

Fossils in Time

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This unit consists of a set of activities that introduce students to fossils. It can easily be adapted to other grades with a few changes. The focus can also be changed. Students can be introduced to fossil formation, fossil types, index fossils, or mapping.

TIME: Each station lasts one 45-minute class period. Last 10 minutes are devoted to cleanup and completing record sheet.

PROCEDURES:

Students use a set of learning stations at which they work in cooperative groups. Students rotate through jobs as the groups rotate through the stations. The stations are labeled for descriptive purposes only. They are designed to be completed in any order.

DAY 1—STATION A: Message in a Fossil

This program simulates a fossil dig and shows the students tools and techniques used in uncovering fossils.

1. As the students uncover fossils, they match them to fossils in a “museum” and build an appropriate diorama for their own museum.
2. Record the information in logbook and on time scale chart.

Questions:

- Name two tools a paleontologist uses when looking for fossils.
- Name two fossils your group found.
- From what era and/or period did those fossils come?

DAY 2—STATION B: Fossil Casting

Each student makes a plaster cast of a fossil of their choice.

1. Soften the piece of clay. Make it large enough to fit the bottom of the cardboard tube. Do not attach it to the tube yet.
2. Rub dishwashing liquid on the fossil. This keeps the clay from sticking to the fossil. Press the fossil firmly into the clay and then lift it out of the clay. You now have a *mold*.
3. Put your name on the cardboard tube. Place the tube on the clay, centering your mold. Seal the tube with the clay so it won't leak.
4. Mix two scoopsfuls of plaster with about 15 ml of water.

OBJECTIVE:

- *Use a variety of skills to explore and develop an understanding of fossil formation, types, age, environments, and identification.*

Materials and Equipment:

STATION A: Message in a Fossil

- Computer
- "Message in a Fossil" software by Edunetics. Students work through 1 lesson.

Materials and Equipment:

STATION B: Fossil Casting

- Plaster of paris
- Plastic cups
- Stirring sticks
- Water
- Dishwashing liquid
- Graduated cylinders
- Clay
- Cardboard rings
- Labeled collection of fossils
- Fossil handbook

Stir the mixture so it looks like pancake batter (thick, but easy to pour). Add water or plaster as necessary.

5. Pour the plaster mixture into the cardboard tube. Place it on a tray to dry overnight. This will be your *cast*.
6. Read about the fossil you are reproducing and choose one of the following activities to complete:
 - a. Draw a picture of the animal in the environment it may have inhabited.
 - b. Write a short story telling about how this animal may have lived.
 - c. Write two or three paragraphs describing a present-day animal that is similar to the fossil you cast.

Questions:

- What fossil did you choose?
- From what era and/or period did the fossil come?
- What does “index fossil” mean?
- Would your fossil be a good index fossil? Why or why not?

Materials and Equipment:

STATION C: *Mystery Fossils*

- Collection of unlabeled fossils
- Variety of resource materials (fossil handbooks, encyclopedias, posters)

DAY 3—STATION C: *Mystery Fossils*

1. Students use the resource materials to identify at least five fossils found at the station.
2. Students draw a picture of the fossil and name it.
3. Tell the time range (era, period) and environment or habitat in which it lived.

Questions:

- How many fossils did you identify?
- Which resource helped you find the most information?
- Which fossil was the earliest one you identified? In which era and/or period did it exist?

DAY 4—STATION D: Fossil Dig

1. Students work together as a group to sift and search a box of sand to find fossils.
2. Students draw what they find, identify it and keep one sample. Extra fossils are returned to the box for the next group.

Questions:

- Name three kinds of fossils your group found.
- In what type of environment did these plants or animals live?
- How did you decide what the environment was like?

DAY 5—STATION E: Puzzle Time

1. Students glue puzzle pieces to newsprint to make a time scale poster.
2. Check completed puzzles to make sure they are correct.
2. Students color puzzle or complete a word puzzle based on geologic terms.

Questions:

- During which era did fossil signs of bacteria and algae first appear?
- During which period did fish fossils first appear?
- Name the era and the periods when dinosaurs flourished.

ASSESSMENT:

- Assessment is based on the student's work at each station, the completion of the logbook questions, and the geologic time chart. Most stations also have written work that the student must complete either individually or as part of a group.

Materials and Equipment:

STATION D: Fossil Dig

- Container large enough for group of four students to work in
- Fossiliferous soil (obtained locally or from a reliable source)
- Sand
- Soil
- Rocks for filler
- Identification sheet
- Handbooks
- Hand lenses

Materials and Equipment:

STATION E: Puzzle Time

- Envelope containing pieces for 1 geologic time scale puzzle
- Glue
- Newsprint or construction paper for mounting puzzle
- Colored pencils for coloring completed puzzles