

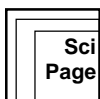
TOPOGRAPHIC MAPS Teaching Tips



LEARNING OBJECTIVES

Youth will be able to:

- * Explain how topographic maps can be used to study a neighborhood.
- * Identify symbols on a topographic map.
- * Identify what features are represented by different colors on a topographic map.
- * Read elevations on a topographic map.



HOW TO USE THE TOPOGRAPHIC MAPS SCIENCE PAGE

Point out to youth that the topographic map is of the same area as the airphoto on the "Aerial Photographs" Science Page. Give them some time to compare the airphoto and the map, and then ask: How is the topographic map different from the airphoto? (Answer: Both airphotos and maps show the Earth's surface as if you were looking down from above. However, an airphoto is an actual photograph of the Earth, while a map is a representation or accurate drawing of the Earth. Topographic maps have symbols for some of the features, such as lines for roads and a rectangle with a cross for a church, which you would not see on an airphoto.)

Explain that a topographic map is in color, and the colors represent different things, for example, the densely settled area around the park is pink, and the park and gardens are green. The lake at the bottom of the map is blue. Youth may wish to lightly color in their maps using the correct colors. Ask them to locate the schools, churches, and the railroad, using the symbols in the key.

The United States Geological Survey (USGS) has symbol sheets that tell what all of the symbols on topographic maps stand for. You can access these information sheets on the internet at: <<http://mac.usgs.gov/isb/pubs/factsheets/>

fs08199.html> You can also order copies of the sheets for free at the same website.

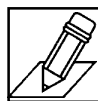
Point out to students that the name of the maps, "topographic," refers to topography or the "ups and downs" of the Earth's surface. Make sure students understand that the contours on the small contour map show a hill as if you were looking down on it from above. Of course, you can't see the slope of the hill if you are directly above it, but the contour lines tell you this information. The contour lines in the map are at 10-foot intervals, and the closer together they are, the steeper the slope.

For information on how to teach about contour lines and other aspects of topographic maps, see [Explorations from an Aerial Perspective](#), a manual by Eugenia Barnaba et al. The manual is available from Cornell Media Services at <<http://www.cce.cornell.edu>> You can order the manual on-line or by phone: (607) 255-2080.

Here is an activity to help youth understand what the scale on a map means. Have them trace their hands on paper with a large grid, for example a grid that has one centimeter squares. Then have them carefully copy, square by square, the outline of their hands on to paper with a smaller grid, for example a grid that has 0.5 cm squares. They will have drawn scaled down pictures of their hands. They can measure the sizes of the squares on both grids to figure out the scale of their second drawing. For example, if the squares on the large grid are 1 cm and the squares on the small grid are 0.5 cm, then the scale of the second drawing is 1:2.

You can view topographic maps on-line by going to the USGS website: <<http://mapping.usgs.gov>> A direct link is at: <<http://terraserver.microsoft.com>>

If you need further information about viewing maps on-line or about ordering topographic maps, phone 1 (888) ASK-USGS.



WORD SEARCH

Answers

T	S	N	V	B	J	L	H	S	S	S
S	Y	E	K	A	R	O	R	E	C	L
G	D	G	S	I	L	U	A	K	H	K
R	I	A	V	U	O	L	X	A	O	Y
X	F	E	O	T	O	S	E	L	O	P
R	R	V	N	R	L	H	P	Y	L	O
S	O	O	S	L	L	J	K	V	S	B
G	C	A	I	S	E	I	T	I	C	J
P	C	H	D	C	F	P	A	R	K	S
F	O	R	E	S	T	S	O	R	T	I
K	M	R	M	V	P	B	B	J	S	R



TRY THIS

Answers: 1. (b) left (west) of Lefferts Homestead. (The steepest slope is where contour lines are closest together.); 2. (b) on the right (east); 3. 5 churches; 4. 6 blocks; 5. 2 blocks; 6. 158 feet; 7. 3 cm x 120 meters = 360 m; 8. 5.5 cm x 120 meters = 660 m; 9. 10 cm x 120 meters = 1200 m

Please note, the scale of the map may be altered in the printing process. If this happens, for questions 6-9 have youth measure distances on the map and then use the linear scale to work out actual distances.



SPOTLIGHT ON RESEARCH

The information for this spotlight was drawn from NASA's Shuttle Radar Topographic Mission (SRTM) website at: <<http://www.jpl.nasa.gov/srtm>> (Updated: May 1, 2003). Youth may be interested in exploring this website to view SRTM images, and to learn about SRTM technology.