Lesson 14: Magnetism History

Today we really take magnets for granted... have you ever asked yourself why they can stick to your fridge?

The history of magnetism begins with the ancient civilizations in an area known as **Asia Minor** (around modern day **Turkey**).

- In a region known as Magnesia rocks were found that would attract each other. These rocks were called "magnets".
- For a long time magnets were thought to be somehow magical, and were treated as a novelty (they weren't used for anything serious).

Eventually it was discovered that a magnet suspended from a fine thread will spin on its own until one **pole** (end) of the magnet is pointing toward the north. The same pole always ended up pointing north.

- The pole which points north is called the north pole; the other pole that points south is called the south pole.
  - All magnets have a north and a south pole, no matter what shape they might have been bent into. The magnetic field is the strongest at these poles.
- It is not known for sure when this was discovered, but the Chinese were making use of simple compasses by the eleventh century.

As magnets are brought near one another, they exert a force on each other.

- The force can be either attractive or repulsive and can be felt even when the magnets don't touch (force at a distance).
- This leads us to the **Law of Magnetism** which says "**Like poles repel and unlike poles attract**."
- This is like the force between electric charges., but not exactly the same. ***Electrical charges and magnetic poles are different.***

Many people (wrongly) assume that magnets can stick to any metal.

- In fact only a few elements on the periodic table actually have any magnetic properties strong enough to be worth mentioning.
- These elements are known as a group as **ferromagnetic** elements. The name comes from the Latin name for iron... ferrum. The ferromagnetic elements are:
  1. Iron
  2. Cobalt
  3. Nickel
  4. Gadolinium

Did you know?

Cows, not the brightest of creatures, will accidentally eat things like nails and staples while grazing. To prevent these nasty objects from passing all the way through the cow (especially causing damage near the, ahem, *end* of the cow), farmers will feed a cow magnet to a calf to trap the metal. By catching the iron, it is stopped from moving on to areas where it could get lodged and hurt the cow.

As time passed, more and more people tried to explain magnetism.

- William Gilbert (see Lesson 6), wrote a book called De Magnete on the subject.
  - He was able to disprove some old superstitions about magnets, while at the same time presenting his own scientific ideas.
  - He even proposed the idea of an "**orb of virtue**" surrounding every magnet... basically he was describing a **magnetic field**.