Topographic Map Play Dough Lab

Problem:

How to make a topographic map out of Play Dough

Materials:

 Fishing line

 Play Dough

 Computer paper

Procedure:

Part I

1) Shape the Play Dough into a mountain. You are cutting horizontally

so measure your height and make it easily divisible by four

(4 or 8 cm perhaps). Draw the **PROFILE** (side view) of your shape.

2) Cut your mountain **HORIZONTALLY** into four pieces of equal thickness (must be measured and marked on opposite sides) using the fishing line.

**WARNING: Try not to mash up your pieces as you will need to rebuild your SAME mountain for part II!**

3) Trace the largest cut on the printer paper, then remove it from the paper. Place the next largest cut in the center of your first tracing and trace it there. Do this for all four cuts, each within the tracing of the last.

4) Label the first traced line ’10 m’ and the smallest one in the center ’100 m’.

**Part II Instructions**

1) Rebuild your mountain just as it was at the beginning of part I.

2) Water erosion has changed the way your mountain looks. With your finger, carve out a channel in your mountain to show the effect of the erosion. (Try to find a spot that looks like water could have carved a channel. Do not get rid of the deposits, they just get added to the bottom of your mountain!)

3) Use the fishing line to cut your mountain in four equal horizontal slices again and trace them to create a new topographic map, just as you did in Part I.

**Part I conclusions:**

1. What happens to your elevation if you walk around the first section you traced, staying on the contour line?

2. How much does your elevation change when you go to the next contour line you traced? Higher or lower?

This answer is the contour interval of your topographic map. How much your elevation changes for every contour line you cross.

5. How is the top of your model represented on your topographic map? How is it different from the real shape of your Play Doh! Mountain?

**Part II Instructions (again! Do not do a third map!)**

1) Rebuild your mountain just as it was at the beginning of part I.

2) Water erosion has changed the way your mountain looks. With your finger, carve out a channel in your mountain to show the effect of the erosion. (Try to find a spot that looks like water could have carved a channel. Do not get rid of the deposits, they just get added to the bottom of your mountain!)

3) Use the fishing line to cut your mountain in four equal horizontal slices again and trace them to create a new topographic map, just as you did in Part I.

**Part II Conclusions**:

1. What was the biggest difference between your map of Part I and Part II?

2. How does erosion affect mountain ranges?

3. Predict how your mountain would change over time from weathering.

4. Predict how this weathering would change your topographic map.

5. Locate the steepest side of your mountain. Find this same side on your topographic map. How is the steep slope shown on your topographic map?