

# Fossil Footsteps

**Science Standard IV:**

Students will understand how fossils are formed, where they may be found in Utah, and how they can be used to make inferences.

**Objective 1:**

Describe Utah fossils and explain how they were formed.

**Intended Learning Outcomes:**

1. Use Science Process and Thinking Skills
4. Communicate Effectively Using Science Language and Reasoning.

**Content Connections:**

Social Studies VI-1

## Science Standard IV

### Objective 1

#### Connections

## Background Information

Fossils of ancient living organisms are found throughout Utah. They tell the story of Utah's past. Almost all fossils are found in sedimentary rocks. Since sedimentary rock is deposited in layers, the oldest rocks are at the bottom of a sequence, and the youngest are on the top. Fossils in the lower layers tell us about what life was like long ago. There are three ways in which fossils are formed in sedimentary rock:

1. preserved organisms,
2. mineral replacement of organisms, and
3. impressions or tracks.

Tracks belong to that category of fossils known as trace fossils. Trace fossils are different from body fossils, which represent the actual remains of an animal. Trace fossils are such things as tracks, burrows, and droppings, and represent traces the animal left as it moved around in its environment. Tracks can tell us much about where dinosaurs lived and how they moved. Dinosaur tracks have been found in many places throughout Utah. They have even been found in coal deposits near Price. Typically they are found in shale or other sedimentary rocks.

## Invitation to Learn

What inferences can be made from sets of dinosaur tracks? What kind of animals might have made these tracks?

## Instructional Procedures

1. Divide students into small learning groups.
2. Give each group a large ball of Model Magic or clay.
3. Have them flatten the model magic into a "mud flat."

**Materials**

- Model Magic or clay
- Paper clips, pencils or Lego pieces
- Paper for writing
- Plaster of paris (optional)

4. Have them create a scenario of what type of dinosaurs might have lived near this mud flat. What might their activities have been? Create a story with each person in the group representing a different animal.
5. Using small instruments (e.g., paper clips, pencils, fingers, Lego pieces, etc.), make footprints in the clay representing an animal and its movement. Make sure there are interactions with other animals.
6. Students create a story represented by the clay model and write it in a journal.
7. Trade mudflats with another group. Ask if the other group can come up with a reasonable explanation for what has happened. Have students think about how different dinosaurs created different tracks. Prepared dinosaur track sheets can be handed out and interpreted.

### ***Possible Extensions/Adaptations/Integration***

- Students may wish to make casts of the footprints using plaster of paris. Students can also consider other fossils. What would it take to preserve a bone? What happens to animals when they die?

### ***Assessment Suggestion***

- There is no “right nor wrong” answer in this activity. The importance is placed on whether the student contributes to the story and if the tracks they have made in the mudflat correspond to the described activity their animal was engaged in. The most important goals are the thinking skills used and the ability to communicate effectively with other group members.

### ***Family Connections***

- Encourage students to take a sheet of dinosaur tracks home for the family to interpret. A copy of the story written by the group may be taken home and illustrated by family members using the information in the story. Parents can be encouraged to stop and see dinosaur tracks while traveling through Utah.

## ***Additional Resources***

Fossil Kits (The Bug House 435-864-2402, 350 E. 300 S.,  
Delta, UT 84624)

Pictures of dinosaur tracks found in Utah

<http://www.stadiumweb.com/reprints/reprints.html>

<http://www.umnh.utah.edu/museum/exhibits/dinotales/index.html>

<http://www.ugs.state.ut.us/utahgeo/dinofossil/dinotracks.htm>