

STREAM TABLES ACTIVITY 2

Introduction:

Most of us have seen streams or rivers. When we're walking or driving, we cross them by using bridges. There are times when it seems we have to cross a stream several times to get where we want to go. The paths rivers and streams follow can vary, and their paths are dependent on a number of factors. One of those is the steepness of the terrain. Most of us would rather cross a stream where it is less steep. However, there are times when we seek steep streams for reasons such as placing hydroelectric power plants or locating places to enjoy some white water boating. In this activity, you will explore how the steepness of streams affect their paths and identify some of the factors that determine what that path looks like.

Objectives: Upon completion of this activity, the student should be able to . . .

1. Identify at least two types of stream paths
2. Name at least three factors that affect the path a stream takes
3. Describe the effects of each of the three factors in objective #2 on the type of path a stream makes

IL State Standards: The IL State Standards addressed by this activity are . . .

- 12.E.3a – Analyze and explain large-scale dynamic forces, events and processes that affect the earth's land, water, and atmospheric systems.
- 13.B.3d – Analyze the interaction of resource acquisition, technological development and ecosystem impact

Materials:

- | | |
|---|--------------------------------------|
| 1 Wallpaper tray or square dish pan | 1 Gallon of fine sand |
| 2 Wood blocks same size | 1 Long wood block for smoothing sand |
| 3 One-gallon buckets | 1 Plastic cup for dipping |
| 1 Tube, narrow and flexible, 60 cm long | 1 Paraffin or plastic block |
| 1 Acetate or plastic dam | 6 Cotton swabs |
| 1 Box food coloring | Paper towels and water |

Procedures:

- A. For this activity, you will set up the stream table the same way you did for Activity 1, but this time you will do it with wood blocks placed beneath one end of the tray. This will make the slope of the sand more steep. You may need to smooth the sand with an extra wood block. Again, record your observations in Part A of the Data Sheet on the next page.

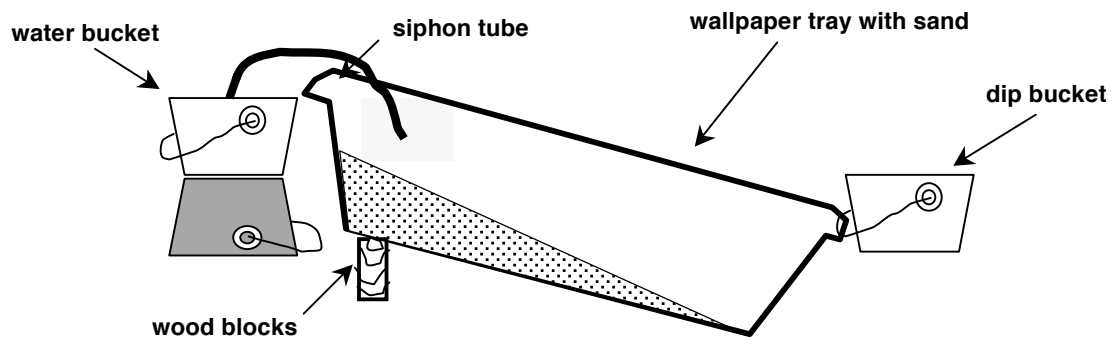


Figure 1

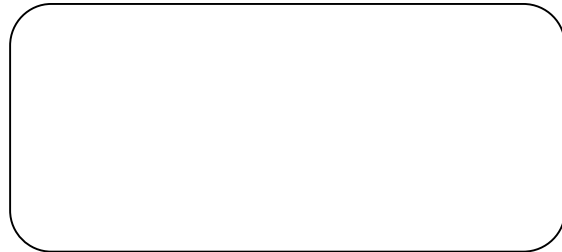
- B. Stop the water flow for a moment. Use your finger or the board to create a curve, or meander, in the sand. Then restart the water flow. Observe what effect the stream slope has on the shape of the stream path. Also, be careful to observe the valley that is produced by the stream. Draw your observations in Part B of the Data Sheet below.

