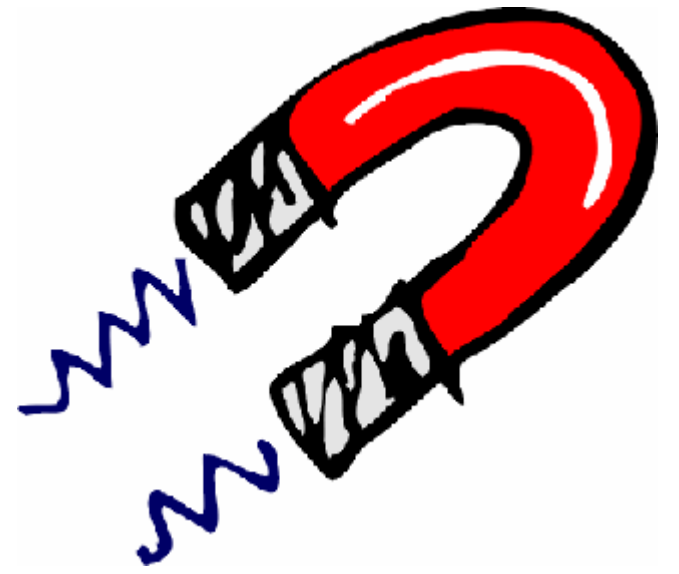


Magnetism



magnets

What do we
already know?



What are we going to learn today?

- ❖ Understand that some materials are attracted to magnets
- ❖ What the characteristics of magnets are
- ❖ That magnets can repel and attract each other
- ❖ How magnets behave
- ❖ What happens when you put two magnets together

Lodestone

There are many legends that tell us about the discovery of magnets.

One of the most common, is that of an elderly shepherd named Magnets, who was herding his sheep in an area of Northern Greece called Magnesia, about 4,000 years ago.

It is said that both the nails in his shoes and the metal tip of his staff became firmly stuck to the large, black rock on which he was standing. This type of rock was later named magnetite, after either Magnesia or Magnets himself.



magnets

wand magnet



bar magnet



doughnut magnet



horseshoe magnet

What are some uses for magnets?

Magnets are in most electronic devices, in fact, anything that has a motor uses a magnet.



They are used to slow down roller coasters and subways.

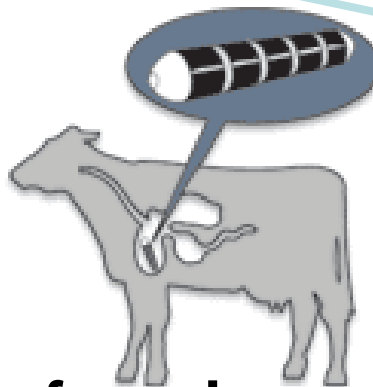


Televisions, computers, and microwave ovens all operate with magnets.



Magnets are used to keep refrigerator doors closed.

Magnets are even placed in the stomachs of cows to catch metals!



More uses of magnets are found every day!

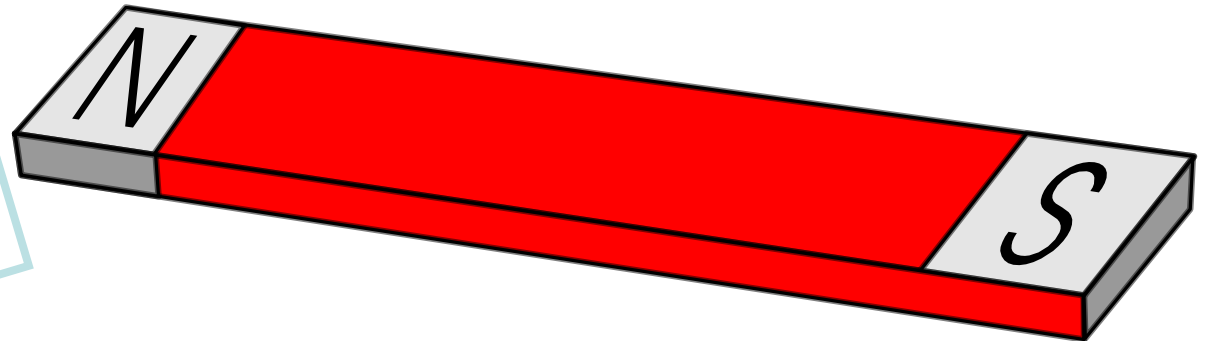
What are the characteristics of magnets?

