

NGSS Standard: MS-LS4-1



Adventure Description:

In this activity, students will think like a paleobiologist and create replicas of fossils that will be used in a childrens' museum exhibit!

Activity

- Teacher Note: This activity requires plaster to dry. We suggest doing steps 1-3 on one day, letting the plaster dry, and completing steps 4-5 the next day.
- Teacher Note: Students will need access to plaster. This can be mixed shortly before class and put in a sealed container so it doesn't dry out.

Step 1: Background Information on Paleobiologists and Fossils (5 minutes)

- Show [Video: Fossil Evidence](#).
- Explain to students a fossil is a trace of an organism that was once alive, like a dinosaur or prehistoric insect. Paleobiologists are scientists who study fossils to learn more about organisms that lived in the past. Paleobiologists can even “date” fossils to find out how old they are! To do this, paleobiologists must understand how fossils are formed. Show students [Handout: How Fossils are Formed](#) and discuss what information we can gather from analyzing a fossil.
- Ask students if they think studying fossils might be difficult. Have students brainstorm potential problems on the board with you. (Issues include: fossils break easily, they are rare, they might be on display at a museum, etc.)
- Explain to students that while there are many issues with fossils being delicate or being on display at a museum, paleobiologists have come up with a solution to both problems! Paleobiologists create replicas of the fossils they want to examine! A replica is an exact copy of something, like a piece of artwork, a document, or a fossil! Many fossil replicas are so good that people can't tell the difference between the copy and the real fossil!
- Paleobiologists create and use replicas for many reasons. Show [Handout: Reasons to Use Replicas](#).
- Explain to students that today, they will think like paleobiologists and create fossil replicas!

Please contact Allison Bischoff, Director of Customer Service, at allison@rozzylearningcompany.com or 314-272-2560 with questions.

Step 2: Activity Set Up (5 minutes)

- Explain to students that they will be creating a replica of a fossil to be used in a museum. The replica will be put on display in a kid's museum exhibit about how fossils are formed. Paleobiologists want to use a replica instead of the real fossil, so that kids can touch the exhibit.
- Give students [Handout: Creating a Replica](#) and read through the instructions.
- Give students the following materials:
 - Modeling Clay
 - Small object to create a replica of (toy dinosaurs or shells work well)
 - Plaster of Paris

Step 3: Creating a Replica (10-20 minutes)

- Explain to students that they will now create their fossil replica.
- Have students complete Step 1 on their handout.
- While students are working, ask them the following questions:
 - Do you think your mold is able to capture all of the detail of your fossil?
 - What is the hardest part about making this mold?
 - Could you use this same process if you were trying to replace something with fur or feathers? Why or why not?

Step 4: Making the Replica Museum Ready (20+ minutes)

- Explain to students that they will now put the finishing touches on their replica to get it ready for use in the museum.
- Give students the following materials:
 - Glue
 - Sandpaper
 - Markers
 - Paints/paintbrushes
 - Extra plaster (optional)
- Have students complete step 2 on their handout.
- While students are working, ask them the following questions:
 - Did your replica come out the way you were expecting?
 - What could you have done to make your pieces fit together better?

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Step 5: Creating a Museum Exhibit (20+ minutes)

- Explain to students that they will now make an exhibit to display their new fossil replica.
- Give students the following materials:
 - Art Supplies and Building Materials
- Have students complete Step 3 on their handout.
- Extra time? Have students share their fossils and exhibits with the class.
- Have a concluding discussion about what paleobiologists can learn from fossils. Fossils can give paleobiologists ideas of how a prehistoric animal lived, what it ate, what it looked like, and how large it was. Fossils are formed when the animal dies and the body sinks into the mud. The body rots over time, and layers of sediment, like soil and dirt, cover the bones of the animal. The sediment hardens into rock, encasing the fossil inside. After many years, the bones inside decay, and minerals filter down into the space and fill the spots where the bones used to be. Then, the sediment around the fossil gradually wears away, and the fossil is discovered!

Materials List

Provided online:

- Video: Fossil Evidence
- Handout: How Fossils are Formed
- Handout: Reasons to Use Replicas
- Handout: Creating a Replica

Not Provided (Each student or group needs):

- Modeling Clay
- Small object to create a replica of (toy dinosaurs or shells work well)
- Plaster of Paris
- Glue
- Sandpaper
- Markers
- Paints/paintbrushes
- Extra plaster (optional)
- Art Supplies and Building Materials (like clean recyclables, popsicle sticks, pipe cleaners, etc.)

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