Title

Compass Course

Objective: Students will be able to understand and apply proper compass reading techniques.

Standards:

G.8.K.1, G.8.K.3, G.8.1.1, G.8.2.1

Introduction:

Global Positioning Systems (GPS) tell us how to get from Point A to Point B, but they are useless if they quit working for one reason or another. The batteries may go out, clouds or landforms may interfere with the satellites, or the gadget may not recognize your location. If this happens to you, how will you find your way?

Knowing how to navigate with a compass is a valuable skill. No matter where you are, on a mountaintop, on a boat in the ocean, in the middle of the woods or in a big city a compass will always point north. A compass makes it possible for you to find your way if you become lost.

Audience:

This program is designed primarily for elementary to middle school grades; however, it can be adapted to incorporate adults as well.

Duration:

30 – 45 minutes.

Vocabulary:

Azimuth

Direction of Travel Arrow

Compass Housing

Orienting Arrow

Compass Needle

GPS

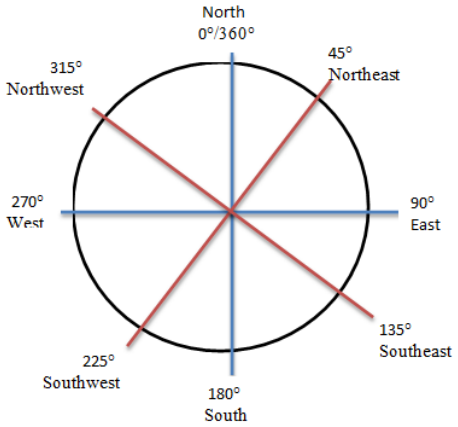
Material:

Compass
Compass worksheet

Warm up:

- Ask the audience what kind of experience they have using a compass and hand each participant a compass.
- Why is it important to know how to use a compass?

- Explain the parts of a compass
- Explain the compass rose and how 0˚to 360˚ translates to north, east, south and west.
- Next you will need to explain how to read a compass, take an azimuth (bearing) and determine the direction you would like to travel.



- A Direction of Travel Arrow on 0°/ 360° indicates North.
- A Direction of Travel Arrow on 90° indicates East.
- A Direction of Travel Arrow on 180° indicates South.
- A Direction of Travel Arrow on 270° indicates West.
- A Direction of Travel Arrow half way between 0° and 90° indicates Northeast.
- A Direction of Travel Arrow half way between 90° and 180° indicates Southeast.
- A Direction of Travel Arrow half way between 180° and 270° indicates Southwest.
- A Direction of Travel Arrow half way between 270° and 360° indicates Northwest.

Main lesson:

- <u>How to Take an Azimuth on a Fixed Object</u>
  - An azimuth, commonly referred to as a bearing, is the angular direction an object is in relation to your location. Finding an azimuth simply means establishing the direction between two objects or locations.
    1. Hold your compass level and away from any metal.
    2. Position yourself so that the Direction of Travel Arrow is pointing at the object you are trying to get a bearing on.
    3. Rotate the Compass Housing so that the Orienting Arrow and the red end of the floating Compass Needle are completely aligned. This floating red compass needle always points to North and by lining up the Orientating Needle with the Compass Needle you now know what direction the object is you are seeking.
    4. Look down at the Compass Housing and read the degree that is lined up with the Direction of Travel Arrow. This is your azimuth.

- <u>How to Follow an Azimuth</u>
  - Following an azimuth or bearing means that you are given a specific degree and must determine the direction of travel based on the reading given.
    1. Hold your compass level and away from any metal.
    2. Manually rotate the Compass Housing and line up your degree given with the Direction of Travel Arrow.

3. Rotate your entire body until the red floating Compass Needle lines up with the Orientating Arrow. When these two arrows are aligned you know that you have identified North.
4. Move forward using care to keep your Compass Needle and Orientating Needle lined up. If you let them become unaligned you will miss your intended target.

Activity:

- Lay out a course or two utilizing landmarks across an open area that participants can use to navigate to and from. Distances and azimuths will have to be determined ahead of time in order to prompt the participants and to guide them through a course.

- Once you have completed the explanation of how to correctly use a compass you may begin the land navigation course. The participants may want to complete the activity alone or with a partner and each will need a clipboard with a course worksheet on it telling them the bearings and distances they must travel to complete the course.

- You must also provide the participants with a measuring wheel or a pre-measured cord so they can measure out the appropriate distances on the course.

- You may need to assist participants if you observe them getting way off course. Hopefully everyone will arrive at the correct destination.

- Go over any concerns or questions the group may have about using a compass.

- Conclude the program by thanking the and hoping that they all now have a better understanding of the proper way to use a compass and encourage them to be safe (i.e. never hike alone, leave your itinerary with someone) while exploring the outdoors.