How to Read a Topographic Map

http://adventure.howstuffworks.com/outdoor-activities/hiking/how-to-read-a-topographic-map.htm

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Pre reading: Answer these questions

1) What is the difference between a „regular“ and a topographic map? What can you see?
2) Where are topographic maps useful?
3) How old are topographic maps?
4) How did the new technologies influence mapmaking?
5) Explain these terms from the text: backpacking trek, in a nutshell, vantage point

Different maps serve different purposes. If you're trying to drive from Point A to Point B, a regular road map is the way to go. But if you've strayed from the road, perhaps on a backpacking trek, you need to see the terrain and the contours of the land. And that means you need to be able to read a topographic map.

What's the difference between a topographic map and a regular map? In a nutshell, topographic maps allow you to see a three-dimensional landscape on a two-dimensional surface. These maps show the land's contours, elevations, mountains, valleys, bodies of water, vegetation and more. This contour and elevation information distinguishes them from other maps.

The U.S. Geological Survey (USGS) produced its first topographic map in 1879 and it still produces them today. Developments in aerial photography and satellite imaging make these maps much more accurate and efficient to produce than in the days when they were created by hand. When the USGS first started creating maps -- which it did to catalog public land -- the process was time-consuming and costly. Mule pack train was the only way to reach the mostly unsettled West, and cartographer's tools were crude compared with today's. Mapmakers would find an area's best vantage point -- usually the highest point -- and climb up to it with drawing boards and sighting devices. Then they would plot their maps, with the features that they could see and measure. This required both skill and daring. The advent of airplanes in the 1940s helped to advance mapping techniques.

Topographic Map Lines, Colors and Symbols

Unlike a regular map, where you mostly see highways and roads, a topographic map provides a more realistic view of the landscape. Features on a topographic map include:

Supply the examples of features on a topographic map

- Culture: ……
- Water: …….

- Relief: …….
- Vegetation: …….
- Toponymy: …….

Because the maps show so much information, they have a wide variety of uses. People use topographic maps for engineering, conservation, environmental management, public works design, urban planning and outdoor activities like fishing, hiking or camping.

Lines on a topographic map can be straight or curved, solid or dashed, or a combination. These lines indicate boundaries, contours, roads, streams and more. You'll see these lines in many colors -- brown, blue, red, black and purple. Each color means something different.

A topographic map uses symbols to keep the map less crowded, but it's still chock full of information. The U.S. Geological Survey (USGS) lists the following symbols on its topographic maps:

- Boundaries
- Buildings and related features
- Coastal features
- Contours
- Control data and monuments
- Glaciers and permanent snowfields
- Land surveys
- Marine shorelines
- Mines and caves
- Projection and grids
- Railroads and related features
- Rivers, lakes and canals
- Roads and related features
- Submerged areas and bogs
- Surface features
- Transmission lines and pipelines
- Vegetation

Answer the following questions:

1) **Which symbols can you find on the Czech or Slovak topographic maps?**

2) **In pairs, study the topographic map and describe the features you can see.**

HW – order the following paragraphs and supply suitable headings.

Hiking With a Topographic Map

A) …….Trails appear on a topographic map as thin black lines. Roads will be thicker red or black lines. As you choose your route from Point A to Point B, keep a close eye on your map's contour lines. If the lines are far apart, any changes in elevation will be gradual. If they're close together, though, you'll have a steep hike ahead of you. You'll see the highest point or peak of your climb as a circle in the center of the lines -- sort of like the rings on a tree.

B)……Topographic maps are a valuable tool for hikers and campers. You can plan an entire trip with the help of a topographic map, and you'll greatly decrease your chances of any unpleasant surprises. Your map can tell you a lot -- details about an area's elevation, the best way to ascend a peak or how to orient yourself using landmarks.

C)…….Once you've chosen the best route, take a look at the scale to find out the exact distance you'll be hiking. This way you'll know the amount of supplies you'll need in your backpack. Keep in mind you likely won't be hiking in a straight line, though. Experts advise using a string to mark your route on the map -- including all the twists and turns -- and then translating your string distance to the map's scale.

D)……..Your map will also show you where to locate water as well as how to stay within the timberline in case you end up needing shelter. Don't forget to note the symbols on the map to ensure you're not hiking into any private property or dangerous areas such as mine shafts or caves.

E)……..It's always best (and safer) to plan your hike in advance. Once you've selected the area in which you and your friends will be walking, get yourself a topographic map. There are lots available for recreation purposes -- the U.S. Geological Survey (USGS), for example, offers them online.

F)……If a climb looks too steep for your adventure level, you can use the map to plan an easier route around any hills or mountains. As we stated earlier, if you follow the contour lines from the map, your elevation will remain relatively stable.