

Teacher Notes
Etch-a-Sketch Environments
 Exploration

Lab setup:	none	easy	<u>moderate</u>	difficult
Reasoning level:	easy	<u>moderate</u>	difficult	
Time required:	20-40 minutes	<u>40-60 minutes</u>	60-90 minutes	
Process skills:	<u>observing</u>	<u>inferring</u>	<u>predicting</u>	<u>classifying</u>

Objectives: The student will recognize the “clues” of a real fossil that can be used to infer information about past environments, biological adaptations, diet, locomotion, and today’s living relatives.

National Science Education Standards:

- Content Standards: Earth & Space Science: Earth’s history
- Life Science: Interdependence of organisms
- Structure and function in living systems
- Inquiry Standards: Abilities necessary to do scientific inquiry,
- History and Nature of Science: Historical perspective
- Unifying Concepts and Processes: Systems, orders, and organization

Materials: Specimens provided by the teacher may include fossils of a specific time period such as Devonian (brachiopods, gastropods, crinoids, clams, bryozoa, and coral) or from the same type of environment (forest, swamp, ocean, etc). The teacher may ask students to bring fossils from home or use other small objects (seashells). Other materials include pencils or colored pencils, notebook paper, and drawing paper.

Teaching Strategies:

Provide groups (3-4 students) with various types of fossils. Students should closely observe each fossil and discuss the characteristics of each. Once observations have been made and recorded, you may want to break students into groups of two to list their fossils’ characteristics and infer possible environments in which they lived. Using these characteristics, students will create a sketch accompanied with descriptions of the inferred environments.

Sample Responses to Go Figure:

1. Student responses will vary, but an example might be that fossils with fins would indicate a marine environment. Sharp teeth would be indicative of a predator.
2. A shelled fossil could be associated with modern shell creatures, such as clams. Fins could be associated with fish. Plant fossils could be associated with modern plants that look similar (fern leaves to modern ferns, branches to modern trees).
3. Student responses will vary. Ferns could grow in both swampy and forest type environments. Fossils of insects could be from a variety of environments. Not all life forms were restricted to only one type of environment and may have appeared in many different environments. Two different groups could produce two different environments using the same collection of fossils.

4. Student responses will vary; possible examples are the predator-prey relationship between two organisms, or plants as a food source for herbivores.

Internet Connection:

Suggested keywords to find sites with related information: fossils, archeology, paleontology, earth history.