Dinosaurs

Students study fossils and learn how fossils help scientists learn about ancient animals such as dinosaurs.

Grade Level: Kindergarten

Phenomena: Can fossils help us learn about the past?

Objectives:
- Students will describe what a fossil is.
- Students will name two characteristics of dinosaurs.
- Students will know that dinosaurs are extinct.

Materials:
- Play-dough
- Buttons, pennies, paper clips, sea shells and other objects to make imprints
- Fossils of bones, animal tracks or plant imprints, or pictures of fossils - National Geographic usually has great photos
- Oh Dinosaur song

Appendixes:
- Oh Dinosaur song: Page 4

Time Considerations:
Preparations: 20 minutes
Lesson Time: 45-55 minutes
Introduction: 10 minutes
Activity 1: 5-10 minutes
Activity 2: 5-10 minutes
Activity 3: 10 minutes
Activity 4: 10 minutes
Conclusion: 5 minutes

Related Lesson Plans:
First Explorers, Native American Myths, Digging Up Nevada’s Past, Emigrant Trails

Next Generation Science Standards

KESS3-1.
Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

Science and Engineering Practices (SEP):
Developing and using models.

Disciplinary Core Ideas:
Natural Resources.

Crosscutting Concepts:
Systems and system models.

Excellence in Environmental Education Guidelines

Strand 2.1—The Earth as a Physical System
A) Learners are able to identify changes and differences in the physical environment.

Strand 2.2—The Living Environment
B) Learners understand that plants and animals have different characteristics and that many of the characteristics are inherited.

Background

Dinosaurs are a great way to connect with young students and talk about the Earth a long time ago. Huge, extinct beasts that lived 150 million years ago challenge our imagination to envision what life might have been like during the time of the dinosaurs. Were they reptiles? Were they birds? How did they go extinct? How did they interact with each other? Some questions remain unanswered, or their answers have changed, but we know enough to sketch the world of dinosaurs and use it to understand how scientists study their lives 140 million years ago. Young students get focused on famous dinosaurs like Tyrannosaurus-Rex, but it’s important to share that dinosaurs were very diverse in size, diet and disposition.

A fossil is any evidence of past life - including bones, plant imprints, fossilized feces, footprints, etc. Fossils help scientists learn about dinosaurs and are the main reason we know what we know about life when the dinosaurs were alive. Fossils are commonly made by minerals slowly taking the place of an object, thus turning it into rock. Students can make their own fossils of play-dough to learn about how a fossil is made and to help them identify fossils.

Preparation

Gather all materials. This activity is greatly improved if students can observe real
fossils. If you don’t have any, you might borrow some from a local geologist. Geologists can be contacted at most colleges or through various State and Federal agencies, such as the Bureau of Land Management.

Homemade Play-dough recipe: 1 cup flour, 1 cup salt, 1-1/2 cup water, 3 drops food coloring, 1 tablespoon vegetable oil.

Add food coloring to water. Mix all ingredients. Knead until smooth consistency. Keep it covered in a refrigerator when not using it. This recipe will make enough for 15 to 20 students. You can also make edible play-dough out of peanut butter, but make sure no students in your class have a peanut allergy (Sensory-Processing-Disorder.com).

**Doing the Activity**

**Vocabulary:**
Tell Students that they Will be learning some very big words today. Go over vocabulary words as a class. Be sure to engage with the students. Ask the students if anyone knows that the word is and call on one or two to share before reading them the definition.

**Introduction: Guessing Game**
Tell the students that you are going to play a guessing game. Explain that you will give them some clues and they will have to guess what you are talking about. Clues:

1. I am thinking of an animal that lived millions of years ago.
2. Most of the time this animal is very big.
3. Sometimes this animal was as small as chickens are today.
4. Most often this animal only ate plants, but would sometimes eat animals.
5. This animal is extinct. There are none left on Earth.

If the children have not guessed, continue giving clues i.e. color, description, etc.

**Activity 1: Fossil Investigation**
Start with leading questions to test previous knowledge. Some suggestions are: What does a dinosaur look like? (scaly skin, horns in front, spikes along their backs, some walked on two legs, some on four) What did dinosaurs eat? (meat - carnivore, plants - herbivore, both meat and plants - omnivore) How big were the dinosaurs? (bigger than the classroom or as small as an adult hand) Did dinosaurs have babies? (yes, in eggs) Are dinosaurs around today? (no, they are extinct, which means they are no longer around)

**Activity 2: Dinosaur Walk**
Tell the students that you are going to teach them how to walk like dinosaurs.

Say or sing the following with the students and include movement:

The dinosaurs lived long ago, And walked like this, and that (slow, heavy walking movement). Some were large (stretch hands upwards) and some were small (crouch down). Some liked water (swimming motions) and some just walked on land (stomp feet). Some had wings, that flapped and flapped (flap arms). Some had long necks, that stretched and stretched (hand on neck stretching upward). The meanest, rudest one of all was ferocious Tyrannosaurus Rex (feet apart, hands claw like, scowl and growl). These were the dinosaurs of long ago. Goodness gracious, where did they go?

**Activity 3: Fossil Activity**
Have the students sit at their desks.

Ask the students how do we know dinosaurs actually lived? Discuss what fossils are and how they became fossils. Bring in different fossils of animals or plants for the students to feel
and learn from observing. Pictures of fossils are also interesting to share.

Define fossils as any evidence of those living in the past. The students can imprint various items into the play-dough and make their own fossils.

Show students that the imprint is a fossil just as the actual object that made the imprint is a fossil. Reinforce what a fossil is while the students are doing this activity.

Give each student a piece of play dough.

Demonstrate rolling the dough into balls, then flatten into a pancake. After you have shown the students, have them do this.

Pass out the leaves, shells, bones, toy dinosaurs or any other objects you have brought.

Tell the students to press the objects in the dough to make an impression.

**Activity 4: Studentosaurus**

Have students create their own dinosaurs. Have students draw their dinosaur on Studentosaurus Sheet
dinosaur. What kind of dinosaur did they create? Carnivore or omnivore? On land or swimmer? Etc. What characteristics did the student draw to show that?

Have students share their dinosaur with neighbors or choose a few to share as a class.

**Conclusion**

Wrap-up the lesson by asking the students what animal they learned about.
Ask the students what words were used when talking about dinosaurs. *(fossil, extinct, plant-eater, meat-eater, etc)*

How big are dinosaurs? How small can dinosaurs be? How long ago did dinosaurs live? Assess students on how well they follow directions and understand the concept, when making their fossils.

**Assessment**

Assess students on how they answer questions during the discussion and wrap-up.

**Extensions**

Sing the *Oh Dinosaur* song with the students.

Ask students to write about their dinosaur. What kind of dinosaur did they create? Carnivore or omnivore? On land or swimmer? Etc. What characteristics did the student draw to show that?

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Oh Dinosaur
Sung to the tune of Oh Christmas Tree

Oh dinosaur, oh dinosaur
What do we know about you?
Some were big and some were small
and your fossils tell us so
Oh dinosaur, Oh dinosaur
That’s what we know about you.

Oh dinosaur, oh dinosaur
What do we know about you?
Some ate plants and some ate meat
and your fossils tell us so
Oh dinosaur, Oh dinosaur
That’s what we know about you.

Oh dinosaur, oh dinosaur
What do we know about you?
Some walked on land and flew in the air
and your fossils tell us so
Oh dinosaur, Oh dinosaur
That’s what we know about you.

Oh dinosaur, oh dinosaur
What do we know about you?
Some walked on 2 legs an some on 4
and your fossils tell us so
Oh dinosaur, Oh dinosaur
That’s what we know about you.