

Lesson Plan

Discovering Sedimentary Environments

This lesson was created to address two problems with traditional hand sample identification labs: students often fail to connect the sedimentary rocks with the environment of deposition and they are not engaged or interested in the subject so they fail to learn the material.

Goals of the lesson:

- Make hand sample identification engaging and effective
- Help students connect depositional environments to the rocks representing them
- Make science an active process
 - Introduce students to observational science

Important Principles:

- Origin and identification of sedimentary rocks
- Sedimentary rocks record clues to the environment of deposition
- Principle of Uniformitarianism

Suggestions for:

Equipment:

- Hand lens
- Field book
- Grain size chart
- Acid bottle (optional)

Depositional Environments:

- Fluvial (river, stream)
- Beach
- Lacustrine (lake)
- Reef
- Marine shoal
- Lagoon

Procedure:

1. Determine the number of stations for the lab. This will be based on the number of students in the class, group size, and the number of rocks/environments the students will be expected to learn.
2. There are pictures of common sedimentary environments on this CD. A good source for more pictures is online at: <http://www.pics4learning.com/> All of these images are copyright free for educators.
3. Arrange the pictures into stations with rocks that could be formed in those environments. Fossils can be included with environments to provide more information about the paleoenvironment.
4. All handouts for the lab are included on this CD and can be easily modified to fit each lab.
5. When introducing the lab to students stress the need for good observations and relate that this lab follows the procedures that geologists will actually use in the field to identify the rocks and the environments that formed them.
6. When reviewing the lab reinforce the concept that modern environments give geologist insight about the past. This is the concept of **uniformitarianism**: the present is the key the past.
7. There are questions in the review presentation to go over with the students and there are basic quiz questions included on this CD.