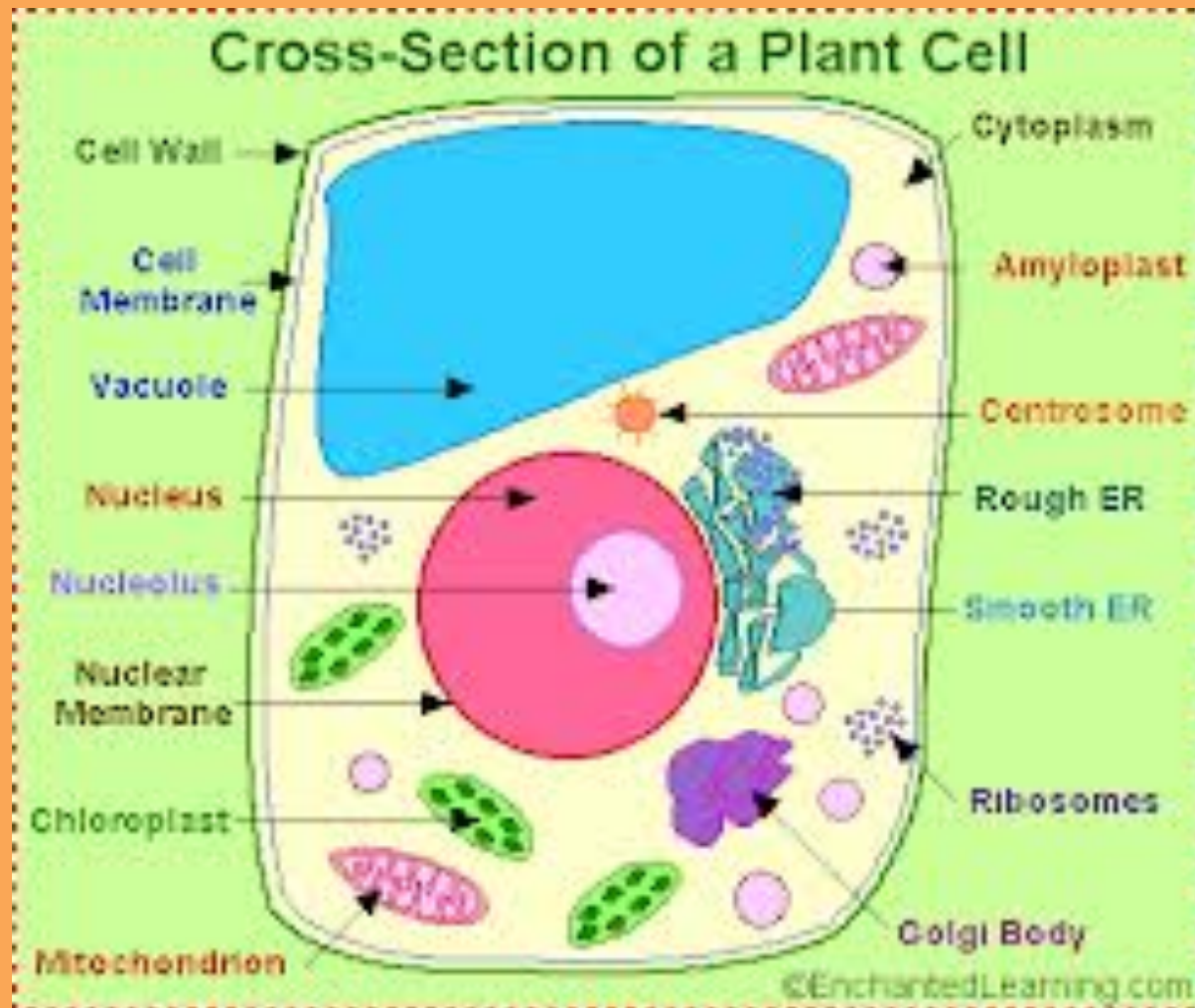


Standard 1- Cells

5 Life Functions

1. Consume food to get energy
2. Make more of their own kind(reproduce)
3. Growth
4. Get rid of wastes
5. Respond to changes in the environment

