

Interactive Science Teacher™

Hands-on, effective science lessons.

Presents the original series

Science Bites

❖ **Great demonstrations for busy science teachers**

- Magnetism
- Atoms
- Conserving Land, Water, & Air
- Electricity
- Forces
- Heat Transfer
- Light And Water
- Plate Tectonics
- Physical & Chemical Change
- Sound
- States Of Matter
- Why Is The Sky Blue?

1. Materials

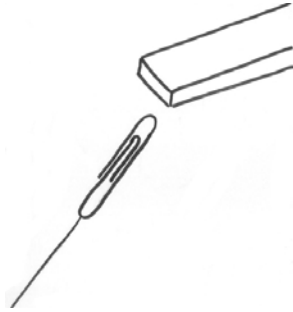
- 1-Small paper clip with 20cm of fishing line or very fine thread tied to it
- 1-Ring stand and utility clamp
- 1-Bar magnet

Prep

Tie the 20cm piece of fishing line to the paper clip. Use small steel paper clips, not jumbo paper clips or ones that are painted- they are too heavy and won't "fly". Fasten the bar magnet to the clamp on the ring stand so it stays perfectly still.

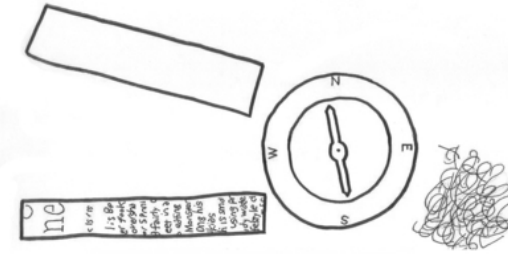
Procedure

Hold the paper clip on the string near the magnet and observe how it behaves. Now hold the paper clip below, but still close enough to, the magnet so that it stays suspended when you let go. The gap between the paper clip and magnet can be clearly seen.



2. Materials

- 1-Compass
- 1-Small strip of newspaper (~ 1 cm x 8cm)
- 1-Small strip of aluminum foil (~ 1cm x 8cm)
- 1-Small piece of steel wool



Procedure

Ask which of these 3 materials- paper, aluminum, and steel wool- can and cannot be magnetized. You'll get all kinds of answers. Drag/stroke the newspaper strip over the magnet 30 times and check its magneticity using the compass. (The needle doesn't deflect, so it's not.) Do the same with the aluminum (it's not), and the steel wool (it is!). This demo fools many students. Most assume that since aluminum is metal that it can be magnetized.

3. Materials

- 1-Hanging magnet holder
- 1-Bar magnet

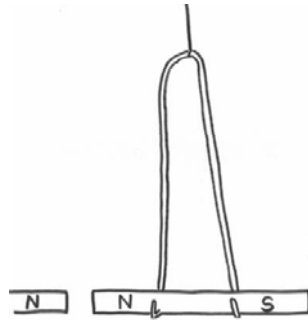
Prep

To make a hanging magnet holder: cut and bend wire coat hanger into the shape you see. A string ties it to the ceiling (it can also be held if you're very still). You can get 2 out of each coat hanger. Cover the sharp ends with tape so they don't catch on anything.

Procedure

Lay a bar magnet in the arms of the holder and "shepherd" it still with nudges so it stops swaying. Notice which way north is points- there must be another magnet at work somewhere causing this to happen. Where is it? (earth!). Think of it as a home-made compass.

Use a second magnet to tease the hanging one.



Magnetism

4. Materials

- 1-Bar magnet
- 1-Blank sheet of copy paper
- 1-Sandwich bag with about 2 grams of [iron filings](#)

Procedure

Lay the bar magnet on a table and cover it with a sheet of paper. Lightly sprinkle iron filings all over the paper. Patterns showing the gorgeous lines of force emerge. Those are the invisible streams of particles flowing between the south and north pole.

Tip: Cut a very small hole in the bottom corner of the baggie and use it to pour the filings onto the paper covering the magnet. It's a little messy, but it's still an easy way to produce the best result.

