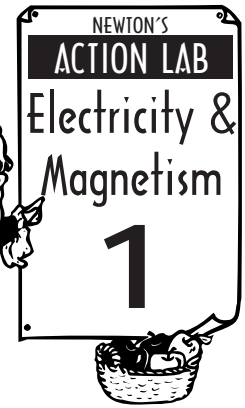


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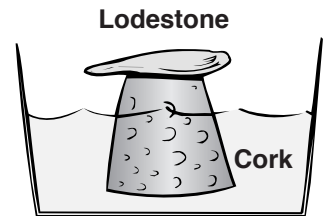


Magnets in Our World



Newton Explains Magnets

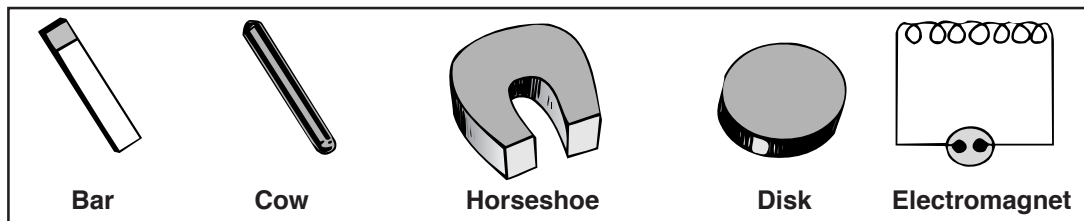
The earliest magnets were natural magnets called lodestones. They were rocks that had magnetic qualities. Ancient Chinese and Greeks studied them. They believed that lodestones had medical uses. They even discovered that a lodestone mounted on a cork would float in water and act as a compass.



Try to obtain a lodestone. Experiment to see if it can pick up a pin or small paper clip.

Today there are many kinds of magnets. Some are made of iron or steel. Some are made from ceramics mixed with iron filings. The best magnets are made of an alloy called **alnico**. This name tells you that these powerful magnets contain **al**uminum, **ni**ckel and **co**bal.

KINDS OF MAGNETS



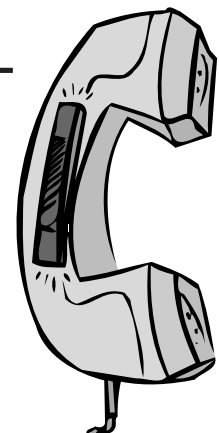
You may be wondering about the “cow” magnets. They are powerful magnets about the size of your little finger. Farmers have cows swallow them to get rid of the wire they may have taken in with baled hay.



Magnets Are Useful

You wouldn't have electricity in your home without magnets. Your television has many magnetic parts. Without magnets your telephone would not work.

On the next page is a list of devices that use magnets. The letters are scrambled. Can you unscramble them?



Magnets in Our World

Name _____

- | | |
|------------------|--------------------|
| 1. dirao _____ | 2. morots _____ |
| 3. passcom _____ | 4. darar _____ |
| 5. lebsl _____ | 6. srekaeps _____ |
| 7. yots _____ | 8. temers _____ |
| 9. pate _____ | 10. epcuotmr _____ |

There are hundreds of other uses for magnets. List some magnets that you might have at home, school or work.

1. _____
2. _____
3. _____
4. _____
5. _____

Magnet imagination time. Can you come up with two novel uses for magnets? Your imaginary magnets can be any size, shape or color you wish. A sketch might help.

1. _____

2. _____



Magnetic Attraction

Magnets attract some objects. Magnets have no effect on other objects. Let's experiment to find what materials respond or do not respond to a magnet.

Magnets in Our World

Name _____

1. Obtain a magnet and a box full of various materials from school or home. Your home workshop or garage may have a wide variety of materials. Don't forget coins.
2. Try picking up various objects with your magnet, and fill out the Magnet Data Table. Check the correct column for each material.

MAGNET DATA TABLE

Kind of Material	Attracted by a Magnet	Not Attracted by a Magnet
Example: Dollar bill		✓
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

3. Look over your data table. What **type** of materials are attracted by magnets?

4. You may have answered *metals* in the above question. What kind of metals were **not** attracted? _____
5. You made a goof and mixed thumbtacks in sand. What would be the easy way to separate the tacks and sand? _____

Newton Note: You have discovered that magnets mainly attract materials containing iron. Scientists call these ferrous.

Name _____



Magnetic Passage

Now let's ask your magnet another question. What materials will let the magnet forces go through them?

1. Obtain various materials that may act as a barrier to magnetism. Use paper, cardboard, wood, cloth, aluminum foil, glass, plastic, iron sheets, water or ?
2. Try to attract a paper clip through various barriers. List the materials that let the magnetism through.

List the materials that did not let the magnetism through. _____

3. Suppose magnetism was discovered to be harmful. What material would you make clothes of to protect yourself from magnetism? _____

