Topographic Maps

How do topographic maps help us interpret our planet?
Topographic Maps

- Topographic Maps (contour map) - commonly used model of the elevation field of the surface of Earth
  - Topographic maps show three-dimensional shapes in two dimensions
- Elevation - height above or below sea level
Topographic Maps

- Natural Features - features that are created by nature
  - Examples: mountains, hills, lakes, and rivers
- Cultural Features - features that are created by mankind
  - Examples: roads, cities, buildings and dams
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- Contour Lines - lines drawn on a map that connect equal points of elevation
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• Contour Interval - the difference in elevation between two side by side contour lines
• The contour interval is usually found on the map key or legend
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- Index Contour - lines that are bold and have an elevation labeled
  - Example: 200 ft and 300 ft
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- Gentle Slope - when contour lines are spaced far apart
- Steep Slope - when contour lines are spaced close together
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• When contour lines cross a river they bend upstream

• Note: rivers flows the opposite direction the contour lines point
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- Benchmark - a marker that has the exact latitude, longitude, and elevation of that position
  - Labeled on a map as BM. X.
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- Depression Contour Lines - are marked with small lines called hachured lines that are pointed toward the center of a depression
  - Allows you to distinguish a hill from a hole
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• Calculating the Highest Point:
  1. Finding the last (highest) contour line on that hill
  2. Imagine you drew another line
  3. Subtract one from the imaginary line
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• Contour Line Rules:

  1. Contour lines close around hills, basins, and depressions or extend to the edge of the map
  2. Contour lines never ever cross
  3. Contour lines form V’s that point upstream whenever crossing a stream
Topographic Maps

- Topographic Profile - the side view of a geologic feature
Topographic Maps

Creating a Topographic Profile:

1. You need two points on a contour map and a horizontal grid between the two points
2. Transfer the points from the map to the horizontal grid
3. Connect the points with a smooth line to draw the profile