

Are you looking for something to do to keep your brain active and engaged? We're here to help with Science at Home! You can conduct these fun science experiments using commonly found items. You can also visit us at the Museum's [Science at Home](#) page for additional resources.

Experiment: Making a Compass



Materials Needed:

- Large bowl
- 1 cup of water
- Sewing needle
- Magnet
- Knife
- Cork
- Black marker
- Compass
- Help from an adult

What We've Learned

A magnet can be used to magnetize a metal object such as a sewing needle. Electrons within the magnet are arranged in the same direction, creating a magnetic field. By rubbing the magnet against the metal needle, the electrons within the needle align and create its own magnetic field. Since our planet is a giant magnet, we can use the magnetized needle to find the Magnetic North Pole of the Earth.

Instructions:



Step 1: Rub a magnet along the length of a sewing needle. Repeat this movement 50 times and make sure you always rub in the same direction.



Step 2: Cut a 1/2"-thick slice from a cork with a knife then puncture the sewing needle through the side of the cork. (*You might need help from an adult to do this step*)



Step 3: Gently place the cork and needle on the surface of the water and wait until it comes to a rest.



Natural Connection

Many animals – such as fish, sharks, whales, turtles, bats, birds and bees – rely on Earth's magnetic field to navigate.



Step 4: Place a compass next to your device to determine which way the needle points. You can now take it out of the water and use a black marker to mark the cardinal directions north and south on the cork.



Having Fun?

We want to see your compass! Tag [@naturalsciences](#) on social media, so we can see you and your loved ones enjoying our Science at Home experiments.

Optional Step: Don't have a cork? Try to place the needle on a dry leaf or a cap of a water bottle.