

Ages 10-12

How to Make a Compass

What is a compass?

A compass is an instrument with a magnetized needle that points north. By knowing where north is, you can use the compass to find other directions.

How does it work?

The Earth contains metals that are naturally magnetized. One end of the compass needle will always point toward the North Pole because of the Earth's magnetic properties.

You can make a compass yourself and see how it works.

What will you need:

- 1 sewing needle
- 1 magnet (maybe there is one on the refrigerator)
- 1 bowl of water
- 1 small piece of paper

What to do?

1. Stroke the dull end of a needle across the magnet 60 times, going in the same direction each time.
2. Now place the small piece of paper on top of the water in the center of the bowl.
3. Set the needle on top of the paper and gently move the paper to cause it to spin slightly. Make sure there is no metal near by (does the table you are working on have metal on it or under it?) Also, make sure the magnet you used to magnetize the needle is at least 2 feet away from the bowl. If the paper gets stuck to the side of the bowl, gently nudge it toward the center again.
4. Now, wait. What is happening? When the needle and paper have stopped moving completely, the sharp end of the needle is pointing north. You can prove this compass is really pointing north by setting a manufactured compass nearby. Don't set the two compasses too close to each other because they will interfere with each other