Data Sheet

Activity #2: “Steep tray”

Part A Observations:

Draw the stream path:



Data Sheet

Activity #2: “Steep tray”

Part B Observations:

Draw the stream path:



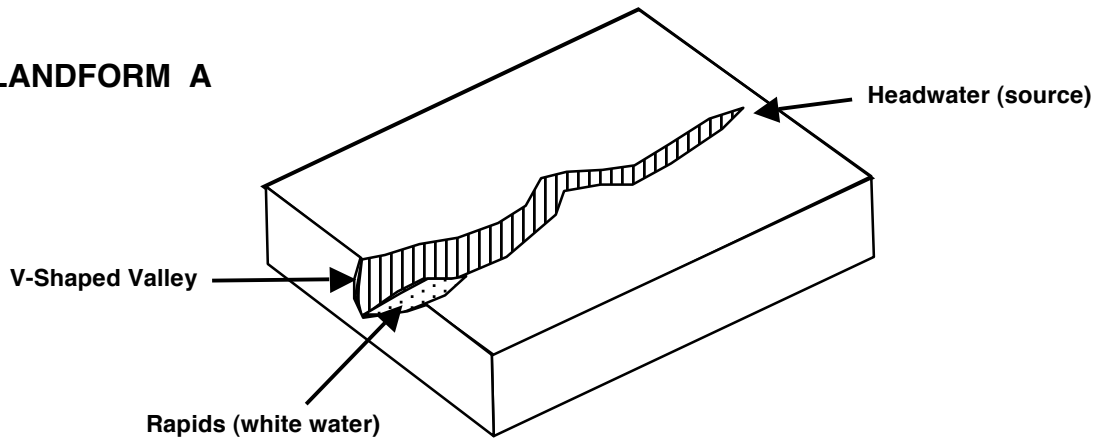
Questions:

1. How does increasing the slope, or steepness, or a stream affect the path it makes?
2. Sometimes, the amount of water moving in a stream has an effect similar to that of increasing the slope of a stream. If you could double the amount of water flowing through the tray in the First Run, what do you think the stream path would look like? Explain why you think so.
3. Compare the shape of the valley (such as its cross-section) formed in this activity with the shape of the valley formed in Activity 1.
 - a. What are the similarities between the two valleys?
 - b. What are the differences between the two valleys?
4. Look at the page of “Geologic Landforms” on the next page.
 - a. For streams flowing like the one in Activity 1, which geologic feature is most likely the one formed? Explain why you think so.
 - b. For streams flowing like the one in Activity 2, which geologic feature is most likely the one formed? Explain why you think so.

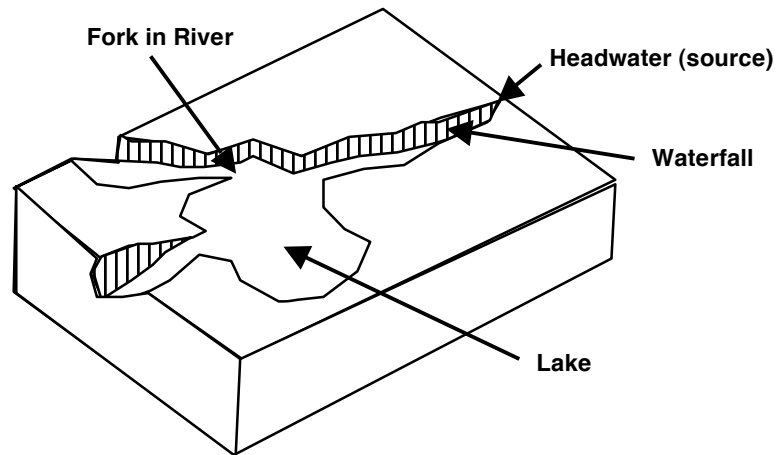
Resource: Great Exploration in Math and Science. (1989). *River cutters*. Berkeley, CA: Lawrence Hall of Science, California State Board of Regents.

GEOLOGIC LANDFORMS

LANDFORM A



LANDFORM B



LANDFORM C

