**Lab: Topographic Maps and Modeling 3-D Land Features**

Purpose: To correlate topographic maps to the 3-D land

features they represent.

Materials: Play-Doh, Fishing line, Ruler

Procedure:

1. Create an asymmetrical mountain with smooth sides from the Play-Doh. Be sure there is one steep slope and one gentle slope.

2. Place the mountain on the paper provided. Draw a vertical line down one side and onto the paper. This side will be “North” and used later on to line up layers of the mountain.

3. Trace around the base of the mountain. This is your 1st contour line.

4. Mark 1 cm up the mountain from the bottom of

on all sides. Wrap the dental floss around the mountain at the 1cm marks (like a belt). Cross the ends of the floss and pull the ends slowly, slicing through the clay.

5. Remove the bottom slice of the mountain (keep it for later), replace the upper portion in the same spot, lining up the “North” side on the mountain to the “North” line drawn on the paper. It should fit inside the 1st contour line

6. Trace the replaced upper mountain on the paper. Now, there should be two contour lines, one inside the other.

7. Repeat steps 4-6, 1 cm at a time, until the mountain is less than 1 cm high. When finished, you should have several concentric loops inside each other. You just created a topographic map of your mountain! List yourself as a cartographer below.

8. Restack your mountain so that it looks like it did prior to the first slicing, using “North” to line up all the pieces. Place your mountain next to your map and compare the two.

Names\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Analysis Questions:

1. Compare the steepest side of the mountain to its portion of the topographic map and do the same for the gentlest slope.
   1. What do you notice about the spacing of the contour lines versus the steepness of the slopes?
2. Contour intervals:
   1. Define “contour interval”.
   2. What is the contour interval for your map?
3. If the contour interval for you map was 1000m, what is the approximate highest elevation of the mountain?
4. HONORS ONLY: If the contour interval for you map was 250m, what is the approximate highest elevation of the mountain?