

Magnets: May the Force Be With You

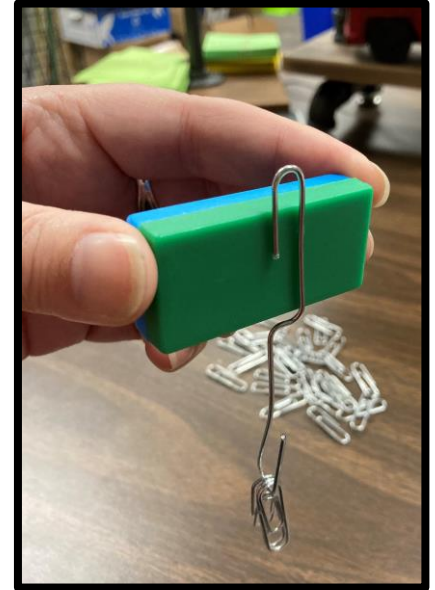
NOTE: Children should always be given ample time to experiment, notice, and wonder before they are provided an explanation.

Always engage children with our two favorite questions:

What do you notice?

What do you wonder?

Resist the urge to answer any questions children have while exploring. Instead, respond back with questions to children and let them make sense of the world. Sample questions you might use: What do you think? Do you notice any patterns? What could we change? Can we test something else? What can we try next? If children ask a testable question, which they could answer by doing an experiment, talk through with them how they might design a test to help answer their question/ As much as possible and within reason, let them actually test their questions by trying the experiments they propose.



Learning Objectives

Children will...

- compare the magnetic strength of two separate magnets with the magnetic strength of two magnets together.

Key Question

How many paper clips will a magnet hold? Which would hold more paper clips, two magnets separately or two magnets stuck together?

Vocabulary

Magnet	Attraction	Magnetic Force
Magnetic	Magnetism	Strength
Magnetic poles	Repel	

Materials

3 ring ceramic magnets	1 large paper clip, (bent into a hook.)	Small paper clips
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NOTE: If you do not have ring magnets, any magnets will do.

Notice and Wonder Developmentally Appropriate Practice

1. Show children a magnet with the large paper clip hook.
2. Show children how you will hand small paper clips on the hook.
3. Ask children to make a prediction about how many paper clips the magnet will hold before the large paper clip hook comes loose.
4. Record predictions in journal or on paper or whiteboard.
5. To test prediction, have children hold the magnet but not the hook. Hang clips on hook one at a time until hook falls off.
6. Remove one clip and check the hook will hold the remaining clips.
7. Count the clips on the hook, and record test result.
8. Repeat the experiment, predictions, and testing using another single magnet by itself.
9. Repeat experiment, predictions, and testing but this time use two magnets together instead of just one.
10. Compare the total number of paper clips the two single magnets were able to hold compared to using the two magnets together.
11. Repeat experiment predictions, and testing but use three magnets together.



#STEMAZingPictureBook Recommendations:

Magnets Push, Magnets Pull by David A. Adler and Anna Raff

Read on YouTube - (<http://bit.ly/MagnetsPushMagnetsPullReadAloud>)

Connections to the activity: Guide for young children learning about magnetism.

Videos:

Magnetism - #aumsum #kids #science
<https://www.youtube.com/watch?v=DR9w4koW2EA>

Fun with Magnets! SciShowKids
<https://www.youtube.com/watch?v=s236Q1nuWXg>

Magnets and Magnetism – Magnets video for kids
<https://www.youtube.com/watch?v=-aNpmCSZHbk>

Magnetism | The Dr. Binocs Show | Educational Videos For Kids
<https://www.youtube.com/watch?v=yXCeuSiTOug>

References

Adapted from experiments described Core Knowledge Science and from Project Aims

What the heck? May The Force Be With You

Magnets vary greatly in strength according to a number of factors including, what materials they were made from, how they were made, how old they are and, how they have been treated. When two (or more) magnets are placed together, they become one combined **magnetic force** and are considered one magnet. Such magnet made up of two units will be stronger than one magnet but not quite as strong as the combined strength of the two magnets tested separately.

AZ Early Learning Standards

Science Standard - Strand 1: Inquiry & Application - Concept 1: Exploration, Observation & Hypotheses

The child observes, explore, and interacts with materials, others, and the environment.

Science Standard - Strand 1: Inquiry & Application - Concept 2: Investigation

The child researches their own predictions and the ideas of others through active exploration and experimentation.