Lesson 8 – Topographic Maps

THE FOLLOWING **VIDEO** HAS BEEN APPROVED FOR
ALL AUDIENCES
BY THE EARTH SCIENCE TEACHERS ASSOCIATION OF AMERICA, INC

THE VIDEO HAS BEEN RATED

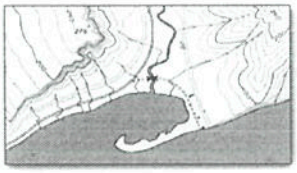
I — INTELIGENT
UNDER 15 REQUIRES TEACHER ASSISTANCE

STRONG EARTH SCIENCE LANGUAGE, DETAILED DIAGRAMS, AND SUPER AWESOMENESS

- I can determine the contour interval
- I can locate the steep & gentle slope on a map
- I can use the gradient formula
- I can determine which way a river is flowing
- I can determine the highest elevation on a map
- I can draw a topographic profile

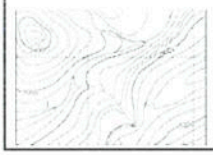
Topographic Maps

- Gives a birds eye view of an area



Contour Lines - isolines that connect points of equal elevation

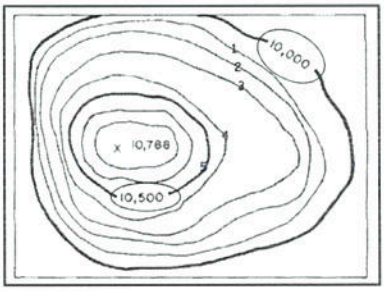
Contour Interval - distance between any two contour lines that are next to each other



Stays the same for the whole map!

Calculating the Contour Interval:

1. Find 2 known lines
2. Find the difference between the lines
3. Count # of lines from lower line to upper line
4. Divide by the difference by the # of lines



What is the contour interval?

1: Find 2 known lines 10,000 10,500

2: Find height difference between lines 500

3: Count # of lines between lines 5

4: Divide Step 2 by Step 3 500/5 = 100

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lines far apart = Gentle slope

lines close together = Steep slope

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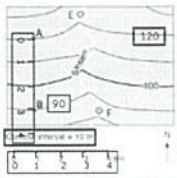
Page 1 on ESRT

Gradient

$$\text{Gradient} = \frac{\text{Change in Value}}{\text{Change in Distance}}$$



What is the gradient between points A & B?

$$\frac{120\text{m} - 90\text{m}}{3\text{ km}}$$

$$\frac{30\text{ m}}{3\text{ km}}$$

10m/km

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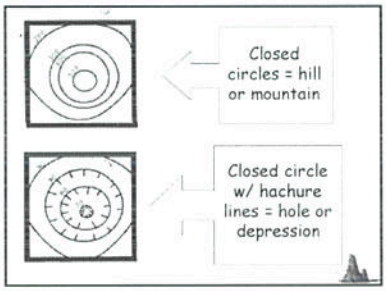
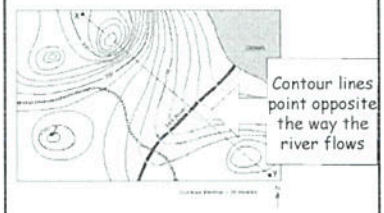


Closed circles = hill or mountain

Closed circle w/ hachure lines = hole or depression



Contour lines point opposite the way the river flows

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Getting Highest Elevation

- Find the highest contour line on hill
- Add the contour interval
- Subtract 1

220 + 20 = 240

240 - 1 = **239**

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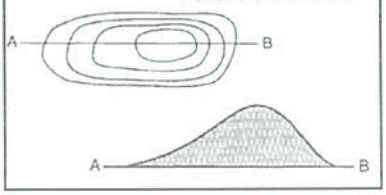
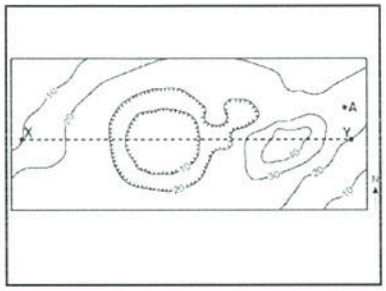
Topographic Profile - What a cross section of the land between two points would look like if viewed from the side

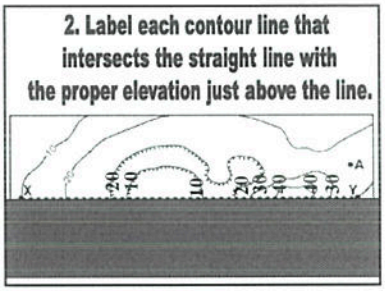


Steps to creating a topographic profile:

1. Draw a straight line between the two points you wish to make a profile of on the map.

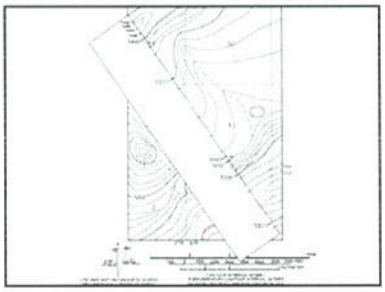


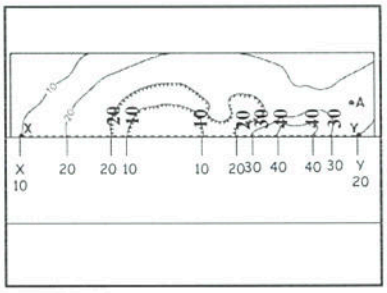
2. Label each contour line that intersects the straight line with the proper elevation just above the line.



3. Put the straight edge of a piece of paper up against the straight line on your map. Make a little mark on the edge of your paper every place where there is an X and write the elevation.

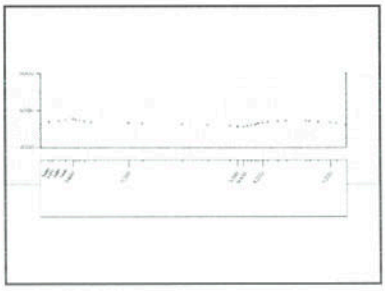
Hint: Just like when you are figuring out horizontal distance on a map using the map scale

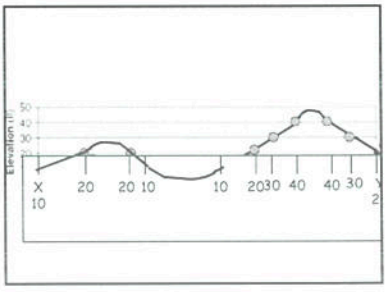


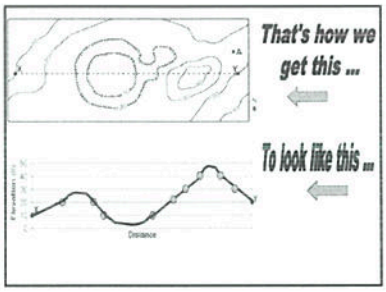


4. Place the edge of the sheet of paper you marked up against the x-axis. Plot each point on the graph at the correct elevation directly above each mark and connect them with a line

When showing a dip or a rise in the land, curve your line slightly above or below the graphing line.







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