They are usually made of iron.

They can also repel other magnets.

They have two ends called magnetic poles.

They can attract some materials.



What do all these new words actually mean?

- **Magnet**

A stone or a piece of metal that attracts some other metal.

- **Attract**

To pull towards each other.

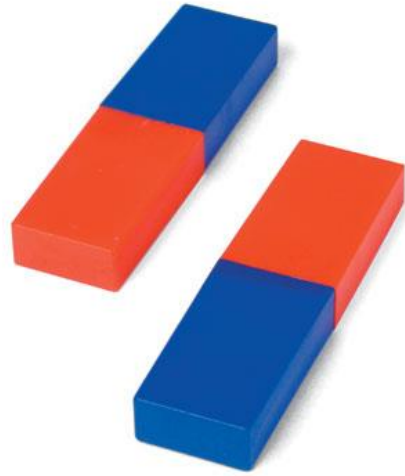
- **Repel**

To push away from each other.

- **Poles**

The ends of a magnet.

poles

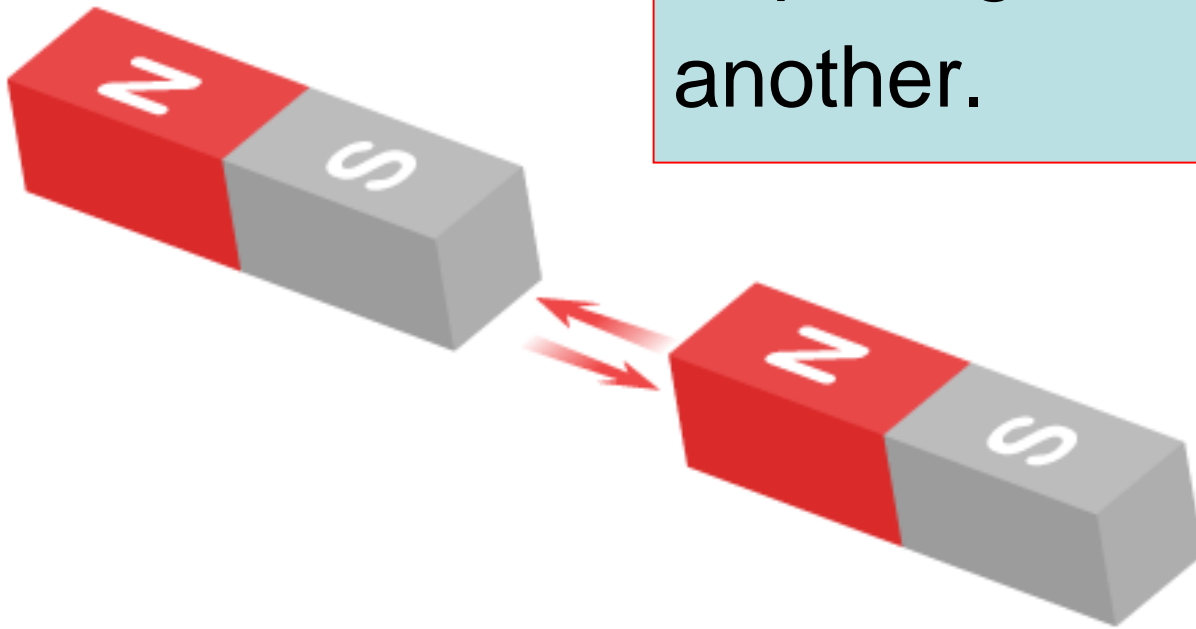


Every magnet has at least one north pole and one south pole.

