



Subject Area(s) Science and Technology

Lesson Title Modeling a stream

Grade Level 6 (5-6)

Lesson # 1 of 1

Lesson Dependency

Time required Two 60 minute sessions

Summary

The earth's surface is about 70% covered with water, as a result it is essential that the class understand how water is used to change the surface of the earth. This lesson will also touch on modeling, and how models can be used to solve large scale real world problems or answer large scale questions.

Engineering Connection

Engineers often use models to answer question that would be almost impossible to answer in a real world situation such as investigating how installing a dam on a waterway will affect its flow. They could not possible build a dam and then test it, that would be a waste of time and money, if they used a model of the waterway they were investigating, it would be both cheaper and more efficient.

Keywords:

Educational Standards

Science: • Science: A.1, A.2, E.8, F.3, F.4, F.5, G.1, G.3, E.2, E.1

Pre-Requisite Knowledge

A prerequisite for this lesson is a limited knowledge of the scientific method.

Learning Objectives

Students will be expected to:

- Use the scientific method to develop and analyze a problem
- Describe how models are used to solve problems.
- Explain how water can change the earth's surface.
- Describe the different parts of a stream
- Describe erosion and deposition.

Introduction / Motivation

Because of the fact the earth's surface is about 70% covered with water, I believe it is essential for my class to understand how water is used to change the surface of the earth. To be more specific, this lesson will focus primarily on erosion and deposition.

I would also like the students to identify how models are used to solve problems, in this case the models will be stream tables. The central problem I would pose to my students is to be able to identify and explain the formation of erosional and depositional landforms found in every day life. This lesson should be used with the stream table activity. Where groups of students can be given various problems to investigate using the stream table.

Lesson Background & Concepts for Teachers

The teacher should be familiar with what erosion is and what fluvial erosion is. Erosion can be defined by saying that as water in a stream moves along it is constantly picking up sediments for the bottom and sides of the channel. All different sized particles are eroded, small particles are picked up and carried while large particles roll along the bottom of the channel. So in other words, fluvial erosion is the transport of sediments via water.

Vocabulary / Definitions

Word	Definition
Erosion	Erosion is displacement of solids (sediment, soil, mud, rock and other particles) usually by the agents of currents such as, wind or water.
Deposition	Where transported particles from erosion settle on to a surface.
Stream Table	A small scale model of a stream network.
Model	A preliminary work used to finalize a final product.

Associated Activities

Stream Table

Lesson Closure

The lesson can be closed by going over some common misconceptions such as thinking that erosion and deposition are the same, or that wind is the greatest force on earth.

Assessment

To assess the lesson the teacher should have students get into groups and report to the class on various aspects of a stream system.

Pre-Lesson Assessment

As a warm-up and to assess prior knowledge, hand out 4 x 6 index cards, one per student, and ask students to each describe, in writing or as a diagram or drawing, an example of a stream system and have them explain erosion and deposition.

Owner: Rodney Johnson GK 12 Fellowship Program Drexel University

Contributors: Susan Slade