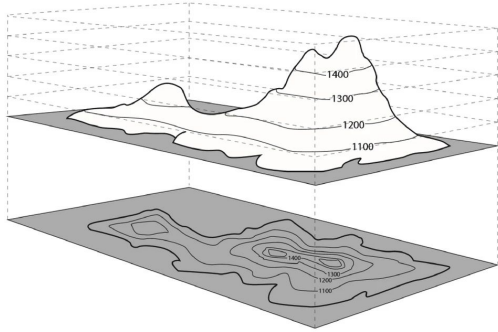


# ELEVATION MAGNETS

Experiment with color scales as you create an elevation model of your favorite place in space!

More at: [carbondalepubliclibrary.org/topology](http://carbondalepubliclibrary.org/topology)



## WHAT IS TOPOGRAPHY?

TOPOGRAPHY is the study of the forms and features of land surfaces. It is a field of geoscience and planetary science that studies not only natural features like mountains but also artificial features like man-made structures. Topography studies not only the surfaces above sea level (hypsometry) but also underwater landscapes (bathymetry).

Much of topography involves the recording and representation of the three-dimensional quality of a surface, called relief or terrain. Such relief mapping commonly uses contour lines, which connect points of equal elevation. Humanity's new technologies, such as the remote sensing method LIDAR and new digital mapping softwares that utilize GIS (geographic information system), have exploded the amount of data available as well as the possibilities for representing that data. Many relief maps now take the form of a DEM (digital elevation model), a 3D computer graphics representation of elevation data. DEMs are used for planets, moons, and asteroids. DEMs commonly use a color scale to visually represent differences in elevation.

## SUPPLIES & TOOLS:

- Plastic bottle cap
- Adhesive foam sheets
- Magnet
- Scissors

## HOW TO MAKE YOUR OWN 3D ELEVATION MODEL:

1. **Pick your place:** Where do you want to make a map of? Visit this week's webpage for data sources! You'll want to pick a topographically interesting place.
2. **Plan your elevation color scale:** Consider the full spectrum of elevation of your selected location. How many and what colors will you use to represent differences in terrain? Is your scale easy to interpret? Experiment with your layers before cutting, adhering, and placing them in the cap.
3. **Cut & place your foam:** Cut the foam sheets and place them on top of one another. Place the lowest elevation layer first and work your way up. Some tips:
  - a. First, use the cap as a template on all layers; trace its outline onto the foams & cut a circle out of each layer. Then cut each layer further as needed.
  - b. For extra lift, place an extra piece of white foam at the bottom of the cap.
  - c. Need holes/craters? Use a pencil to pierce through the foam.
  - d. You can further shape your foam peaks with scissors after placing.
4. Take the paper backing off the magnet and adhere to the back of the bottle cap.

