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 everyday 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 particle are picked up and carried while large particle roll along the bottom of the channel. So in other words, fluvial erosion is the transport of sediments via water.
Vocabulary / Definitions

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

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