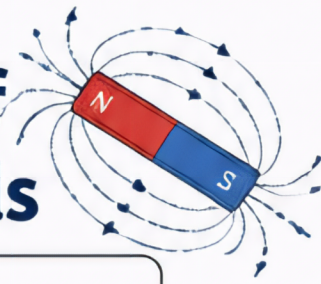


Observing the Properties of Magnets and Magnetic Fields



Name: _____

Grade: _____

Date: _____

Investigator: _____

QUESTION

What are the properties of magnets and how can we describe magnetic fields?

HYPOTHESIS

I think _____

because _____

MATERIALS

- Bar magnet (or horseshoe magnet)
- Paper clips
- Iron nails or small metal pins
- Compass
- Iron filings
- Paper
- Pencil
- Ruler (optional)

PROCEDURE

1. Exploring Attraction

- Bring a magnet near different objects (paper clip, iron nail, wood, plastic, glass, coin).
- Record which objects are attracted to the magnet.

2. Finding the Poles

- Hold the magnet and notice the ends.
- Use a compass to find which end is North-seeking and which is South-seeking. Label the ends N and S.

3. Like Poles and Unlike Poles

- If you have two magnets, bring the ends of the magnets close together. Observe what happens with:
 - N near N
 - S near S
 - N near S

4. Mapping Magnetic Fields with Iron Filings

- Place a sheet of paper on a table.
- Put the magnet in the center of the paper.
- Sprinkle iron filings evenly over the paper.
- Tap the paper gently and observe the pattern.
- Carefully draw the pattern of the iron filings on the paper.

5. Mapping Magnetic Fields with a Compass (Optional)

- Place the magnet in the center of the paper.
- Use the compass to find the direction at several points around the magnet.
- Mark the direction the compass needle points.
- Draw the magnetic field lines showing the pattern.

OBSERVATIONS & RESULTS

1. Attraction Test

Object	Attracted to Magnet? (Yes / No)
Paper clip	
Iron nail / pin	
Wood	
Plastic	
Glass	
Coin	

What did you notice? _____

2. Iron Filings Pattern (Draw the pattern you observed.)

3. Compass Field Map (Draw the magnetic field lines.)

CONCLUSION

What did you learn about magnets and magnetic fields? _____

One real-life example of magnetism that I use or see is: _____

Would you like to explore anything else about magnets? _____

Key Ideas

- Magnets attract certain metals.
- Magnets have two poles: North (N) and South (S).
- Like poles repel. Unlike poles attract.
- Magnetic fields surround magnets.
- Field lines go from North to South outside the magnet.