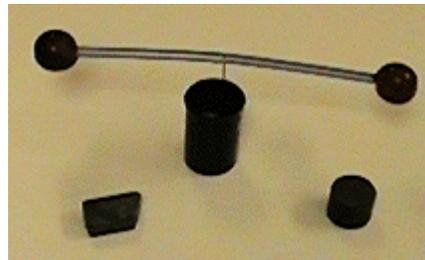


Magnetism –Push A Grape

You know that a magnet can attract something but they can also repel.

Materials:

- Two large grapes
- Film canister or prescription pill container with lid
- Push pin (tack)
- Drinking straw
- Small knife or scissors
- Neodymium (Rare Earth), Ceramic, or cow (Alnico) magnet



Procedure: (Remember to have your parent’s permission and have them watch and help you.)

- Neodymium or ceramic magnets may be purchased at hobby or hardware stores or very large very strong magnets called cow magnet are available at farm supply stores such as COOP or UFA.
- Insert the push pin through the underside of the lid and put it on the container so that the point of the pin is sticking out.
- Push one grape onto each end of the straw. Find the center of gravity (where it will balance on your finger) of the drinking straw and grapes. Cut a small hole, on the bottom of this centre of gravity but be careful not to cut too far through the straw or you’ll weaken it.
- Balance the straw with the grapes on the point of the push pin; the point of the pin goes through the small hole in the bottom of straw resting the point on the inside of the straw at the centre of balance. The straw should spin freely.
- Hold the magnet near the grape but not touching it. What happens?
- Predict what will occur if you use the other end of the magnet. Try it.
- When all movement stops turn the magnet around (use its other pole) and hold it near the grape without touching it. What happens?

What's Happening:

Did the magnet attract or repel the grape? Did the opposite happen when you turn the magnet around?

Ferromagnetic materials, such as iron, are strongly attracted to both poles of a magnet. Paramagnetic materials, such as aluminum, are weakly attracted to both poles of a magnet. Diamagnetic materials, however, are **repelled** by both poles of a magnet. The diamagnetic force of repulsion is very weak (a hundred thousand times weaker than the ferromagnetic force of attraction). Water, the main component of grapes, is diamagnetic.

Extension:

Try other fruits other such as watermelon, which also has a high water content. Cut the fruit into grape size pieces.

This activity is based on our Magnetism kit. The source for this lab was: http://www.exploratorium.edu/snacks/diamagnetism_index.html. Our teaching kits (described on our website) are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering as a classroom guest speaker or allow your business as a field trip location.

Lorne Cooper, Regional Executive Director

PRAXIS, “Making Science Fun”. Contact Praxis at praxis@praxismh.ca, www.praxismh.ca, Tweet or follow us @PraxisMedHat, or friend us on Facebook. Address: c/o 200 7th Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.