The blue end of a magnet is usually the **south** pole.

The red end of a magnet is usually the **north** pole.

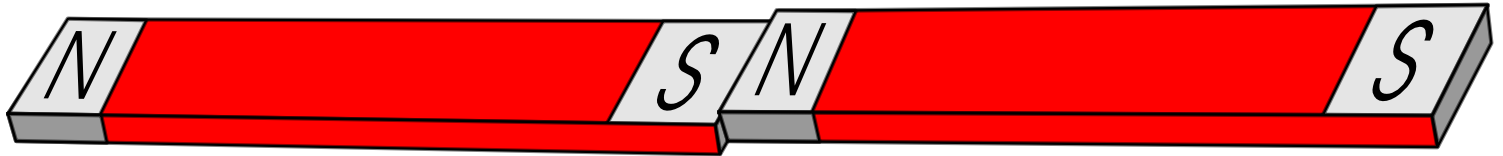
When two magnets are close, they create pushing or pulling **forces** on one another.



These forces are strongest at the ends of the magnets. The two ends of a magnet are known as the **north pole** and the **south pole**.

What did we find out?

- So now we know that “like” poles **repel** each other...
- and that “opposite” poles **attract** each other.



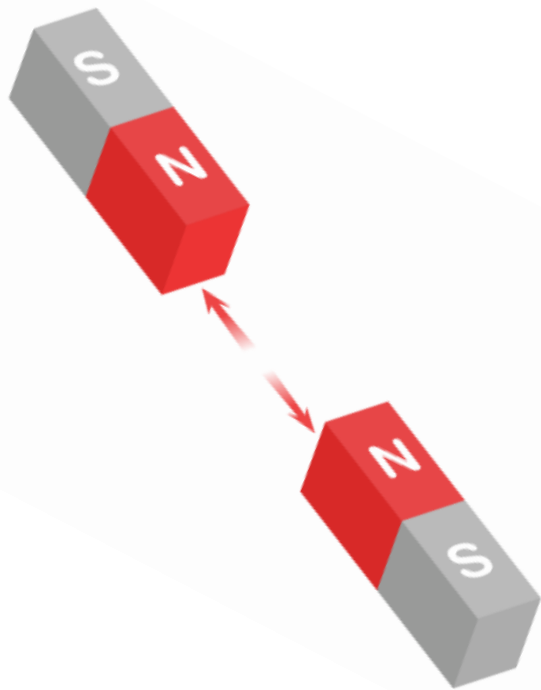
They do this because there is a

FORCE

between them.

Same poles repel

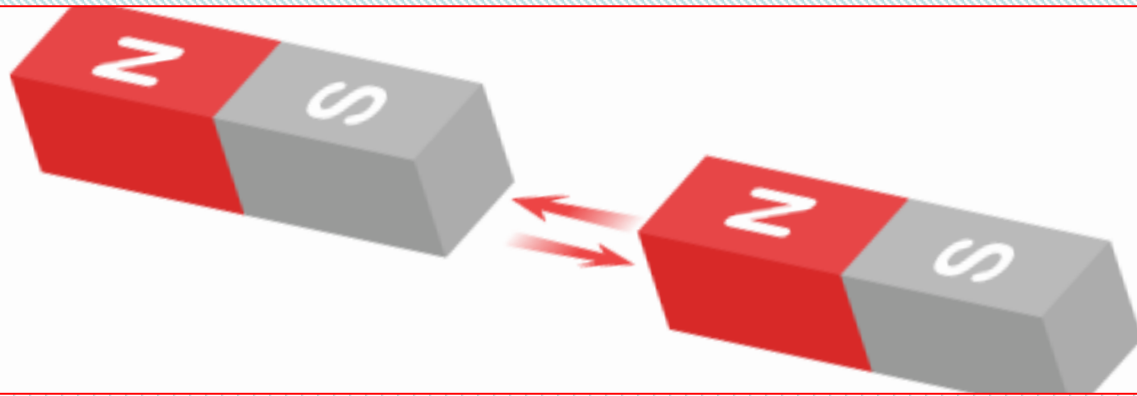
If you try to put two magnets together with the same poles pointing towards one another, the magnets will push away from each other. We say they repel each other.



