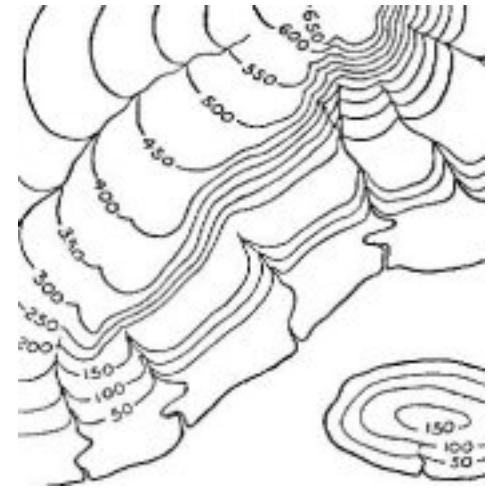


Name: _____

Language of Topography

Every map has its own special language. The road maps have lines for streets, routes, and highways. The political maps have boundary lines, capital stars, and major cities. For **topography maps**, the **contour lines** are the key to understanding this map's special language. Topography is the size and shape of natural and human-made land features. Map projections and globes do not give scientists detailed information about our planet's surface. This is why topographic maps are very useful.

Earth scientists, such as geographers and cartographers, want to know about the Earth's surface. They want to know about the shape, size, and **elevation** of its land features. Elevation is the height of a land feature above sea level. This is also referred to as the **mean sea level**. Elevation is calculated by choosing a point halfway between the highest and lowest ocean tide levels. At mean sea level the elevation of a land feature is zero.



Contour lines show changes in elevation. They are isograms because they connect points on the land surface that have the same elevation. These lines also show the shape of the land feature. Every fifth contour line is bolder than the other lines. This line is an **index contour**. Cartographers include the index contour to make the map easier to read. (This way you don't have a bunch of squiggly lines going on forever in front of your eyes.) The four lines above and below the index contour are not in bold. Index contours are also labeled with the elevation of that area. Contour lines never cross. If an exact elevation is available, an "X" will be added next to the number. If the contour lines are spaced widely apart, this means the elevation is changing gradually. The land in that area is basically level. Contour lines that are drawn close together mean a sharp change in elevation. Contour lines are used to show the **slope** or steepness of a land feature.

In addition to elevation, the direction of contour lines is used to show the shape of landforms. If you want to find a valley on a topographic map, just look for the V-shaped contour lines. The point of the V points upstream towards higher land. The width of the valley is shown by the width of the contour lines. Rivers will flow downstream or away from the point of the V. Mountaintops and hilltops are labeled with closed-loop contour lines. **Depressions** or sunken areas have special closed-loop contours. **Depression contours** contain short straight lines that are perpendicular to the inside loop.

If you want to know the difference in elevation between contour lines, you need to know the **contour intervals**. Contour intervals are the same for the entire map. If the difference between two lines is 20 feet, then the contour interval of the entire map is 20 feet. Contour intervals, however, are different from map to map. The **relief** is the difference between the elevation of the highest point and lowest point on the surface. Topographic maps with high reliefs usually have high contour intervals. Maps with low reliefs tend to have low contour intervals.

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The symbols used on topographic maps are very important. Cartographers who work for the **United States Geological Survey (USGS)** use different colored symbols to show land features. Bodies of water are usually colored blue. Forest and other plant areas are colored green. Buildings, roads, railroads, and boundaries are black. Contour lines are either black or brown. Cartographers will color areas that are still being researched purple. The USGS makes topographic maps for urban, rural, and suburban areas of the U.S. This agency also updates our maps. Stop by the USGS website <http://www.usgs.gov/> to view their current topographic maps.

Language of Topography

Questions

1. If you were looking at a topographic map for an urban area, what symbols would you expect to see in the map legend?

2. Compare a depression contour and a contour line.

- _____ 3. Contour intervals are the same for every topographic map.

- A. False
- B. True

4. If you were going on a hiking trip with your family to a national park for the first time, which map would be more appropriate to use- a geographic map or a topographic map? Why?

- _____ 5. Contour lines that are widely spaced show _____.

- A. areas with valleys
- B. areas with depressions
- C. gradually changing elevation
- D. sharply changing elevation

- _____ 6. The contour interval is the difference between _____.

- A. contour lines
- B. elevations
- C. sea levels
- D. parallel lines

Name: _____

7. Explain the purpose of index contours.
