

Geospatial Science
Natural Resource Conservation Academy

Exploring Topographic Maps

This exercise is part of the Geospatial Sciences section of the Conservation Ambassadors Program. <https://nrca.uconn.edu/students/maps/>

These questions accompany information and instructions on this web page: <https://nrca.uconn.edu/students/maps/topomaps.htm>.

Activity Questions

Background Information about USGS Topographic Maps

1. What does USGS stand for and what does the agency they do?

2. What is a topographic map?

3. What is the name of your map?

4. What year was the map published?

5. What is the name of your quadrangle and what are the names of the neighboring ones? *Hint: look in the map collar of your GeoPDF.* Fill in the grid.

| | | |
|-----------------|--------------------|-----------------|
| Quad to the NW: | Quad to the N: | Quad to the NE: |
| Quad to the W: | Quad Name (yours): | Quad to the E: |
| Quad to the SW: | Quad to the S: | Quad to the SE: |

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6. What does the green represent on the map?

White?

Blue?

Scale

7. What is the ratio scale?

SCALE _____ : _____, _____

This means that one inch on the map is equal to 24,000 inches (or 2000 ft) in the real world. Actually, it means that one of anything (cm, foot, etc.) on the map is equal to 24,000 of the same thing on the map. Another way of writing this would be a fractional scale of 1/24,000, meaning that objects on the map have been reduced to 1/24,000th of their original size.

8. Using the scale bar, estimate the distance (in miles) if you were a bird and flew from the western edge of map to the eastern edge (left edge to right edge).

You do not need a ruler for this. Anything with a straight edge, like a piece of paper, will work.

Coordinates

Latitude lines run parallel to the equator (which is 0 degrees). Latitude lines run east-west. Longitude lines intersect the poles. The Prime Meridian which runs through Greenwich, England is 0 degrees. Longitude lines run north-south.

9. How many latitude lines are shown on the map?

10. List one of the latitudes. They are listed as decimal degrees. *Hint: look at the corners of the map.*

EXTRA: How many longitude lines are shown on the map?

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EXTRA: List one of the longitudes.

Contours

Contour lines show elevation. Elevation is the vertical distance (think height) of the land from the ocean surface (0 ft elevation). Contour lines connect points on the map that are the same elevation. The contour interval is the distance in elevation between each line on the map (the brown ones).

11. Notice that some lines are light brown and some are dark brown. The dark brown ones are labeled with elevation. What is the distance in elevation between dark brown lines?

12. What is the contour interval of this map? *Hint: this is the distance between each line, whether light or dark brown.*

13. Find an area on your map with a steep slope. Steep slopes have contour lines that are close together. Why?

EXTRA: Look around your map and find a stream that flows down a slope and into a river or waterbody. Usually, the water carves a ravine where it flows and the contour lines show this change in elevation. Knowing that the contour lines follow the same elevation and that water flows downhill, does the point of the V of the contour line (where it crosses the stream) point upstream or downstream?

EXTRA: Continue to explore your topographic map.

EXTRA: Download different topographic maps of this area and explore changes.

EXTRA: Download a topographic map of a different area, maybe even a different state and explore similarities and differences.