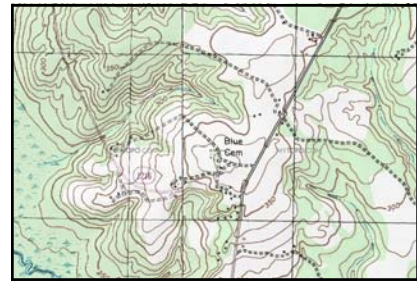


# Making a Topo Map

## Lesson Suggestions

Making a topo map from clay is a great way for students to develop an understanding of what the lines on topo maps represent. A co-worker found this activity online at NASA Space Place. She tried it and recommended it to me. I added a variation at the end and decided to write-up the lesson to share with others.



**Basic Online Directions:** [How to Make a Topo Map](http://spaceplace.nasa.gov/en/kids/srtm_make1a.shtml)  
[http://spaceplace.nasa.gov/en/kids/srtm\\_make1a.shtml](http://spaceplace.nasa.gov/en/kids/srtm_make1a.shtml)

### Preparation:

- If you use the modeling clay recipe that comes with the directions, you'll need one batch of clay for each team or pair. Plan to make it yourself or send home the Modeling Clay letter a week in advance.
- Read through the directions online so you'll know what to do. Hint: Test out this lesson yourself before using it with your students. You'll be able to give much better directions. It seems confusing, but the directions makes sense as you work through the steps. You may want to save your model to use as an example for the class.
- Gather all materials in advance. You can use thin wire instead of dental floss for cutting slices in the dough.

### Supplemental Directions

1. Distribute a lump of dough to each team or pair. Have them place the dough on a paper plate or tray. Show the online directions to the class and review them together. Then follow them step-by-step as a class.
2. Ask them to create a lopsided mountain as shown on the directions and make sure they poke the two holes all the way through all four layers.
3. When it's time to cut the dough into slices and trace it, make sure students know that they must carefully transfer the slices to the paper without rotating them. It might help to draw a North arrow ↑ on each slice and a North arrow on the paper to keep everything oriented properly. As they trace each line, point out that they are creating contour lines that show each layer's elevation.
4. After everyone makes their topo maps, collect all the maps and all the mountains. Assign each mountain a number and each map a letter. Have students try to match each map to its corresponding mountain. To do this, they'll have to look at the shapes of the contours and the distances between the contour lines. Hopefully they'll notice that the closer the lines, the steeper the slope.
5. Assessment Idea - After the lesson is over, create your own mountain from a lump of extra clay. Make one side extremely steep and create a gradual slope on the other side. Ask students to draw what they think the topo map would look like for that mountain. Have them write about what they learned from the lesson including what the distances between the lines mean.

