

Northern Navigation

Celebrate 'Marooned without a Compass Day' by making your own tool to navigate the high seas!

Collect

- Sewing needle, made of iron or steel
- Bar magnet
- Bowl
- Small leaf, or piece of foam (about 1/2 inch by 1/2 inch or similar)
- Optional: compass

Magnetize the needle

1. Hold the bar magnet in one hand and the sewing needle in the other hand.
2. Rub the end of the needle back and forth in the same direction along one end of the magnet.

Find North

3. Fill a bowl halfway with water.
4. Place the small piece of foam or the leaf in the bowl.
5. Place the needle on top of the foam or leaf so that the needle is lying parallel to the surface of the water.
6. Watch the needle as it starts to move. If it hits the side of the bowl, move the needle and its raft back to the center again.
7. When it stops moving, what direction does it point toward?

Hint: Use a real compass, smartphone compass, or map to check the accuracy of your needle compass.

How does it work?

When the needle is magnetized by the bar magnet, the point of the needle is attracted to the closest magnetic pole. Since we are in the Northern Hemisphere, your needle should turn until it is pointing directly towards the North Pole!

