

Multiplying Magnets

Post-field trip lesson for Defying Gravity



Engagement

Ask students if any of them tried putting the two magnets together during the Discovery lab? What happened when they moved the magnets toward each other? How did it affect their defying gravity machine? Record their responses on the board.

Exporation

Review the scientific method with the whole class. Then distribute magnets to small groups or partners. Ask them to experiment and record their notes.

- What happens if you put together two magnets?
- Do they become stronger together?
- Have students combine magnets and measure how close they have to get to the paperclip for it to be attracted to the set of magnets?
- What about three magnets stacked together?

After some time for exploration and observation, have them come up with their own experiment to answer the questions.

Explanation

Then students share their experiments and results with the class.

Extension

Have students write the protocol for their experiment. Have them then switch experiments to see if they can duplicate the results from the previous test.

Other Resources

Background of magnets from BrainPOP: <http://www.brainpopjr.com/science/forces/magnets/grownups.weml>
Online magnet interactive" <http://www.sciencekids.co.nz/gamesactivities/magnetssprings.html>

Next Generation Science Standards:

5-PS1-3. Make observations and measurements to identify materials based on their properties.

3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

Nevada Science Standards:

P.5.A.3 Students know materials can be classified by their observable physical and chemical properties (e.g., magnetism, conductivity, density, and solubility).

NS.5.A Students understand that science involves asking and answering questions and comparing the answers to what scientists know about the world.

Common Core:

SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 5 topics, texts, and issues, building on others' ideas and expressing their own clearly.

What You Will Need:

- Various magnets
- Small uncoated paper clips