

Topography Lab

Background Information

Topography refers to the shape and features of the Earth's surface, including mountains, valleys, hills, and plateaus. Scientists use topographic maps to represent three-dimensional landforms on flat, two-dimensional paper. These maps use contour lines to show elevation and shape. Each contour line connects points of equal elevation, helping us visualize the rise and fall of the land without seeing it in person.

Objective

- Understand how contour lines represent elevation and interpret and create topographic maps.
- Apply skills in observation, measurement, and mapping.

Develop a Hypothesis

Since contour lines show areas of equal elevation on a flat map, how do you predict the contour lines will look for tall, steep landforms compared to short, flat landforms? *Write your hypothesis as a complete sentence.*

If . . . _____
_____,
then . . . _____
_____.

Materials

- Modeling clay or playdough
- Plastic knife or string for slicing layers
- Ruler or measuring tool
- Cardstock or cardboard base
- White paper for map drawing
- Colored pencils or fine-tip markers

Instructions

Part 1: Build Your Landform

1. Each group sculpts a 3D landform (e.g., mountain, valley, plateau, hill with a depression) using modeling clay on top of a cardstock or cardboard base.

Part 2: Create the Topographic Map

2. Use a plastic knife or string to slice horizontal layers at regular intervals (e.g., every 1 cm of height).
3. Carefully trace the outline of each layer onto paper to form contour lines.
4. **Label** elevations and cardinal directions.
5. **Add** a title, scale, north arrow, and legend (with contour interval explained).

Topography Lab Homework Questions

Write your responses in complete sentences.

1. Explain how the spacing of contour lines on a topographic map shows the steepness of a landform.
2. Describe one real-life situation where knowing how to read a topographic map would be important.
3. If you were to add a river or stream to your landform, how would you show it on your topographic map?