

# Caleb the Paleontologist: A Dinosaur Discovery Day!

## Materials Needed

- **For Fossil Making:** 1 cup flour, 1/2 cup salt, 1/2 cup water, a mixing bowl, small plastic dinosaur toys.
- **For the Dinosaur Dig:** A large shallow bin or tray (a sensory bin, baking pan, or cardboard box will work), sand, dirt, or uncooked pasta/rice to fill the bin, a small paintbrush, a small spoon or shovel.
- **For the Discovery Journal:** A few sheets of paper, crayons, markers, or colored pencils.
- **Optional:** A magnifying glass, an old shirt or apron for messy play.

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## Lesson Plan

### 1. Learning Objectives

By the end of this lesson, Caleb will be able to:

- Demonstrate the process of excavation by carefully uncovering hidden objects.
- Create a physical representation of a dinosaur fossil using dough.
- Use his imagination to create a story about a dinosaur based on its "fossil."
- Practice fine motor skills through molding, pressing, brushing, and drawing.

### 2. Introduction: The Paleontologist's Mission (5 minutes)

- **Instruction:** "Good morning, Paleontologist Caleb! A paleontologist is a scientist who studies dinosaur bones to learn about the past. Today, you have a very important mission. First, we need to understand what fossils look like by making our own. Then, you'll go on a special dig to uncover a mysterious dinosaur fossil that has been buried for millions of years! Are you ready for the adventure?"
- **Engagement:** Frame the entire lesson as a special scientific mission. You can even hand him a "Top Secret Mission" envelope with a drawing of a dinosaur bone inside to start the fun.

### 3. Activity 1: Make Your Own Fossils (15 minutes)

- **Instructional Strategy (Hands-on, Kinesthetic):**
  1. In a bowl, help Caleb mix the flour, salt, and water together to form a firm dough. Let him get his hands messy and knead it for a minute or two.
  2. Have him flatten a piece of dough into a "rock" shape, about the size of his palm.
  3. Give him a small plastic dinosaur and have him press it firmly into the dough to make an imprint. Then, carefully lift the dinosaur out. Look! A fossil!
  4. Repeat this with a few different dinosaurs. You can let these air dry or bake them at 200°F (95°C) for about an hour to harden for a future dig. *(For today's lesson, you can have a few pre-made fossils ready to hide while his new ones are drying.)*
- **Application:** This isn't just a craft; it teaches the concept of imprints and how fossils are formed in a tangible way.

#### 4. Activity 2: The Great Dinosaur Dig (20 minutes)

- **Instructional Strategy (Problem-Solving, Active Learning):**

1. While Caleb isn't looking, bury the pre-made (or some of his newly made) salt-dough fossils in the sensory bin under the sand, dirt, or rice.
2. Present him with the dig site. "Paleontologist Caleb, our sensors show that ancient fossils are buried somewhere in this area! Your tools are a brush and a shovel. Remember, real paleontologists work very carefully so they don't break the delicate bones."
3. Let him dig, pour, and brush away the material to slowly uncover the fossils. Encourage him to describe what he is finding. ("I see a long tail!" "This one has a big head!")

- **Assessment (Formative):** Observe how he uses the tools. Does he switch from the shovel for big areas to the brush for delicate work? This shows his understanding of the "careful" excavation process.

#### 5. Activity 3: Dino Discovery & Storytelling (10 minutes)

- **Instructional Strategy (Creative Thinking, Communication):**

1. Once all the fossils are excavated, lay them out on a piece of paper.
2. Pick one fossil. Ask, "Based on this fossil, what do you think this dinosaur looked like when it was alive? Was it big or small? What did it eat? Let's draw it in your Paleontologist's Field Journal!"
3. On a fresh sheet of paper, Caleb draws his interpretation of the dinosaur.
4. Encourage him to name his new dinosaur and tell you a short story about it. For example: "This is the Fast-Runner-saurus. He ate green plants and could run away from the T-Rex!"

- **Creativity:** This step moves beyond simple identification into imaginative creation, which is a powerful way to apply knowledge.

#### 6. Wrap-Up: Paleontologist's Field Journal (5 minutes)

- **Instruction:** "Great work today, Paleontologist Caleb! You have made incredible discoveries. For the last page in your journal, please draw your favorite discovery from today's dig."
- **Assessment (Summative):** This drawing serves as a wonderful summary of his experience and a keepsake of what he enjoyed most. You can write the name of his new dinosaur and a sentence from his story on the page.

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#### Differentiation and Inclusivity

- **For Extra Support:** If the dig is frustrating, uncover a small corner of a fossil to give him a starting point. For the drawing activity, you can provide a basic dinosaur outline that he can add details to.
- **For an Extra Challenge:** Hide tiny objects (like beads or small pebbles) along with the fossils and call them "dinosaur eggs" or "fossilized plants." During the storytelling part, ask more complex questions: "Why do you think it had a long neck?" or "How did its pointy tail help it?" You could also research the real dinosaur he "found" and compare his drawing to a scientific illustration.