

Name:  
Teacher:

Date:  
Period:

## Constructing a Contour Map Lab #

**Introduction:** A contour (topographic) map shows elevations. Elevation is the height of land above or below sea level. Topographic maps show elevation using contour lines.

**Objective:** You will construct and interpret a contour map.

**Vocabulary:**

Topography-

Contour Line-

Contour Interval-

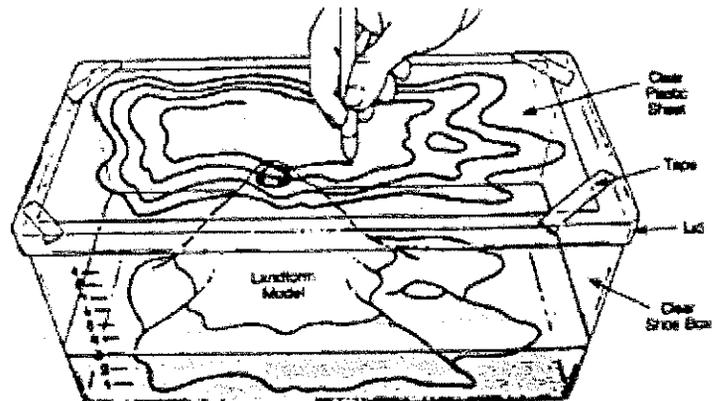
Topographic Profile-

Hachured Contour Lines-

**Procedure:**

### Part A- Constructing a Contour Map

1. Place the plastic volcano inside the shoebox.
2. Tape the plastic overlay to the top of the box lid.
3. Begin filling the shoebox with water, stopping when the water level reaches the 2 centimeter marking. This is sea level which is equal to 0 meters elevation
4. Place the lid on the box and then trace the shoreline onto the plastic overlay.
5. Remove the lid and add water until it reaches the next centimeter marking.



6. Replace the lid and trace the new shoreline.
7. Repeat this procedure for every marking until the entire mountain is covered with water.
8. Trace the contours you've drawn onto white paper.

Part B Labeling your Contour Map

Label each contour line starting with the first line. This line represents the shoreline, and thus is labeled, "0". Continue to label contour lines using a contour interval of 250 meters. The scale on the map is 4 cm = 1 km.

Part C - Profile

1. Orient your paper with the mountain on the left-hand side and draw a straight line lengthwise through the center of the mountain.
2. Label the left end "A" and the right end "B".
3. Construct a topographic profile along line A-B.

Part D - Gradient

1. Calculate the gradient on your map from Point A to the closest rim of the volcano and from Point "B" to the closest rim. For distance use a horizontal scale of 4 cm = 1km. Place your answers in the data tables below. Be sure to correctly label each number.

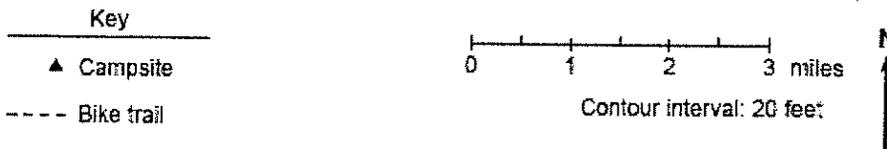
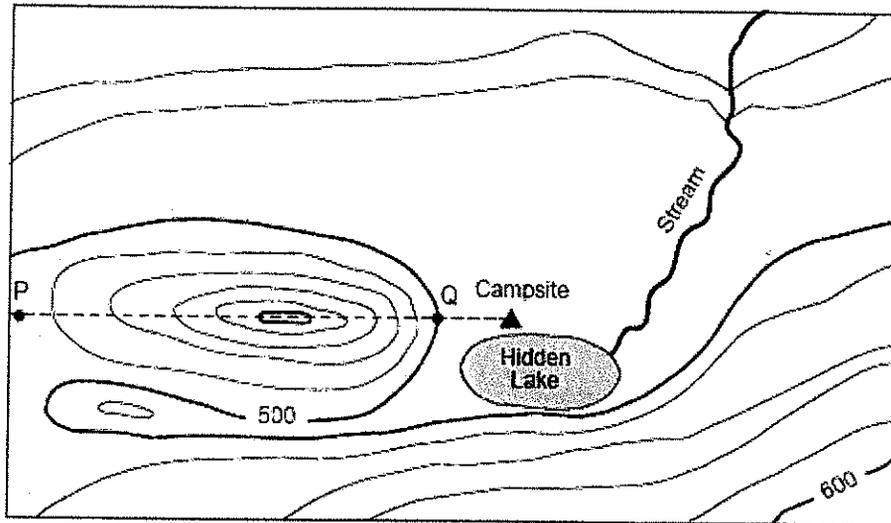
Gradient A to Rim

Difference in Elevation between Point A and Rim	
Distance from Point A to Rim	
Gradient (rounded to the nearest tenth)	

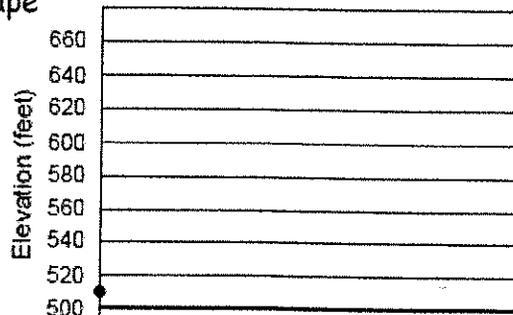
Gradient B to Rim

Difference in Elevation between Point B and Rim	
Distance from Point B to Rim	
Gradient (rounded to the nearest tenth)	

Part E - Contour Map Practice



- 1) What is the contour interval on this map ?
- 2) What is the field value of point Q ?
- 3) What do the concentric circles on the left side of the map indicate?
- 4) In which direction is the Stream flowing?
- 5) What is the maximum elevation of the hill between points P and Q?
- 6) The students decided to move their campsite 1.5 miles to the north, on the map, draw in the location of the new campsite, use a small dark square to indicate the location of the new campsite.
- 7) On the grid below, draw a profile of the landscape along the bicycle trail from point P to point Q, connect the dots to complete the profile. Make sure to include the hilltop in your profile.



## CHALLENGE PART E

*AIM: to draw<sup>a</sup> topographic map for an island using given specifications regarding elevations and surface features.*

### SPECIFICATIONS

**ISLAND : EGO ISLAND**

*This island will be named after you!*

*It is an ocean island. The contour interval for the map you will draw is 20 feet. The highest point on the island is in the south, a peak which is exactly 125 feet high. The south side of this peak is the steepest slope.*

*A second peak, in the northern part of the island, is a volcano, which is 40 feet deep and 105 feet at its summit. A river flows north from the volcano into the ocean.*

*The eastern part of the island is basically flat. An 8-mile, curved road runs over this region from point A to B.*

*The map's scale is 1 inch = 1 mile.*

**Fantasy Island Rubric (each feature is one point)**

Ocean labeled	
Contour Interval 20 feet	
South 125 foot peak at summit	
South side of peak steepest	
North volcano 105 feet at summit	
40 feet volcano depth	
Flat eastern side	
8 mile road, curved A to B	
Compass rose	
Scale: 1 inch = 1 mile	
River flows North	

Total: \_\_\_\_\_