

## To Topo Two

### Model a model of a model.



#### Introduction:

Two groups create two separate landform models out of clay (mountains and valleys). Each group creates a two-dimensional model (a topo map) of their landform on a sheet of paper. Topo maps are then switched. Each group then recreates the other group's landform. Then all models are compared.

#### Materials:

Synthetic clay (Plasticine or Play-do)

Paper

Pencil

Two meter sticks (or slates of wood about 1/4" thick)

Strong thin wire (to cut the clay)

#### Assembly:

- 1) Break participants into an even number of groups. Each set of participants will create two clay landform models.
- 2) Each group should be given two fist-sized lumps of clay (One lump to create an original landform model and the second lump to recreate another group's landform model).
- 3) Each group should create a landform from one of the lumps of clay.

The landforms should contain:

- High and low regions such as mountains and valleys.

The Landforms should not contain:

- Too many features (i.e. not more than three mountains)
- Features that are extremely steep or reposed (no 90 degree cliffs or overhanging areas [these feature are rare in nature]).



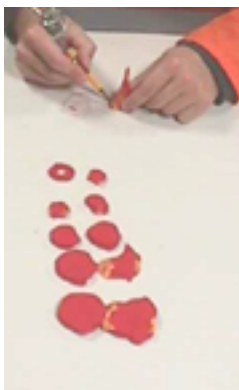
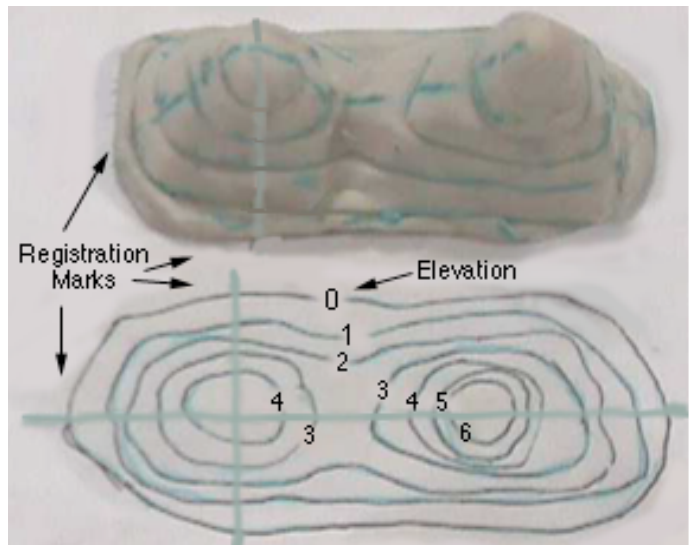
To do and notice:

- 1) Draw registration marks directly on your landform model. These straight lines will help you orient the slices that you will be cutting from your landform. These lines can be drawn anywhere on your model, but a good rule of thumb is to draw a line through the center of a major feature on your model and draw another line perpendicular to that line.



- 2) Lay the clay landforms between the meter sticks.
- 3) Cut the clay into equally thick layers with your piece of wire (Each layer should be as thick as a meter stick). An easy way to do this is to drag the wire across the top of the two meter sticks located on either side of the clay.
- 4) Remove the bottom sliced layer from your landform model. The bottom edge of this layer represents a contour of the same elevation.
- 5) Place this layer on a sheet of paper and trace all edges. Your line/s should curve into a closed loop/s. This is your base contour line.
- 6) Place a zero somewhere on this line (if you made an atoll, you might have two contours loops) and transfer the location of the registration marks.

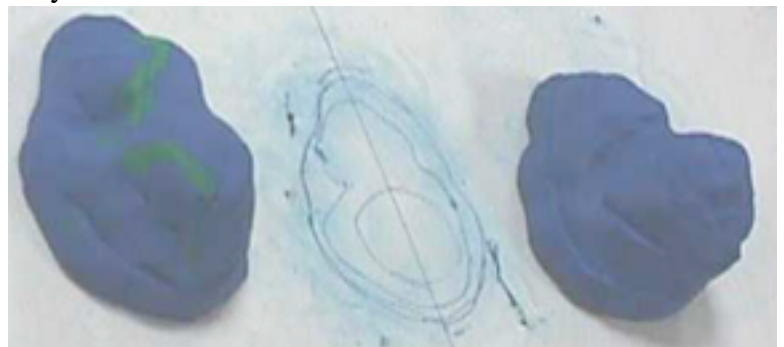
- 7) As you slice subsequent layers, place them on the piece of paper and trace around all edges. Making sure that all registration marks match and that all contours of the same elevation are labeled (Note: two or more mountains will form two or more loops with the same contour elevation).



- 8) Tracing the bottom of each layer makes a "topographic (topo) map" or "equal elevation contour map" of your clay model. Switch your newly made topo map with another group, but don't let them see your landform model.

- 9) When you receive a topo map from another group, your job is to

recreate the other group's landform model.



- 10) Shape layers of clay by using the topo map to determine each layer's edge. Use the ruler as a guide to how thick your layers should be.
- 11) Place the layers on top of each other to make the landform. When done, compare your landform model (the one you just made) to the original (which is in the possession of the group you switched with).

What's going on?:

You made a topographic map. A topographic map is a map that allows one to see three-dimensional objects, like landforms, in two-dimensions. Lines on a topo map indicate elevations or contours.

The topo map you drew was a one to one representation of the clay landform you made. The map below is a 1:100,000 scale map of real landforms in southern Nevada.

