**Real Life Contour Mapping**

**Purposes**

1. You will understand what a contour line means on a map and on the ground.
2. You will be able to measure the change in elevation on a small plot of ground, so that contour lines can be located at even vertical distances.
3. You will create a contour map of an area.

**Pre-Lab Questions:**

1. What is a contour line?
2. When contour lines are located very close together what is the terrain like?
3. What are the 2 main rules of creating contour lines?

**Jobs**

1. Level Operator
2. Perimeter Maker
3. Recorder
4. Measurement Maker (x2)

**Materials**

1. Yard Stick
2. String/Ribbon
3. 4 Plastic Knives
4. Level
5. Small Ruler
6. 3 Forks

**Procedure:**

1. Pick up your supplies.
2. Stake out with string a 6' x 6' plot of uneven land.



1. Determine the total change in elevation within your plot, from its highest point to its lowest point, in inches. (*To measure this change in elevation you must place one end of a bubble stick level at the high point with the other end pointing towards the low point. Raise or lower the free end of the bubble stick until the bubble shows the stick is level*.) With the yardstick, measure the vertical distance from the free end of the bubble stick to the ground.
2. Measure every foot of terrain in this manner until you reach the low point and add up all of the vertical measurements that you took at the various points. This is your total change in elevation.
3. Divide this elevation change by 4 to determine the contour interval when you build 3 contour lines. (Suppose the change in elevation was 24 inches from high point to low point. If 3 contour lines are needed between the high and low point, you'd divide the 24" by 4 (not 3). The contour interval would be 6 inches. )
4. Now that you have a contour interval, you must locate one point for each contour line that will be the starting point for that line.
5. Place the yardstick at the highest point along the 6ft by 6ft square.
6. Measure down the length of your contour interval and then mark the location with plastic cutlery.
7. A contour line then can be run to the left and to the right of this line using string.
8. Follow the same procedure to locate the beginning points for the other 2 lines.

http://www.math.montana.edu/%7Enmp/materials/ess/mountain_environments/novice/level.gif

Check out your strings:

1. Now it's time to examine your contour lines.
2. Walk about 15-20 feet from your contour lines, and get your eyes at the same level as the string. From that position, the string should appear to be a straight line. It's as though you were standing on one side of a valley looking across the valley at a river which is on the same level as you. The river would appear to be a straight line.
3. Do the three lines that you made should actually look straight, parallel, and equidistant from each other? If they are, you made your contour lines correctly and you are well on your way to becoming a map maker.
4. Try to draw a field map of your plot by drawing an aerial view of your three contour lines as close to scale as possible.

**Conclusion Questions:**

1. Does the contour map you created reflect the terrain you mapped?

\*\*If so, why/how can you tell?\

\*\*If not, what could have possibly affected your results?

1. What job would require you to know how to use contour lines or to be informed about how to read a contour map?
2. When could you use information about contour lines or contour maps in your own life?

**Conclusion:**

1. Restate the purpose (Feel free to summarize and put them in your own words).
2. Relate this lab to what we are covering in class/what we will be covering.
3. How effectively do you believe you mapped out the changes in elevation of your 6ft x6ft plot of land?
4. Describe one source of error that occurred in lab and how it affected your results.