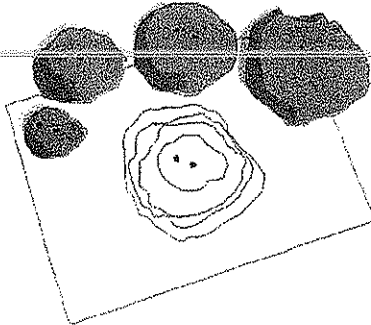
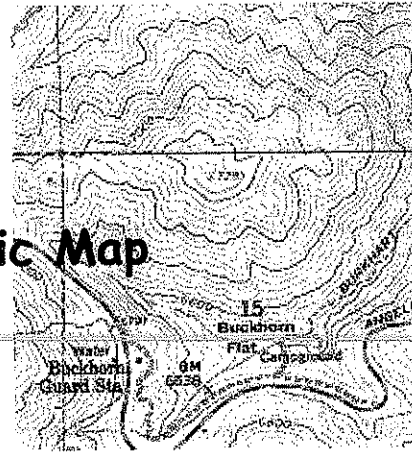
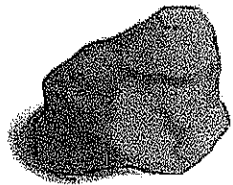


Name \_\_\_\_\_

## Making a Topographic Map



### Procedure One:

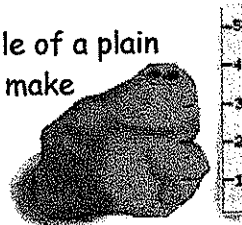


1. Place the dough on your desk and shape it to form an island mountain that is at least 5 centimeters high with one side obviously steeper than the rest. Your mountain can be lopsided but it must be flat on the bottom (Make sure that no part of your mountain hangs over a lower part.)

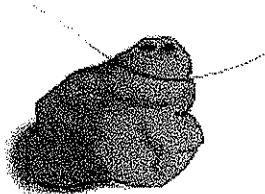
2. Using a pencil, carve a stream valley into the west side of your island. It should start at the top of the island and flow towards the ocean. The stream depth should be about one centimeter.

3. Have your teacher check to make sure that your landform is acceptable before going on.

4. Remove the landform from your desk and place it in the middle of a plain white piece of paper. Stand the ruler beside your landform and make a mark on your dough for every centimeter in height.



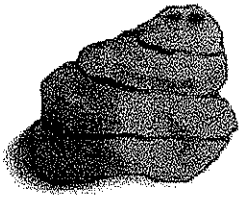
5. With your pencil, trace the outside of your landform. You have just made a contour line of your mountain. Label this line 0 cm.



6a. Using the dental floss, slice evenly through your mountain at the next mark (the mark at 1 cm.) up on your mountain. Stretch the dental floss until it is taut, wrapping the ends around your fingers so you have a good grip on it. Hold the floss as horizontal (level with the table or floor as you can).

b. *Carefully*, so as to not alter the shape, peel away the upper part of your Mountain.

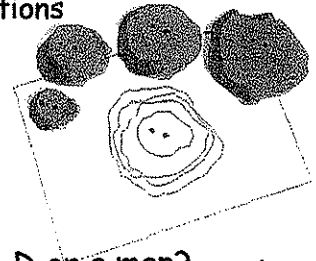
c. Remove the lowest portion you just traced from the paper. Replace the upper portion exactly where it was on the paper and trace the outline of the base of this piece. Label the contour line as 1 cm.



7. Continue step 5 until you reach the top of your mountain. Rebuild your mountain next to your paper and compare your landform to the topographic map you just made. Note the direction the contour lines point when they cross the stream valley. Note how you can tell which side of your landform has the steepest slope.

8. Using colored pencils, color in each elevation level of your island a different color

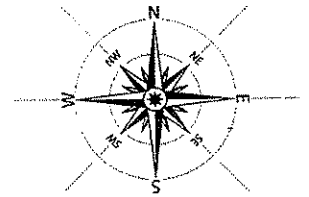
9. Place the play-dough back in the container. Answer the conclusion questions and attach your map to the lab.



**Conclusion Questions: Answer all in complete sentences**

1. How does a topographic map allow you to view a 3-D landform in 2-D on a map?
2. What is the contour interval of your map? (What is the change in elevation between two adjacent contour lines?)
3. What do widely spaced contour lines indicate about the shape of the land?
4. What pattern do contour lines make if there is a steep slope?
5. What pattern does a stream make on a contour map?
6. How are topographic maps useful for a person taking a hike up a mountain?

## Procedure Two: Drawing a topographic map of an island



**Step 1:** Label a white piece of paper with the following information:  
Name and Date  
Name of your Island  
Draw a compass rose for direction

**Step 2:** Create an island with 8 contour lines and a river. BEFORE you start, plan on putting a steep side in the east and a river in the west. Don't forget in order to show the steep slopes the contour lines need to be close together. And don't forget in order to show a river, the contour lines bend upstream.

**Step 3:** Below the island label "contour interval = 20 meters" and below that write the scale 1 centimeter = 1 kilometer.

**Step 4:** Label the first contour line 0 meters and then finish labeling the rest.

**Step 5:** Put a benchmark at the top of the mountain using the symbol a triangle and label it 144 meters.

**Step 6:** Check and make sure the river looks good, the lines bend nicely upstream and let's name it "Rapid River"

**Step 7:** Since this is an island, label the ocean around it "ocean"

**Step 8:** Hand it in stapled to the rest of the lab.

