Name _____

Magnetic Interactions

Objective:

Students will explore how magnets can interact with paperclips without touching them. This experiment will help students understand the cause and effect relationship of magnetic interactions between two objects that are not in contact with each other.

Materials:

- 2 bar magnets
- 10 small metal paperclips
- Table to record observations
- A ruler

The Scientific Method Steps:

Ask a Question:

Can a magnet move a paperclip without touching it?

Make a Hypothesis: (What do you think will happen?)

_____

_____

_____

_____

Set Up the Experiment:

Place a sheet of paper on the table. Put a paperclip on top of the paper. Hold a bar magnet just above the paper, near the paperclip, but without letting the magnet touch the paper or the clip.

Test the Interaction:

Slowly move the magnet closer to the paperclip. Watch what happens! Does the paperclip start to move toward the magnet? Try moving the magnet farther away and see if there's a point where the paperclip stops moving.

Measure the Distance:

Use the ruler to measure how far away the magnet was from the paperclip when the clip began to move. Record this distance.

Repeat and Observe:

Repeat the experiment using different sizes of paperclips, or by using both bar magnets.

Magnet Height Above Paper Clip (cm)	**Paper Clip Response** no movement, movement (describe movment
25 cm	
20 cm	
15 cm	
10 cm	
5 cm	
1 cm	

Analyze the Data:

Think about the results from each experiment. Was the magnet able to move the paper clip without touching it?

Conclusion:

_____

_____

_____

_____

_____