Name:

Electricity & Magnetism

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What is Magnetism and How is it Related to Electricity?

Discover: The Mysteries of Magnetism

Question

How can magnetism be seen and experienced?

Resources

- Magnetic Kit Items: two bar magnets
- Other items: staples, paper
- Optional: compass
- Website: Magnetic Field Lines
- *Magnetism Evidence Table*

Instructions

1 Look carefully at each of the mini-experiments in the Magnetism Evidence Table. As you do the following steps, record what you see or feel for each mini-experiment. Then, think about what you have learned about magnetism and magnetic fields, and write an explanation of what you saw for each mini-experiment.

2 **Mini-Experiment 1: Magnets - Attraction and Repulsion**

A. Place the alike ends of two bar magnets together (for example two N poles). Now let go. What did you see? What did you feel?

B. Place the different ends of two magnets together (one N pole and one S pole). Now let go. What did you see? What did you feel?

Write what you saw and felt in the Magnetism Evidence Table, and then write an explanation for what happened in the "What Does it Mean?" column.

3 Mini-Experiment 2: Opposite Magnetic Poles - Staples

Visit the Magnetic Field Lines website and look carefully at the iron filings around the bar magnet. Now, click the "ON" button below the bar magnet. What do you see?

Make 30 or more bent staples. Place the staples on a white piece of paper or a paper plate until they are evenly spread out.

Now, place two bar magnets **so that two opposite poles are together.**

Place the paper or paper plate over top of the magnets. Then, gently tap the page many times gently near the bar magnets.

What do you see? Write what you saw in the **Magnetism Evidence Table,** and then write an explanation for what happened in the **"What Does it Mean?"** column.

3 Mini-Experiment 3: Like Magnetic Poles - Staples

Place the bent staples on a white piece of paper or a paper plate until they are evenly spread out.

Now, place two bar magnets **so that two like poles are together.**

Place the paper or paper plate over top of the magnets. Then, gently tap the page many times gently near the bar magnets.

What do you see? Write what you saw in the **Magnetism Evidence Table,** and then write an explanation for what happened in the **"What Does it Mean?"** column.

4 Mini-Experiment 4: Perpendicular Magnets – Staples

Place the bent staples on a white piece of paper or a paper plate until they are evenly spread out.

Put the small bar magnet on a table and place the other bar magnet perpendicular to it. Now, place the paper with the staples over top of the magnets, and then tap the page many times gently near the bar magnets.

What do you see? Write what you saw in the **Magnetism Evidence Table,** and then write an explanation for what happened in the **"What Does it Mean?"** column.

5 Mini-Experiment 4: Magnet Shape - Staples

Place the bent staples on a white piece of paper or a paper plate until they are evenly spread out.

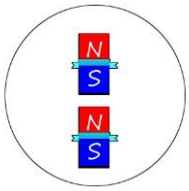
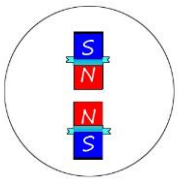
Place two different shaped magnets such as fridge magnets, round magnets etc. underneath. The paper.

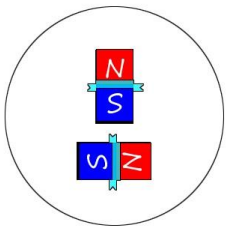
What do you see? Write what you saw in the **Magnetism Evidence Table,** and then write an explanation for what happened in the **"What Does it Mean?"** column.

6 Mini-Experiment 4: Compass Needle

Put the small bar magnet on table and place the compass close to it. Now, slowly move the compass all the way around the magnet, carefully watching the compass needle. What do you see? Write what you saw in the **Magnetism Evidence Table,** and then write an explanation for what happened in the **"What Does it Mean?"** column.

Check your answers using the ***Check Your Answers*** on the webpage in the course content.

Magnetism Evidence Table		
Mini Experiment	What Did You See or Feel? – Drawing or Photo	What Does It Mean?
Mini Experiment 1  A. Two Bar Magnets Attract B. Two Bar Magnets Repel	A. B.	
Mini Experiment 2  Opposite Poles Magnets - Staples		
Mini Experiment 3  Like Poles Magnets - Staples		
Mini Experiment 4		

 Magnetic Field of Two Perpendicular Magnets and Staples		
Mini Experiment 5  Magnetic Field of Different Shapes of Magnets and Staples		
Optional Mini Experiment 6  Compass Needle		

Save Your File

Save your Table to your Electricity Notebook folder.