EXPLORE WITH COMPASSES

ITEMS NEEDED:
- 1 compass
- Orienteering course navigation guide worksheet
- “Home Base” (compass arrow) worksheet

ACTIVITY DESCRIPTION:
In this activity, you will use a compass to navigate a course.

Step One: Look at your compass. There are some very key features that will help you find your way.

Step Two: Notice the DIRECTION OF TRAVEL arrow on the plate in front of the dial. Hold the compass level in your hand, a few inches from your body, with the DIRECTION OF TRAVEL arrow facing the same direction as your nose.

Step Three: Find the red, NORTH arrow. The north arrow is drawn magnetically to the north. It will always try to point north. The NORTH arrow is NOT the arrow that you follow. It almost always points the wrong direction (north).

Step Four: Notice how the compass housing can be rotated. Turn the compass housing until the BLACK arrow (outline) painted on compass housing is aligned directly underneath the red NORTH arrow.

Step Five: There are 360° (degrees) in a circle. The dial lays out the degrees around the outer edge of the dial: N=360°, E=90°, S=180° and W=270°. Each line represents 5° on this compass.

Step Six: Locate the red BEARING MARK. This is a small red line under the dial that directly lines up with the DIRECTION OF TRAVEL arrow. You use the BEARING MARK to set your bearing.

Step Seven: Review the parts of a compass. Understand where each is located and how each is used: 1) DIRECTION OF TRAVEL arrow, 2) NORTH arrow, 3) BLACK arrow painted on the compass housing and 4) the BEARING MARK.

Step Eight: Now, point toward the north. Be sure to move your body and not just the compass.

SET A BEARING: You will now learn how to “set a bearing.

Step One: You are now going to use the compass to find a bearing of 210°. First, find the 210° mark on the dial. Turn the compass housing until 210° is directly on top of the BEARING MARK. Remember to hold your compass correctly.

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Step Two: Without turning the compass, turn your body until the red NORTH arrow is on top of the BLACK arrow painted on the compass housing. Do not turn your head, but turn your entire body, keeping your nose pointing the same direction as the DIRECTION OF TRAVEL arrow.

Step Three: Now, point in the direction you would walk if you wanted to walk at a bearing of 210°. Remember to always use the DIRECTION OF TRAVEL arrow to guide you, not the red NORTH arrow.

Step Four: Once you have decided the correct direction to walk, you should look up and locate an object in your field of view that is exactly in that direction and walk toward it, such as a tree, plant, post or house.

ON YOUR OWN: Place your “Home Base” arrow worksheet in a spot of your choice. Next, follow these navigation steps to complete your orienteering:

Step One: Stand on your “X Marks the Spot.”
Step Two: Proceed 15 steps at a bearing of 30° and then stop.
Step Three: Proceed 15 steps at a bearing of 120° and then stop.
Step Four: Proceed 15 steps at a bearing of 210° and then stop.
Step Five: Proceed 15 steps at a bearing of 300° and then stop.
(If followed correctly, you should land back on your “Home Base”)

DID YOU KNOW?

You can make a simple compass at home! You will need a bowl of water, a paper clip or a sewing needle, and a magnet.

Step One: Magnetize your paper clip or sewing needle by placing one end against the end of your magnet.

Step Two: Float the magnetized needle very carefully on the surface of the water. The end that you magnetized will point north or south, depending on how you magnetized it.

Step Three: If you are having a hard time doing this, try placing the needle inside of a drinking straw, on a piece of cork, or on anything that will help it float.

Project areas are topics that 4-H members can learn about on their own, with a friend, at a club meeting, or at 4-H events. To learn more about the project areas you can explore in 4-H, please use our free resources online at https://store.extension.iastate.edu/product/15266.

References:
https://nationalmaglab.org/education/magnet-academy/try-at-home/make-a-compass