

ORIENTEERING II

OVERVIEW: Map and compass skills are the focus of Orienteering II. Students determine bearings and distance while completing an orienteering course that runs through the Camp.

PRINCIPLES:

- Review or learn the parts of the compass.
- Promote Math/Geometry skills.
- Accomplishing an orienteering course as a group requires teamwork and communication

VOCABULARY: bearings, angles, direction, pacing, magnetic north, scale

GOALS: To have students:

1. Learn map and compass orienteering.
2. Observe surroundings and relate reality to map representations.
3. Understand map scale.
4. Work together to achieve a goal.

Introduction:

1. Introduce yourself and review rules for the class.
2. Have students introduce themselves.
3. Suppose, you are traveling in the woods by yourself and happen to get lost. You do not have a compass. How would you find your way or figure out which direction to travel? North Star; sun rising in the east and setting in the west; moss growing on the north side of a tree (be careful because this is not always true; the use of landmarks, marking your trail as you travel; walking downstream on a creek to find civilization; etc.
4. What are some ways that you can measure distances? yard stick, parts of your body (hands, feet, legs), pacing (a normal step).
5. While using a compass you must know two things: direction and distance. You must know which way to go and how far to go in that direction.

Class Session:

1. With students sitting in a circle hand out a compass to each and have them put it around their neck. They should leave it there until the end of class. Remind them not to swing the compass, because they can damage the compass or hurt someone. Have them handle the compass for a minute, then discuss the parts.
2. Parts of the Compass:

BASE PLATE -should be held flat in their hand and they will plug it into their chest. Demonstrate how to hold the compass.

BEZEL RING -should rotate. has the letters N, E, S, W (90 degrees between each). It has numbers counting by 20's and markings for numbers from 1 -360 degrees.

TRAVEL DIRECTIONAL ARROW -located on the base plate. Also known as the "poison arrow". This will help students to realize that the arrow should be pointed away from them.

NEEDLE -"Red Fred" (points north to a point in Northern Canada because of the magnetic nature of the earth), -"White Dwight" (points south).

ORIENTING ARROW -The arrow located inside of the bezel ring Also known as the "shed"

INDEX LINE -The white line found under the bezel ring even with the Travel Directional Arrow Read bearings here or the degrees/directions are read here.

3. How to use the Compass

- a. Suggest a certain degree (direction) in which to go.
- b. Turn the bezel ring until the number is lined up with the Index Line and the Travel Directional Arrow.

- c. Turn body, not the compass or dial until "Red Fred" is in the his "shed".
 - d. Repeat until each student understands the parts and the correct way to use the compass
 4. Before reading a map
 - a. Split the group into smaller groups (for however many courses we have
 - b. Give each group a map of one of the three courses and a pencil.
 5. Orienting the Map
 - a. Place the map on the floor.
 - b. Line up 'N' with the Index Line. Place the compass on the map with the Travel Directional Arrow over the center of the north arrow on the map. (note: Be sure your compass is not too close to metal. This will offset your reading.)
 - c. Turn the map, without touching the compass, until the red needle is lined up with the north arrow. Now north in real life is lined up with north on the map. Your map is oriented.
 - d. Once the map is oriented, be sure not to move it. Tape it down
 6. Taking a bearing:
 - a. Place the edge of the compass with the mm. scale along the line segment you wish to take a bearing on. (Make sure the Travel Directional arrow is pointed up the map and "N" on the compass is towards north on the map. Otherwise your readings will be 180 degrees off.) Be sure the map stays oriented and the compass edge is exactly in line with the line segment { a small error on the map can make big difference on the course). Pushing down on the compass, so that neither it nor the map can slip, turn dial until "red fred" is in his "shed".
 - b. You now have your bearing dialed in and can pick up the compass and read it. You do not have to worry about reading your bearing before you move the compass. Once it is dialed in, it will stay.
 - c. Write down your bearing in the space provided.
 7. Measuring the distance:
 - a. Place the compass on the map with the mm. edge lined up with the segment you wish to measure. Be sure that you measure from the tip of the compass which is 0 mm. and not at 10 mm which is where the numbers on the compass start.
 - b. The readings need to be multiplied by two to convert to paces. Scale: 1mm. = 2 paces Be sure to tell them that everyone has different paces, but if they take normal walking steps, they should be very close.
 - c. Write down paces in the space provided.
 8. Before the course:
 - a. Have each group find the bearings and distances of the segments before you leave.
 - b. Check their answers with your key. They should be within, at most, five degrees and five paces.
 - c. While the students are working, the instructor can demonstrate another way to read bearings. Have the students disorient their map, then place the compass on the line segment from which they wish to take a reading. Make sure the "N" on the compass is towards the north arrow on the map and the Travel Directional arrow is pointed towards the top of the map. Now, have the students turn the Bezel Ring on the compass until the lines within the Bezel Ring are parallel with the grid lines on the map. Once the lines are parallel, the bearing is dialed in and the compass can be lifted to read the bearing. The students may check their maps this way or they can use this method while they are in route.