

Xperiments with **Magnets**

#5 PICK UP THE PAPER CLIPS

HOW MANY PAPER CLIPS CAN YOUR MAGNETS PICK UP?

NEEDED:

- paper clips or other small metal objects
- magnets of different sizes and shapes
 - *If you want to purchase these magnets from Dowling, try our item # 516.
- one powerful magnet such as a Neodymium magnet
 - *Try our item # 715.

INVESTIGATION:

Choose one magnet and slowly move it closer and closer to the paper clips. Once you have used the magnet to gather as many paper clips as it can, pull off all of the paperclips and count how many your magnet picked up. Try this with magnets that are different sizes and shapes. How many paper clips did the other magnets pick up? Also try to pick up the paperclips without touching them with the magnet by holding the magnet slightly above the paperclips.

Did you know that magnet strength is not determined by size alone? It's true. The materials that a magnet is made from will also determine

the magnet's strength. Could a Neodymium magnet the size of a pencil eraser be stronger than a flexible ferrite magnet the size of a chicken's egg, or even the size of your hand?

EXPLANATION:

The strength of a magnet is determined by both its size and its composition (what it is made from). Neodymium or "rare earth" magnets are very strong and are used in many devices including computers. However strong Neodymium magnets are, they are also very brittle. Other types of magnets are not as strong and are used for work that requires qualities other than brute strength.