MODELING WITH STREAM TABLES

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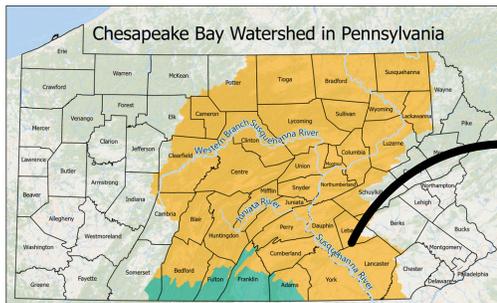

Chesapeake Bay Watershed in Pennsylvania
Photo from the Commonwealth of Pennsylvania, https://www.pa.gov/agencies/dep/programs-and-services/water/bwrnsm/bay-restoration/healthy-waters-pa.html

The **Chesapeake Bay Watershed** in Pennsylvania is the area where **rivers** and **streams** flow into the Chesapeake Bay, the largest estuary in the United States. Even though Pennsylvania doesn't touch the bay, its waterways—like the **Susquehanna River** and the **Potomac River Basin**—carry fresh water that eventually reaches the Atlantic Ocean. The watershed covers about half of Pennsylvania, including farms, forests, towns, and cities.
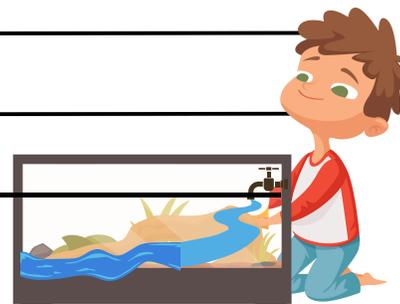
Scientists study the Chesapeake Bay Watershed by collecting data from different parts of the region, such as rivers, streams, and wetlands. Since the watershed is so large, they focus on smaller areas to understand water quality, pollution, and erosion. To see the bigger picture, scientists also use models to predict how changes in one area might affect the whole bay. These tools help them understand patterns, test solutions, and protect the watershed for the future!

Directions: Today you and your classmates will take on the role of research scientists! Using a stream table, you will model different water pathway scenarios that may affect the environment in the table. Use the following boxes (1-3) to draw and write your observations.
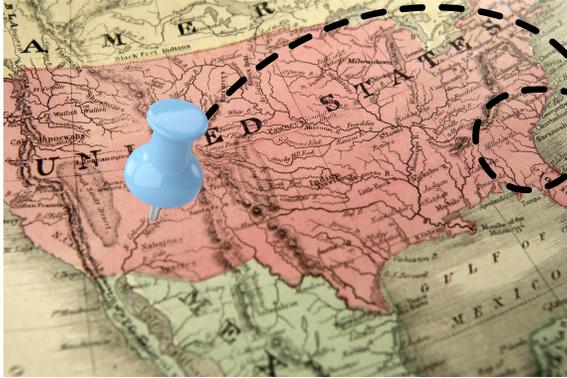
Scenario 1: *Gentle Water Flow* – Draw what happens to the sand and write observations about how the water moves and changes the stream.

Gentle Water Flow

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MODELING WITH STREAM TABLES

Scenario 2: *Fast Water Flow* – Increase the water flow to a model a rain storm or flooding. Illustrate the differences and record observations about how the streambed changes.

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Fast Water Flow

Scenario 3: *Adding Obstacles* – Place rocks or plants in the stream's path. Draw how the water moves and note any changes in the sand's formation.

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Adding Obstacles

MODELING WITH STREAM TABLES

GRAND CANYON

The **Grand Canyon** is one of the most famous natural wonders in the world! It is located in the state of Arizona in the United States. This giant canyon is about 6 million years old, but some of the rocks at the bottom are nearly 2 billion years old! The Grand Canyon was formed by the Colorado River slowly cutting through rock over millions of years. This process is called **erosion**, which happens when water, wind, or ice wear away rock and soil. The flowing river carried away small pieces of rock bit by bit, making the canyon deeper and wider over time. Wind, rain, and ice also helped shape its deep valleys and steep cliffs. Today, the Grand Canyon is about 277 miles long, up to 18 miles wide, and over a mile deep! Many people visit to see its breathtaking views, hike its trails, and learn about its history.

Follow-Up Question:

How does the stream table activity help you understand how the Grand Canyon was formed? Write 4-5 sentences explaining how slow and fast water change the land and how obstacles affect the flow of water.

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