

Topography

Mapping Earth's Surface

Cartography – science of map making

Mapping Earth's Surface

1. Globe
2. Projections
 - Mercator Projection – shows correct shapes of coasts but area is distorted
 - Equal Area – shape of land is distorted



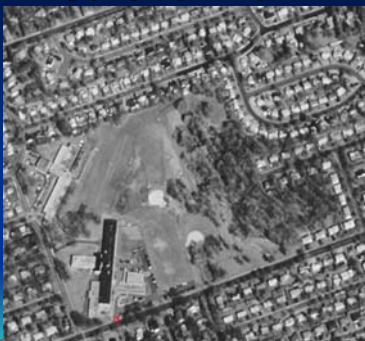
Topography

1. Topography – the shape of earth's surface
 - Made of various landscapes
 1. Mountains
 2. Plains
 3. Plateau
2. Relief – the difference in a regions elevation

Topographic Maps

- Shows the different shapes and elevations (relief) of land along with features
- Shows the Relief
 1. Contour line – a line of equal elevation
 2. Contour interval – the difference of value from one contour line to the next

Consider this...

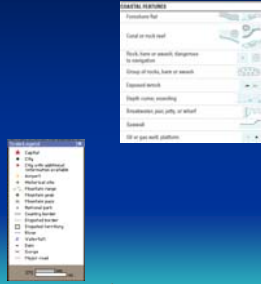


Contour Lines



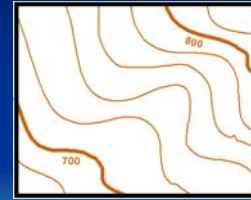
Topographic Maps

- Features shown with legend
 - Cities
 - Parks
 - Railroads
 - Swamp
 - Etc.



Index Contour

- Index contours – contour lines marked with elevation
- Useful for figuring out contour interval



Depression contours

- Hachure – a mark made perpendicular to contour line to indicate a depression



Scale

- Ratio between the distances on a map vs. real distances
- Verbal
 - One centimeter equals one kilometer
- Graphic
 - Shows distances via a scaled rule
- Fractional
 - Expresses distances as a ratio
 - 1:1000, 1:100,000
 - Any units



Gradient

- Steepness of a slope
- Change of elevation vs. Change of distance
- $\Delta \text{Elevation} / \Delta \text{distance} = G$
- What is the gradient of a region with an elevation that rises from sea level to a height of 4800m over a distance of 8km?

Topographic Maps

Topographic Profiles

[Andes](#)

[Himalayans](#)

[Terrain Profile](#)