

Make Your Own Compass

You can find these items around your home:

- plastic lid or shallow bowl
- needle or straight pin
- a magnet from your refrigerator
- a slice of cork/styrofoam or the lid of a plastic milk jug
- water

STEP 1: FLOTATION

With the help of an adult use a knife to slice off a piece of cork. For this step you may also use a piece of Styrofoam from a to-go box or the lid of a plastic milk jug.

STEP 2: MAGNETIZE NEEDLE

Make your own magnet! For this step you can use a needle, straight pin, bobby pin, safety pin or paperclip. Hold the eye of the needle in one hand and slide one side of the magnet along the length of the needle one way. It is important that you don't slide the magnet back and forth on the needle. Just slide it in one direction, lift it up, and repeat. Repeat this about 75 times. Now the needle is a magnet! *Slide only one direction.*

STEP 3: NO FRICTION IN WATER

Pour some water in the plastic lid or shallow bowl. The reason we will have the needle floating in the water is so that it is able to move freely to point to north. If it was on a rough surface it would not be able to move freely.

STEP 4: PUT IT ALL TOGETHER

Place the cork in the water and put the needle on top of the cork. It may take a minute to get the needle balanced well on the cork but eventually it will smoothly spin so that the needle points to the North.

YOU JUST MADE A COMPASS!

Your compass may not look exactly like these, but it will work just as well! The needle will point to the north/south, but you need to figure out which end is north. To figure this out you can use the sun!

The sun rises in the east and sets in the west. If you can figure out east and west, then you can decide which way is north. Go outside to see where the sun is compared to where you are. In the afternoon it will be in the west. In the morning it will be in the east. If it is a cloudy day and it is hard to tell where the sun is, wait until evening so you can see which direction the sun goes down from where you live. This way you can determine west. Use a permanent marker to mark which end points north.

You can use the GPS on a smart phone or pre-made compass to double check yourself.

Go outside to answer the following questions:

- Which way is the front of your home facing?
- From where you are standing which direction is the closest plant?
- Which direction does your street run?
- Look at your shadow, which direction is your shadow pointing?

You can also make your own questions and have a family member or friend answer them!

