

# Make a Compass

## How does a compass work?

Magnetic fields are made by rotating electrical charges. Earth has a magnetic field and a north and south magnetic pole. A compass works because the needle in the middle is a magnet, and it is affected by the Earth's magnetic field. This makes your needle want to turn so that its magnetic field is lined up with the magnetic field of the Earth. One end of the needle will point magnetic north and the other south.

## You will need:

- A metal sewing needle
- Cork or plastic bottle top
- Bar magnet
- Shallow plastic dish of water
- Sticky tack or tape
- A compass (to test the homemade compass)



## Method

- Magnetise your needle by stroking it 50 times against either the north or South Pole of your magnet from tail to tip. Make sure you do it in the same direction each time. Keep it away from computers and phones because this may demagnetise your needle!
- Stick your needle to your cap or cork using some sticky tack or tape.
- Put your cap or cork in the shallow dish of water.
- Test your homemade compass against a real compass. Do they point in the same direction?

