

Compass Capers



Objective

Students will build a simple compass and use it to find their way along a course.

Materials

Per student pair:

- large darning needle
- magnet
- masking tape
- small pan or saucer
- water
- sheet of 8-1/2" x 11" paper
- slice from bottle cork
- cookie sheet

Background

Small, lightweight, and easy to use, the compass showed early explorers which direction was north regardless of harsh weather or terrain. The magnetic field of the earth aligns magnetized compass needles in a general north/south direction. Magnetic poles and geographic poles are not at the same places, though. And over time, magnetic poles move from place to place. Today the magnetic north pole centers around Hudson Bay, Canada, about 2,092 km (1,300 mi.) from the geographic north pole. Old basalt rock rich in iron shows magnetic poles switching north and south during certain periods.

Action

1. Distribute materials and have students assemble them on flat table or desk.
2. Magnetize the darning needle by sliding one end of the magnet along the needle in one direction at least ten times.
3. Tape the needle to the piece of cork.
4. Pour enough water in the pan or saucer to float the cork and needle.
5. Watch as the needle settles into a north/south direction. All the needles should point in the same direction.
6. When the needle has settled, have students mark north, south, east and west on the paper. (Ask students in which direction the sun rises and sets.)
7. Students can try the compass in the schoolyard. Have each pair sketch a map of schoolyard landmarks. Pairs hide an object in the schoolyard, noting directions on the map. Students then exchange maps and use the compass to find the hidden objects.

Deeper Depths

Given the materials above, have students create a compass without listening to verbal instructions or reading written directions.