

**LAB: DRAWING TOPOGRAPHIC MAPS AND MAKING 3-D MODELS FROM 2-D MODELS**

by Charles Burrows

**Materials:** pencil, eraser, blank paper, 5 unscratched glass scratch-plates\*\*\*, erasable glass markers

**\*\*\*CAUTION:** Be careful when using the glass scratch-plates. The edges may be very sharp. Notify your teacher if one breaks, or if someone gets injured. Dispose of broken glass as instructed.

**PART ONE: DRAWING TOPOGRAPHIC MAPS (2-D PAPER MODELS)**

First, on separate paper, draw six boxes that are the same size as your glass scratch-plates. (You can trace them.) Number the boxes (1-6) on the outside. Using pencil, draw each of the following six topographic maps within these six boxes. The numbering (contour interval) of the contour lines (what the lines should go by), and the lowest and highest elevations that should be on your maps, are given below.

1. A simple round hill. *CONTOUR INTERVAL = 10m; LOWEST ELEVATION: 300m; HIGHEST ELEVATION: 340m*
2. A hill that is much steeper on one side. *CONTOUR INTERVAL = 20m; LOWEST ELEVATION: 240m; HIGHEST ELEVATION: 320m*
3. A round hill with a deep depression on the top. *CONTOUR INTERVAL = 50m; LOWEST ELEVATION: 550m; HIGHEST ELEVATION: 750m*
4. A hill with a river valley on one side. *CONTOUR INTERVAL = 10m; LOWEST ELEVATION: 410m; HIGHEST ELEVATION: 450m*
5. A "camelback" hill with two humps of equal height. *CONTOUR INTERVAL = 20m; LOWEST ELEVATION: 680m; HIGHEST ELEVATION: 760m*
6. Two oceanic islands on one map, with one twice as tall as the other. *CONTOUR INTERVAL = 100m; LOWEST ELEVATION: 0m; HIGHEST ELEVATION: 400m*

**PART TWO: MAKING 3-D MODELS FROM 2-D MODELS (3-D GLASS MODELS)**

Next, on the unscratched glass scratch-plates, create 3-D models of EACH of the maps you drew, one at a time. Have your teacher initial this paper **after each one**. You do NOT need to number the lines on this model, but pay close attention to the numbers! (If you're using thin glass, try putting one or two blank ones between your layers to make it "pop.") After getting initials for #1, clean the plates and create #2!

<u>3-D GLASS MODEL DESCRIPTION</u>	<u>TEACHER'S INITIALS</u> (when 3-D Model is complete)
1. A simple hill.	
2. A hill that is much steeper on one side.	
3. A hill with a depression on the top.	
4. A hill with a river valley on one side.	
5. A "camelback" hill with two humps of equal height.	
6. Two oceanic islands on one map, with one twice as tall as the other.	

**PART THREE: SUMMARY**

On separate paper, describe, in detail, how you drew each map. Be sure to include the specific details that make each map different from the others. Hand in everything!