



SCIENCE OUTSIDE THE CLASSROOM

Make your own compass

Recommended age group: 8-10 years

Ever wanted to explore your own yard using a compass? Well you can turn an ordinary sewing needle into one!

You will need:

- 1 thin, lightweight sewing needle
- Strong magnet
- Piece of paper
- Cup of water

What to do:

Place a very small piece of flat paper on the water in the cup. Balance the needle on it.

Even with a gentle push, the needle should stay pointing the way you set it.

Try orientating the floating needle with the magnet. This alone is great fun!

Then remove the needle and stroke its full length with the magnet at least three times. All strokes **MUST** be in the **SAME** direction and over the full length of the needle.

Put the needle back onto the small piece of paper – it always swivels around to point North.

How does this work?

The metal crystals in the compass are randomly aligned before you stroke it with the magnet. When you do this, the crystals become aligned and the aligned crystals generate a magnetic field.

The needle is able to move to align its magnetic field with the earth's magnetic field due to the low friction offered by the paper on the water.