In this picture two north poles are pushing away from each other (repelling each other).

Different poles attract

If you put two magnets together with different poles pointing towards one another, the magnets will pull towards each other. We say they attract each other.



In this picture a north and a south pole are pulling towards each other (attracting each other).

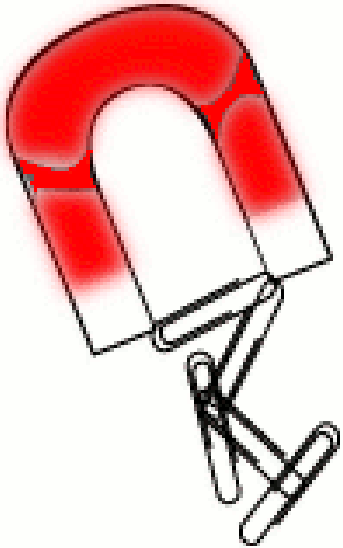
Did you know?

Magnets can attract other magnets but they can also attract magnetic materials.



Magnetic materials are always metals but only a few metals are magnetic.

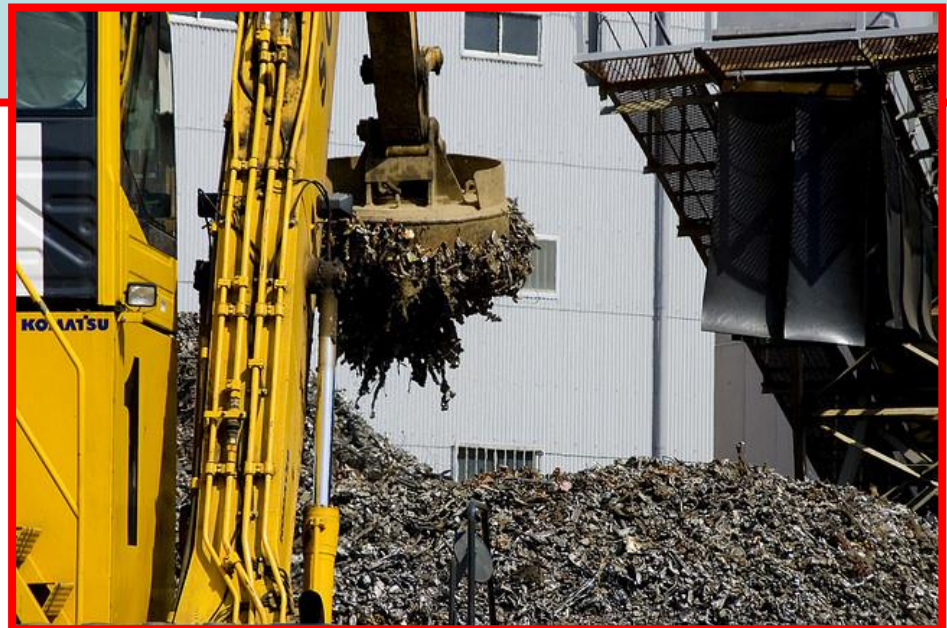
Iron **IS** magnetic, so any metal with iron in it will be attracted to a magnet. Steel contains iron, so a steel paperclip, for example, will be attracted to a magnet.



Most other metals, for example aluminium, copper and gold, are **NOT** magnetic. An aluminium drinks can, for example, will not be attracted to a magnet.

How do magnets help in a scrap yard?

A car is made up of many different materials. When a car is scrapped the different types of metals need to be sorted. A huge rotating magnet is used to sort the magnetic materials from the non-magnetic materials. Separating the materials allows them to be reused.



vocabulary

magnetism	magnet
magnetic	non-magnetic
force	poles
push	pull
repel	attract
north	south