

## Views and clues: make your own compass

Compasses are a great way to help orient yourself and determine which direction you're walking or looking toward.

*Make your own compass at home or outside with the help of fallen leaves!*

### For this activity you will need:

- An adult
- A needle (safety pin, hair pin, or razor blade will also work)
- A leaf (or another small object that can float, like cork or a bottle cap)
- A puddle, or bowl of water
- A magnet, your hair (keep it on your head!), or steel or iron object



### Directions:

#### 1. Magnetize your needle.

Magnetizing the needle will allow it to interact with Earth's magnetic fields and orient itself north-south. You may want to ask for help from an adult for this step. There are a few methods to accomplish this. Pick one of the following:

- Option 1: Using a magnet, carefully run the magnet the same direction along the needle 25-35 times. (Tip: Move the magnet away from the needle between each swipe.)
- Option 2: Very carefully holding the pointed end of the needle, rub just the eye of the needle 50-100 times along your hair in the same direction.
- Option 3: Press the sharp point of the needle or blade into a block of wood so that it is standing straight and carefully tap the other end with an iron or steel object, such as a steel or iron nail, horseshoe, or other household item at least 50 times.

Phew! You've created a temporary magnet, how cool! Now that you have a "needle" for your compass, let's find north-south.

#### 2. Suspend the magnetized metal.

Suspending the magnet allows it to freely move through Earth's magnetic field and point itself in a north-south orientation. Choose one of the following options to achieve this:

- Option 1: Find a puddle outside on a day with minimal wind to interfere. Then find a fallen leaf that can float on top of the puddle and place your magnetized metal on top of the leaf. The metal should pull the leaf to orient itself north-south!
- Option 2: Fill a small bowl with a few inches of water. Now, find any small item that can float in the water. You can try a coin-sized piece of cork, a plastic bottle cap, or popsicle stick, for example. Balance the temporary magnet and allow it to orient itself north-south!

If you don't have a true compass to compare the temporary compass you've created, look for clues around you that can help determine east and west.

- Is it early or late in the day? Is the sun out? The sun rises in the east and sets in the west and can be a helpful orienteering tool to help determine the cardinal directions.
- Is there a view of a mountain or major river you can see? In the greater Portland region, Mt. Hood can often be viewed to the east, while the rolling Oregon Coast Range can appear almost like large hills to the west.