

SCIENCE REFRIGERATOR CARDS FOR HOME REVIEW

GRADE 4

Force, Motion, and Energy (SOL 4.2 - 4.3)

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Position – Described by the relative location of another object. Tracing and measuring an object’s position over time can describe its motion.



Speed – Describes how fast an object is moving

Force – Any push or pull that causes an object to stop, change speed, or directions



Friction – The resistance of motion/ HEAT

The greater the force, the greater the change in motion. The bigger the object, the less effect a force will have upon it.

Electrical energy can be transformed in to heat, light, or mechanical energy.



Kinetic Energy
“Motion Energy”
an object that is in motion.

Potential Energy
“Stored Energy”
an object that is not in motion.



Static Electricity

Atoms – Tiny material within all objects
Within atoms are protons (+ charge), electrons (- charge), and neutrons (no charge).

The rubbing together or certain objects causes static electricity.

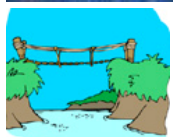
Lightning – The static discharge between objects.

Current Electricity – Continuous flow of electrons



Circuit – The path of an electric current

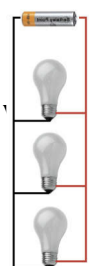
Open Circuit (Like an Open Bridge) does not allow electricity to flow!



Closed Circuit (Like a closed bridge) allows electricity to flow!

Conductors – an object that allows electricity to pass through. Examples of Conductors: Metal

Insulators – an object that DOES NOT allow electricity to pass. Examples of Insulators: Rubber, Plastic, Wood



Parallel Circuit: Has more than one pathway. If one light goes out, the other circuit light stay on.

Series Circuit: Has only one path. If one light goes out, they all go out.



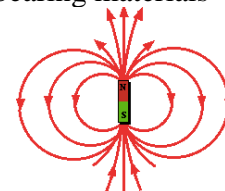
Magnetism



Certain metals such as Iron, Nickel, and Cobalt (INC) are magnetic.

Electromagnet – a non-permanent magnet created by wrapping a wire around certain iron –bearing materials (nail) discovered by Michael Faraday

Magnetic Poles – The stronger point of a magnet (usually north and south)



Magnetic Field – the lines of force extended from the poles of a magnet in an arched pattern defining the area over which a magnetic force occurs.

What happens when you put magnetic poles together?

Like Charges = Repel

| | | | | |
|----------------------------|---|---|---|---|
| (South & South) | N | S | S | N |
| (North & North) | S | N | N | S |

Opposite Charges = Attract

| | | | | |
|---|---|---|---|---------------------------|
| N | S | N | S | North & South) |
|---|---|---|---|---------------------------|

Who are the famous scientists for magnets and electricity?

Michael Faraday

Invented the non-permanent Yet, powerful electromagnet



Benjamin Franklin

Discovered lightning during kite and key experiment



Thomas Edison

Inventor of the light bulb

