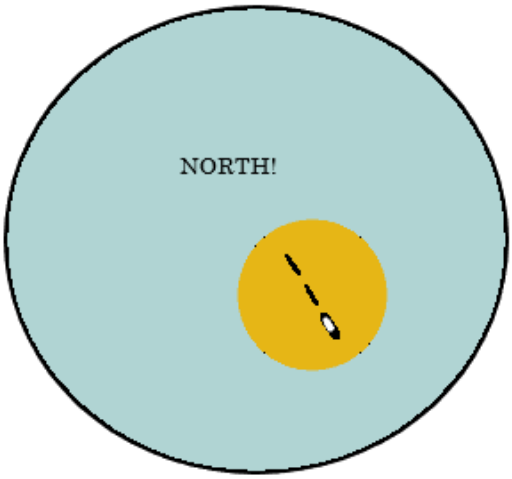
Make a compass using a magnet

You need:

Adult supervision
A sewing needle (most are made of steel which is mainly iron)
A magnet (a large rectangular or circular one is best)
Paper and scissors
A bowl half filled with water



Instructions:

1. Rub one end of the needle on one side of the magnet about 20-30 times. Always rub in one direction, not back and forth. Do it like this—rub and lift then rub and lift, repeat .
2. Test out your newly magnetized needle. Can it pick up small steel things like a paperclip or a pin? If not, give it a few more strokes on the magnet.
3. Cut a circle of paper about 3 inches in diameter.
4. Poke the needle through the paper so it lays flat.
5. Now gently place the paper with the needle on the surface of the water in the bowl. Make sure the needle is on top. The magnetized end of the needle should point north. Test it by turning the paper needle "raft" or the bowl gently and letting the needle swing back to point north.

You have created a compass! The magnetized end of the needle is the compass's north-seeking pole!

"Your compass points north because the Earth is a magnet. The north-seeking pole of your compass points toward the north pole of the Earth magnet. No matter how you turn your compass, it will always point north when you let go of it."

(from What Makes a Magnet? by Franklyn M. Branley, 1996)

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