Map and Compass Study Guide

Objective

The students will learn and demonstrate a verity of outdoor education skills orienteering. The students will be able to challenge themselves as well as others. The students will be able to use proper verbal communication skills as well as have fun. Students will also use teamwork/teambuilding skill in order to demonstrate the skills learned.

THE MAP- a map is a symbolic picture of a place. In a convenient shorthand, it conveys a phenomenal amount of information in a form that is relatively simple to understand and easy to carry.

1. Background-The earth is divided up into 360 units called degrees. A measurement east or west is called longitude; a measurement north or south is called latitude (think "lateral"). Longitude is measured 180 degrees, both east and west, starting at the Greenwich meridian in England. Latitude is measured 90 degrees; both north and south, form the equator.
2. Scale-The scale of a map is the relationship between measurements on the map and measurements in the real world. Scale is often represented as a ratio.
3. Quadrangles-The area coved by each individual USGS map is called quadrangle (or "quads" for short). Each quad is given its name by a prominent topographic or human feature in its area. The name of the quad is found in the lower right hand corner of the map.
4. Declination-A compass needle is attracted to magnetic north. Most maps, on the other hand, are aligned with the geographic north pole ("true north"). The difference between the direction of true north and the direction of magnetic north, measured in degrees, is referred to as declination. The importance of declination with regards to map and compass orientation, navigation. There is a diagram of the area's declination can be found in the lower left hand corner of the map.
5. Contour lines-The real challenge of map reading is tr4anslating a two dimensional map into the three dimensional reality of peaks, ridges, valleys and water which make up the natural world At the heart of this translation is learning how to interpret a map's contour lines. Contour lines represent imaginary lines of constant elevation running along the earth's surface. The elevation difference (contour interval) between adjacent contour lines always remains constant. Contour intervals are marked below the mileage diagram at the bottom of the map. Every fifth contour line is a deeper shade of brown. These are called index lines. Their elevation is marked somewhere along their extent and can help speed up the tabulation of elevation gain or loss along a route.
6. Legend- a legend is a chart or key, which explains the significance of different symbols used on the map. Most USGS maps lack a formal legend.
7. Pacing- knowing the pace at which a group travels can go a long ways towards helping locate their position on a map. With experience, it becomes easier to estimate pace.

THE COMPASS- a compass, at its most basic is a device which, anywhere and anytime, can reveal direction of travel. This direction of travel is described (in degrees) by its relationship to the earth's magnetic pole. The location of this pole is indicated by a magnetized needle, which aligns itself with the earth's magnetic field (one end of this needle, painted red, pints north, while the other end, painted white, points south)

- **Declination**- it's important in terms of using a map and compass together because, then traveling between the two, it is necessary to correct for declination.