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Dinosaur Evolution

Grade Level:

- K
- 1
- 2
- 3

Lesson Time:

40 minutes

Objective:

- Students will be able to demonstrate an understanding about different kinds of dinosaurs by identifying key features of each dinosaur and being able to explain how that attribute is an adaptation to their environment.

Preparation

Before going to the classroom, you will need to:

1. Contact the teacher to find out the length of the class period and the number of students in the class. Ask the teacher for about 5 minutes to set up prior to beginning.
2. Prepare handouts and/or bring a small rubber dinosaur for each student. Students will want to keep the dinosaurs, so you will need to decide whether these are giveaways. You could bring along a few sheets of dinosaur stickers to give away.
3. Keep in mind that this activity is for young students with a lot of energy. Ask the teacher to work with you to re-gain students' attention after each part of the activity.
4. Collect any giveaways for students, such as fossil posters or geologic time scale bookmarks.

Materials:

For instructional purposes:

- A shallow bin with about 2" of sand to bury the rubber dinosaurs
- Rubber dinosaurs or a color copy of *Images of Dinosaurs*. The rubber dinosaurs can be found in most teacher supply stores in the math aisle for about $9.00 for 100. They usually are primary-colored. Make sure you have the following dinosaurs if you decide to use the rubber dinosaurs: Tyrannosaurus Rex. Apatosaurus, Triceratops, Stegosaurus, and Velociraptor
- The book *Ten Little Dinosaurs* by Pattie Schnetzler and Jim Harris (googly eye book) or another

children's story abut dinosaurs.

Purpose

The study of dinosaurs stretches children's imaginations, provides new perspectives on time and space, and invites students to discover worlds very different from our modern Earth. The study of dinosaurs is important in understanding the causes of past major extinctions of land animals. In this investigation, students will make basic observations about specific traits of dinosaurs and discuss how those traits suited dinosaurs to their environments.

Safety

This investigation is considered safe to do with students. Make sure students do not hurt each other when they are doing movements.

Investigation Question

How do paleontologists know how dinosaurs lived?

What to do

1. **(3-5 minutes)** Introduce the concepts of extinction and making observations. Be sure to accept as many explanations as you can. Some questions that you can use are:
    - Could you go see a dinosaur in a zoo? Could you have a dinosaur as a pet? Why not? (*Answer: Because dinosaurs are extinct; they are no longer living anywhere on Earth*.)
    - How do we know that dinosaurs used to exist? (*Answer: They left fossils of their bones.*)
    - If we only have bones and footprints, how do we find out more about dinosaurs? (*Be sure to accept as many explanations as you can.*)
    - How can we know what dinosaurs ate? (*Answer: By what kind of teeth they had.*)
    - How can we know how they walked? (*Answer: By the way their leg bones are shaped.*)
    - By raising you hand in agreement, who would like to be a paleontologist (scientist who studies dinosaurs)?
2. **(5 minutes)** Explain that a paleontologist digs up dinosaur fossils and studies them to understand how dinosaurs used to look and live. Ask students to dig in the sand and pull out one rubber dinosaur. (*Each student in the class should have an opportunity to dig in the sand and find a dinosaur.*) Once each student has a dinosaur, have them compare their dinosaurs to their peers' dinosaurs. Ask the students:
    - Do all the students have the same dinosaur?
3. **(15-20 minutes)** Go through each dinosaur with the students to make observations about their finds. Be sure to accept as many explanations for the questions below as you can.
    - Tyrannosaurus Rex: This dinosaur has long back legs and large teeth.
        - What do you think it ate? (*Answer: Meat. A dinosaur that eats meat is a carnivore. It also had arms that were so short it could not touch its pinky fingers together. Have the students stand up, put their arms at their sides and then bend their elbows so that they cannot touch their pinky fingers together.*)
        - If this is how short your arms were, how would you eat? (*Answer: You would rip food with your teeth and stomp on it.*

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        - Have the students stomp around a bit to feel like a big fierce T-rex.

    - Apatosaurus: This dinosaur has a small head and a very long neck.
        - Why would it need such a long neck? (*Answer: It eats leaves from tree tops. It also walks on four legs.*)
        - Does it look like it could run quickly? (*Answer: It is a very big dinosaur that moves slowly.*)
        - What do we call a dinosaur that eats plants? (*Answer: A herbivore.*)
    - Triceratops: This dinosaur has horns and a frill around its head. It also has a beak-like mouth to eat grass.
        - What might it use its horns for? (*Answer: Protection.*)
        - Have the students put two fingers from one hand up on their foreheads and a pointer finger from the other hand pointing off their nose. Let them pretend to be a triceratops trying to protect itself from being eaten.
    - Stegosaurus: This dinosaur has plates running down its back and a spiky tail.
        - Is this to help it hunt?
        - If it was a hunter, do you think it would have such stumpy legs and not be able to run very quickly? (*Answer: The plates and spiky tail are for protection. This dinosaur has one of the smallest brains of any dinosaur.)*
    - Velociraptor: This is one of the fiercest, smartest dinosaurs.
        - Have them look at its legs. Do they think it could run quickly? (*Answer: Yes.*)
        - Why might this dinosaur need to run quickly? (*Answer: To hunt.*)
        - Explain that this dinosaur would usually hunt in packs. Paleontologists know this from the footprints that they find. This dinosaur is also a carnivore.
        - Are you (the student) a carnivore or herbivore? (*Answer: Since humans eat meat and plants, we are omnivores*.)

4. **(5-7 minutes)** Once you have gone through the dinosaurs, wrap up the activity by reading a story about dinosaurs. This allows students to see pictures of different dinosaurs again. It also gives them a slightly different context in which to hear dinosaur names, and it reinforces some of the attributes that they observed from their rubber animals. Ask students if they have any questions or would like to share any stories about their favorite dinosaurs. End the activity by complimenting them on what good paleontologists they were. You can leave giveaways behind for the classroom teacher to distribute.

ImagesofDinosaurs.pdf