could have affected their dig.



## Appendix

A-1

### Fossil Word Bank

**Sharp**

**Pointy**

**Smooth**

**Rough**

**Round**

**Soft**

**Hard**

**Square**

**Bumpy**

**Grey**

**Brown**

**White**

**Tan**

**Small**

**Big**

**Heavy**

**Light**