

# Activity—Preparing a Fish Fossil

## 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.

## Standard IV

## Objective 1

## Connections

## Background Information

It is best to have real fossils in the classroom for students to see and touch. It is also desirable for a teacher to have the experience of cleaning and preparing a fossil for display, so they may explain the process to their students. With this in mind, a piece of shale containing a fish fossil will be given to each fourth grade teacher who attends the summer science academy. Tools and instructions will be provided for them to begin to expose their fish fossil from the shale matrix in which it is found. In the short time we will have to work on this in the Academy, we will only begin to scratch the surface (ha ha!) of exposing the fossil. From there, the participant will take the fossil home to complete the preparation.

The fish fossil that we will be working on lived in a lake in what is now southwestern Wyoming between 60,000,000 and 55,000,000 years ago. The lake was in an area with mountain barriers to the north and south. The size of the lake is estimated to have been 15 miles wide and 60 miles long. Because of the lake's depth, something which other Eocene lakes lacked, this lake has produced some of the most perfect fossil specimens in the world. The record of the lake is exposed in strata that are near 300 feet thick, and composed mainly of calcareous shale. The fish that died settled to the sediments on the bottom of the lake, and were covered with additional sedimentary materials. The deposits were cemented and compacted over a period of 50 million years. The resulting fossils of fish have become carbon imprints. The fossils are very thin and require patience and careful work to expose them without doing damage.

## Invitation to Learn

Why must paleontologists work very carefully as they prepare fossil specimens for display? How would you like to have the opportunity to prepare a fossil specimen?

### **Materials**

*For each participant:*

- Piece of shale that contains a fish fossil
- Testing needle
- Small, soft brush
- Art gum eraser
- Instruction sheet for preparing fish fossils

### **Instructional Procedures**

1. Give each participant a bagged set of materials to prepare a fish fossil.
2. Caution the participants that the fish fossils are thin and fragile. Tell them to work carefully and patiently.
3. Read and follow the printed instructions that accompany the shale.

### **Possible Extensions/Adaptations**

Fossil shale is available from:

Ulrich's Fossil Fish Gallery, Fossil Station #308, Kemmerer, Wyoming 83101, Phone (307) 877-6466, Fax (307) 877-3289

You can request a price list and information packet. Fossil shale specimens are not cheap. In quantities of six or more, "B" kits are \$9.50 each and "A" kits are \$15.50 each. If funds were available, this would be a way to encourage students to have an interest in geology or paleontology.

### **Assessment Suggestion**

Assess the students' fully-prepared display of the fossil fish specimen.

### **Additional Resources**

See attached resources list.

### **Homework & Family Connections**

Give the Ulrich Fish Fossil Gallery information to parents and students.

## **Additional Resources**

### **Books**

Kappele, William A.; *Rockhounding Utah, A Falcon Guide*; Falcon Press Publishing Co., Inc.; Helena, Montana, 1996. ISBN 1-56044-446-0  
(A good source for fossil sites in Utah where amateur fossil hunters may legally collect fossils.)

McFall, Russell P. and Wollin, Jay C.; *Fossils for Amateurs, Revised Edition*, Van Nostrand Reinhold Co., New York, N.Y., 1983. ISBN 0-442-26350-3

Parker, Steve; *Dinosaurs and How They Lived*, Dorling Kindersley Inc., New York, New York, 1991. ISBN 1-879431-13-0

*Visual Dictionary of Dinosaurs, The*; Dorling Kindersley Inc., New York, New York, 1993. ISBN 1-56458-188-8

*Visual Dictionary of Prehistoric Life, The*; DK Publishing Inc., New York, New York, 1995. ISBN 1-56458-859-9

Walker, Cyril and Ward, David; *Fossils; An Eyewitness Handbooks*; Dorling Kindersley Inc.; New York, New York, 1992. ISBN 1-56458-071-7  
(A personal favorite for easy to understand information about fossils and how they were formed.)

### **Internet Information Sources:**

I did a search on the internet for “Maps Utah Fossil Sites” and found 828 web sites that contained information about Fossils. I have only looked at about 50 of them so far.

Some sites you may be interested in viewing are:

<http://www.threedee.com/u-dig/> This will give you information about a private fossil quarry west of Delta where for a small fee you may dig for Trilobite fossils and keep what you find.

<http://utahoutdoors.com/pages/dinowalkway.htm> Provides information about the Johnson Farm Dinosaur walkway near St. George where dinosaur tracks have been recently found.

<http://www.desertusa.com/cldqut/cldquarry.html> Provides information about the Cleveland-Lloyd Dinosaur Quarry in Emery County, Utah.