HOMESCHOOL SCIENCE EXPERIMENT

MAKING A COMPASS WITH A MAGNETIZED NEEDLE

You will make a simple compass using a magnetized needle and test how it responds to Earth's magnetic field.

PURPOSE

To make a compass with a magnetized needle and observe how it points North–South.

MATERIALS

- Sewing needle (steel)
- Bar magnet
- Cork or piece of foam
- Bowl or shallow dish
- Water
- Marker (optional)
- Compass or map (for reference)

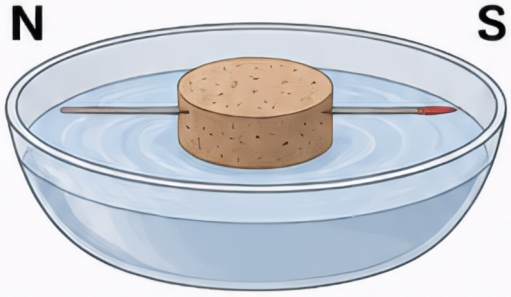
SAFETY

Be careful with the needle—it is sharp.
Use caution and ask an adult for help if needed.

PROCEDURE

1. **Magnetize the Needle**
   Place the needle on a flat surface. Stroke the magnet along the needle from one end to the other in the same direction, 20–30 times. Always lift the magnet off the needle when returning to the start.
2. **Prepare the Float**
   Push the magnetized needle carefully through the cork or foam so it floats horizontally. The needle should be able to spin freely.
3. **Set it on Water**
   Place the float in a bowl or shallow dish of still water. Gently let it go.
4. **Observe**
   Watch which direction the needle points. Allow it to settle and stop moving.
5. **Test Again**
   Turn the dish slightly and observe again.
   Does the needle always point the same way?

SETUP DIAGRAM



The magnetized needle floats and aligns with Earth's magnetic field.

OBSERVATIONS

Which direction did the needle point?	
Did it always point the same way?	
What might the needle be pointing to?	
Draw or describe what you saw.	

THINK & REFLECT

1. Why do you think the needle pointed in that direction?
   _____
2. What is the name of the direction the needle points to?
   _____
3. How is this similar to a store-bought compass?
   _____
4. Where could you use a compass in real life?
   _____

DID YOU KNOW?

Earth acts like a giant magnet! A compass needle points toward Earth's magnetic North Pole, which is near the geographic North Pole. That's how compasses help us find directions.

CHALLENGE: Try making your own compass outdoors. Does it still work in a different location?