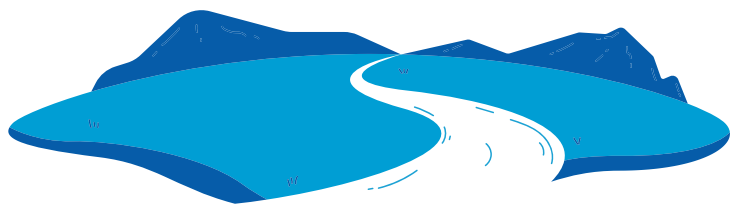


ACTIVITY 6: ENGINEER A STREAM TABLE



In this activity, students will physically model a stream by engineering a stream table using household materials in order to visualize and understand the processes of erosion, deposition, and the formation of landscapes.

Materials:

- Aluminum half-sheet baking trays
- Sand
- Watering can or 1-qt measuring cup
- Small rocks/pebbles
- Poppy seeds
- Food coloring
- Plastic or wooden blocks
- Fresh sprigs of herbs (rosemary, mint, etc.)

First, inform students that they will be creating a model stream to simulate how the processes of erosion and deposition take place. Have them partner up and obtain the necessary materials. Before they begin building their stream, have them sketch out what they want their stream design to be like. Encourage them to place flattened balls of aluminum foil at the bottom of the aluminum tray to simulate landforms, put blocks along the shoreline to represent homes and businesses, and be sure they include bends (sharp or wide turns) in their streams and make some segments wider or narrower. For comparison, one group can test a straight-line design with no bends at all.

Next, have students build their model streams in the trays according to their sketches. They should have a thick layer of materials (e.g., sand, pebbles, seeds) mixed together and evenly spread out in the tray to make up the landscape—including over any landforms. Once the materials have been added, the stream can be carved out by hand, according to their sketch, by separating the materials to the side and leaving behind a dip that goes down almost to the bottom of the material layer.

After the stream is dug out, they can place their blocks in different spots to simulate the buildings along the shoreline. They can add sprigs of herbs to simulate the plants along the stream.

Then, have students fill their watering can or measuring cup with water and add some food coloring. Try to use a color different than any of the materials in the tray. Students should pour water slowly into one end of the stream and observe what happens. Make sure they pour from a low high so there isn't unnecessary splatter of material. They should continue pouring water slowly until the entire stream is almost full of water to the top—but not all the way. As the water continues to be added, have them record their findings and discuss with their partners what they observe.

Last, have students travel around to other groups to see their streams and record observations, noting any differences in how one stream looked and performed as compared to another.

Facilitate a discussion among the class about their model streams and the differences they observed from one stream to another. Be sure to draw students' attention to the erosion of some material that got carried away in the stream by the water and how that material got deposited elsewhere. Note any trends or patterns in erosion and deposition. Help them to focus on the differences that were connected with various aspects of the streams, including bends, width, and landforms. Did they find water (based on the food coloring) appear in any unexpected places? Encourage them to describe what impact there was, if any, on buildings or plants along the shoreline of the stream—did the placement of buildings or plants make a difference? Wrap up the discussion by focusing on the impact of human activities, such as building construction or pollution, on the stream, relating them to real-world scenarios of stream erosion and the formation of landforms.