

How to Make a Compass

What you will need:

- A circle of card
- A paper clip
- A magnet (fridge magnet will do)
- A bowl of water
- Optional: A compass or app on a phone to check your success

the bigger the magnet
the easier it
will work

What to do:

1. Straighten the paper clip so it is one long piece of wire. Paper clips contain **IRON** which is a magnetic material
2. Fill the bowl with water
3. Stroke the magnet along the length of the straightened paper clip in **one direction**. It is really important you do not go backwards and forwards or it will not work
4. Continue to do this 2 minutes
5. Place the card circle on the water so it floats
6. Place the wire carefully in the middle of the circle
7. The circle should now turn until the wire points from North to South
8. If the circle doesn't turn, go back to step 3 for longer
9. Use a compass or compass app if you have one to see if your compass is working!

really key

→ magnetises the wire

What's Happening:

You have turned the wire into a magnet by stroking it with the fridge magnet! It's north pole is attracted to the North Pole of the Earth (where Santa lives!)

Can you suggest what is in the centre of the Earth to cause this?

The iron core of the Earth is like a giant magnet causing a magnetic field all round the Earth.

Super Challenge:

If the North pole of a magnet is attracted to the North Pole of the Earth, what is the magnetic pole at the top of the Earth?

South! Geographic north is magnetic south. Strangely every few thousand years the poles flip & scientists don't know why!