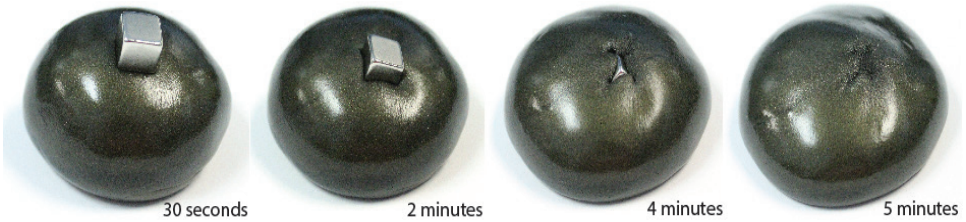
Action Shots

Series 1

Series 2



TEACHERS GUIDE

GRADE LEVEL 5+

MAGNETIC PUTTY
ITEM # 3196-00

ENERGY - MAGNETISM

Made with micron-sized iron-based particles distributed throughout, the astonishing moldable magnetic putty takes on the properties of a magnet itself when placed in close contact with the included magnet. It's perfect for science-loving kids, or for any adult that loves intelligent play!

Use the magnet to do the "snake charmer" trick. Or leave the magnet on your ball of putty and watch it completely engulf the magnet in minutes! What can you do with it? The possibilities are endless!

Materials

- Magnetic Putty and Magnet
- Water
- Ice
- Vaporizer/Humidifier.

Optional:
- Cornstarch
- variety of strong magnets

Goals & Objectives

Students will:

- review the properties of magnets.
- review the definition of solids, liquids and gases.
- understand there are some substances that defy the definition of solids, liquids and gases and cannot be classified as distinctly one or the other.

Discussion

Optional Study and Discussion

1. **Make your Own:** Make your own magnetic putty! Use one cup of corn starch and one-half cup of water. Mix in a bowl!

2. **History:** Research when magnetic putty was invented. (WWII)

3. **Critical Thinking:** Brainstorm what are practical uses for this putty. Give students ample time to discuss in groups or pairs and then put all answers on the board. Then research other ideas.
(Fix a rocking table by putting putty under the shorter leg. Building up hand strength after an injury. Lifting Fingerprints.)

4. **Advanced Enrichment:** Research and discuss the other two types of matter: plasma and Bose-Einstein condensates.

HIGH ENERGY
- Plasma
- Gas
- Liquid
- Solid
- Bose-Einstein Condensate

LOW ENERGY

Activities

1. Review solids, liquids and gases. Put the three states on the board with definitions in three columns. Very simply, solids have a FIXED shape and liquids and gases do not.
   - a. Solids have a definite shape, definite mass and definite volume.
   - b. Liquids do not have a definite shape, but do have a definite mass and definite volume.
   - c. Gases do not have a definite shape, do not have a definite mass and do not have a definite volume.

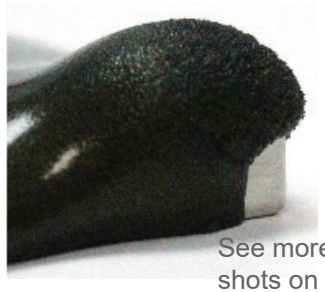
Note

It is always best to DO an experiment ahead of time to be able to best present it to the class.

2. Introduce to the students a glass of water. Discuss this is a liquid state of H20. Show them a piece of ice. What state is this? Solid. Turn on the vaporizer or humidifier. What state is the H20 now? Gas. Ask students to discuss in pairs or groups for 5 minutes different examples of solids, liquids and gases. Put the student answers on the board.

3. Show students the magnetic putty. Ask students which state of matter is this? Does it have a fixed shape? Then it could be classified as a liquid. Does it look like a liquid? Go through each definition of the three states of matter. Show that the magnetic putty bounces and tears. While it has a definite mass and definite volume it does NOT have a definite shape. But it doesn't necessarily act like a liquid. It is a malleable solid. It has properties of both a solid and a liquid.

4. Review what students know about magnets. Show students that the magnet included attracts to the magnetic putty. A magnetic material is mixed in with the putty making this putty an original substance. Lots of fun!



See more action shots on Page 4.

Let students experiment with the putty… ripping, tearing, bouncing, squishing, playing with the magnet. Depending on the number of students you can give each student a piece of the putty or pass the entire putty around.