Scouts
Greater Manchester West

Virtual Camp

20-21 March 2021

Beavers
Cubs
Scouts
Explorers

Making a Compass

Time: 30-40 minutes

This activity is part of the **SCIENTIST** activity session.

You will need

- Bowls
- Access to water
- Compass
- Scrap card
- Pens or pencils
- Scissors
- Metal needle
- Corks and wax paper
- Magnet

Run the activity

1. Everyone should get into pairs or small groups, depending on the resources available. Give each group a needle and a magnet.
2. Groups should rub their magnet against their needle, rubbing only in one direction.
3. Give each group their disc. If using cork, the needle can be carefully pushed through the centre of the disc, horizontally from the top of the circle to the bottom. If using wax paper, thread the needle horizontally into the paper, so that it lies flat on top. An adult can help if this is a bit fiddly.

   Needles could also just be laid horizontally on top, providing they're balanced.

4. Give each group a bowl of water. Put the disc with the needle in the water, where it should float. Try to make sure the needle stays clear of the sides at both ends.
5. The disc should move in the water, rotating to face a different direction. Wait and watch as this happens. See what direction it ends up pointing in by comparing it with a normal compass. If the experiment's worked, the needle should be pointing north.
6. Next, groups should move their magnet toward their homemade compass in the water. See what happens as the magnet gets closer to your new compass.

   You could also try holding other metallic items close to the new compass, if there are any small ones close by.

7. Come together to discuss the science of magnets and compasses. See how much everyone knows about how they work.

   The magnetised end of the needle is attracted to the North Pole of the Earth because the Earth acts like it has a 'magnet' inside it, with the south end facing the North Pole. The Earth's magnetic field is weak, as it has to travel a long way from the centre of the Earth to reach your needle at the

surface. Even so, the needle was able to react because it was floating on water and free to move. A standard compass works in exactly the same way. It's just a small, lightweight magnet balanced on a free moving point, usually suspended in fluid to help it move.

This activity counts towards

- Scientist Activity Badge

Safety

These activities should be supervised by parent/carers at all times, and are not subject to The Scout Association's Policy, Organisation and Rules. These activities are completely voluntary, and each parent/carer should determine if they are suitable for their children.