

# Magnets

# Brain Pop - MAGNETS

- <http://www.brainpop.com/science/motionsforcesandtime/magnetism/preview.weml>
- Now, do the brain pop quiz!

- A magnet is a material that exerts an attractive force on certain other materials.

- Magnets are made of iron, nickel, cobalt, or a combination of at least one of these elements and other materials.
- Magnets exert a force on these metals as well as on other magnets.

- Magnets can be used to produce electricity, and electricity can be used to produce magnetism.
- Electricity and magnetism are related forces.

# Magnetic Force

- Magnetic force is the push or pull exerted by a magnet.
- Magnets push and pull on each other.

# Polarity

- A magnet has two poles: a north pole and a south pole.
- If you cut a magnet you cannot separate the poles; you would have two new magnets, each with a north and a south pole.

# Polarity

- Each pole of a magnet exerts a magnetic force.
- Whether the force is a push or pull depends on the object the magnet is affecting.



# Attraction & Repulsion

- Magnets attract, or pull toward, metal objects made of iron, nickel, or cobalt.
- Magnets also attract opposite poles of other magnets (north/south).
- Magnets repel, or push away, like poles of other magnets (north/north or south/south).

# Attraction & Repulsion

- Simply put, like poles repel and different poles attract.

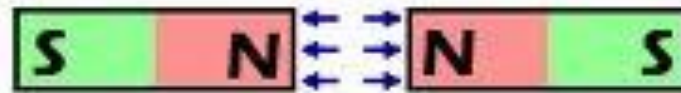
## ATTRACTION



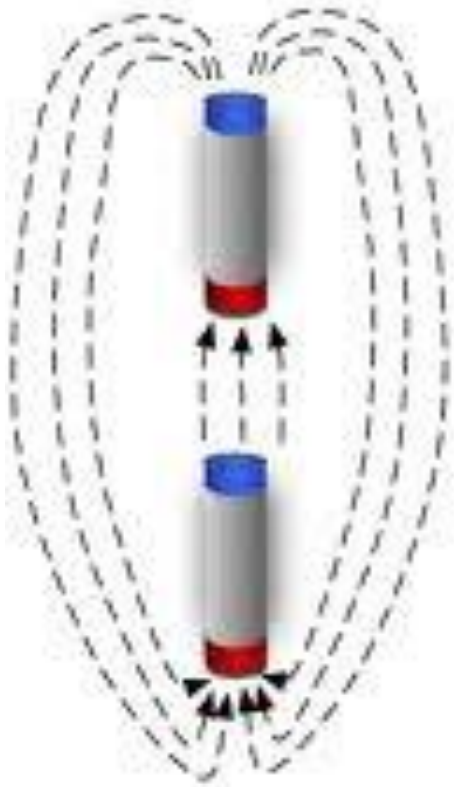
## REPULSION



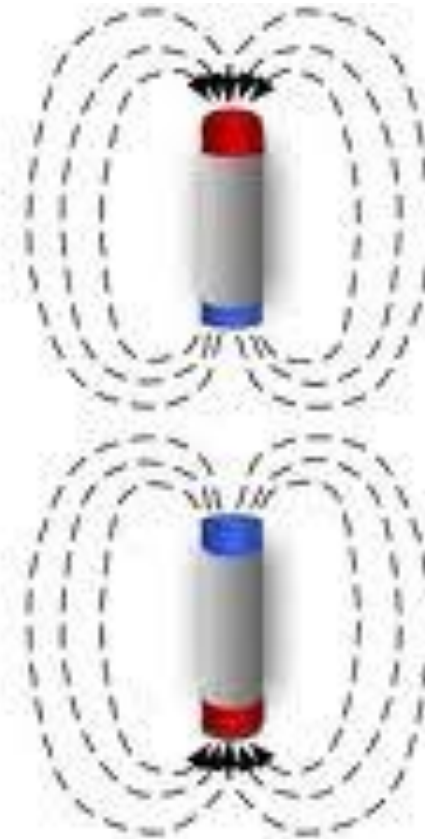
OR



# Magnetic Fields



Magnetic Attraction  
(conventional view)



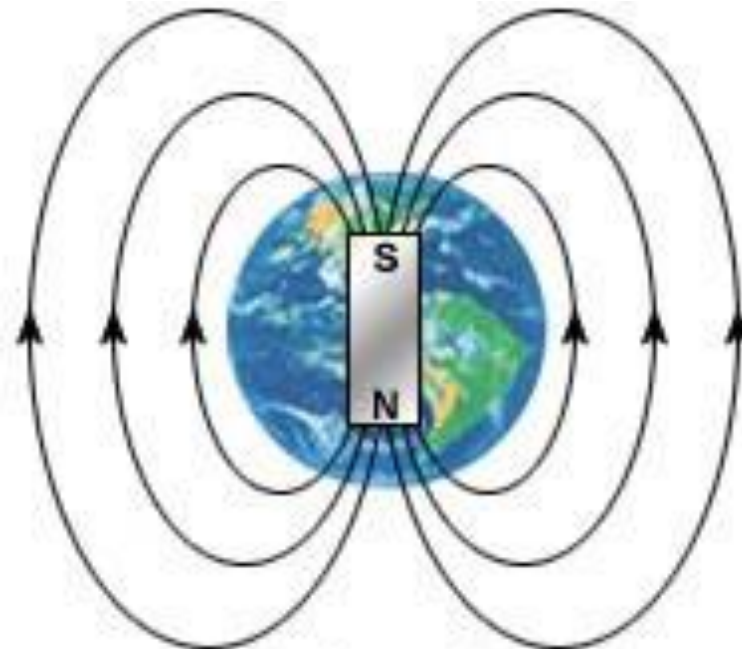
Magnetic Repulsion  
(conventional view)

# Magnetic Fields

- The magnetic force of a magnet is strongest at the poles.
- Magnetic force also exists around the entire magnet as a magnetic field.

# Magnetic Fields

- Earth behaves as if it has a bar magnet running through its center.



Earth's Magnetic Field