Plant Cell

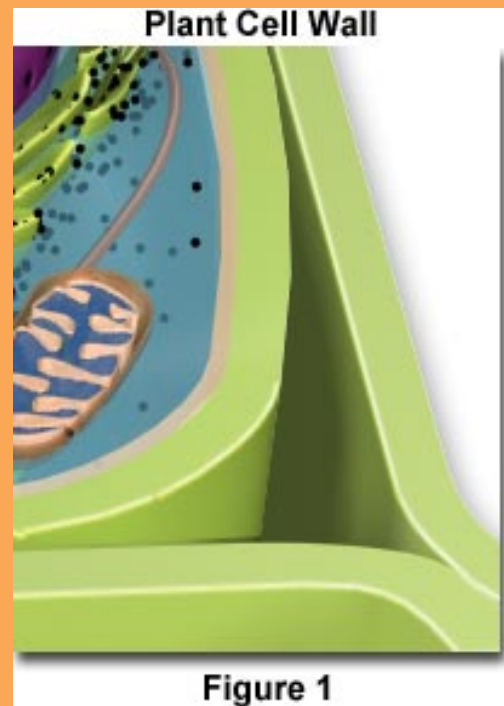


Animal Cell

Cells

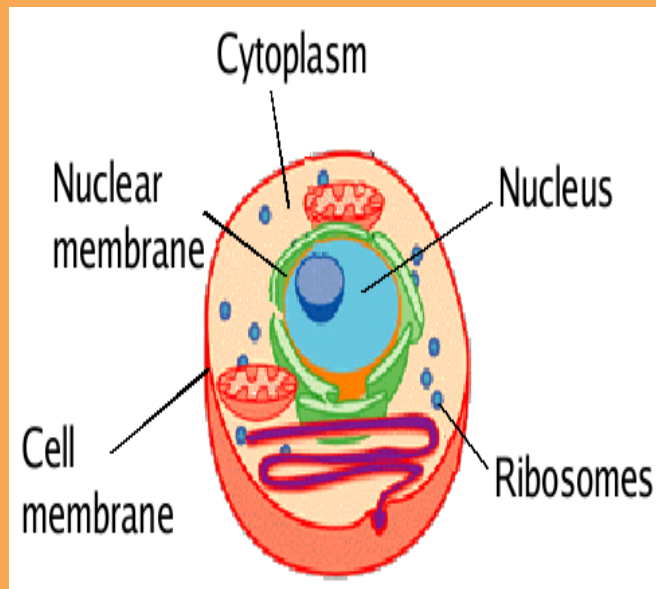
Cell Wall

Protects and supports the *plant* cell



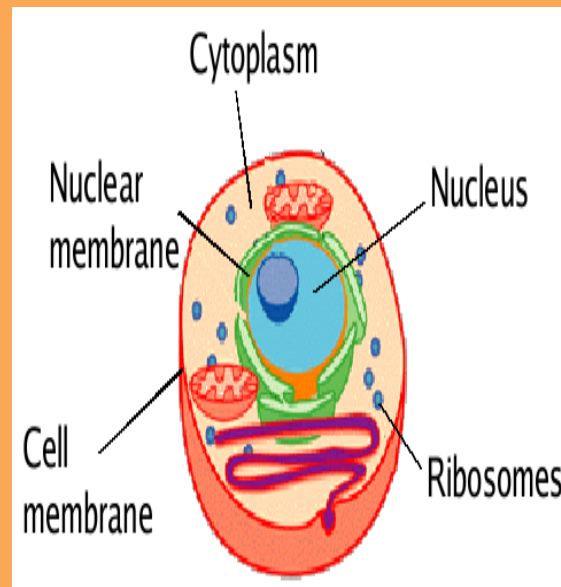
Cell Membrane

the door of the cell- controls what enters and leaves the cell



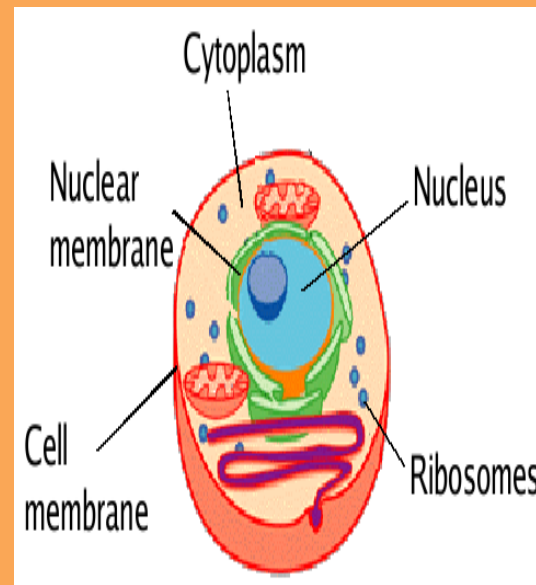
Cytoplasm

Jelly-like substance that fills the cell
Where chemical reactions occur



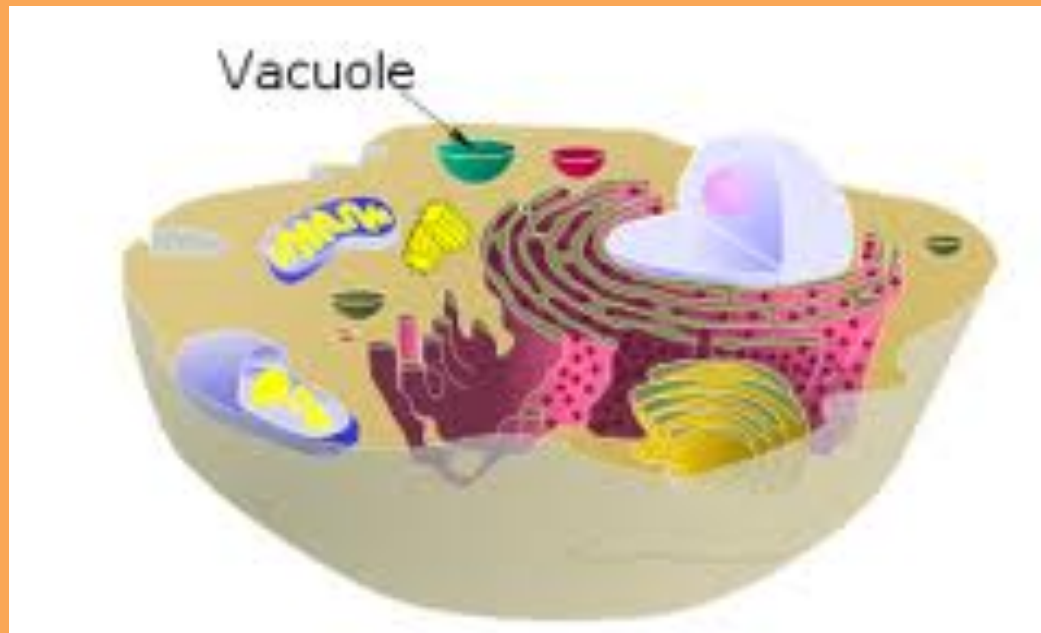
Nucleus

“The Brains” of the cell
-controls all cell activities



Vacuole

The Vacuum cleaner:
Stores food, water, and wastes
Plants have 1 or 2
Animal cells have many



Standard 2- Interdependence

Biotic Factors

All living things

Ex: plants, animals, and bacteria

Abiotic Factors

All non-living things in the
environment

Ex: water, rocks, soil, and light

Ecosystem

The area that is made of biotic and abiotic things

Habitat

The place where a living thing lives

Analyze how an increase or decrease in competition or predation affects an ecosystem.

- Too many animals and not enough food; some animals may die
- habitat destroyed
 - Catching prey
 - building a home
 - Eating plants
 - Ever living thing changes its habitat to meet its needs

Competition

The struggle among living things to
survive

Predator

An animal that hunts other animals for food

Predation

The preying of one animal on others

Prey

An animal that is being hunted

Population

All members of a species that live in that habitat

Ex: the number of

Frogs

Water lilies

Fish

Community

All of the populations combined in a
habitat

Frogs, fish, water lilies, snakes, and
dragon flies

Standard 3- Flow of Matter and Energy

Plants require light energy to grow and survive.

- Most plants use leaves to collect light from the sun and is taken in by chloroplasts
- Water and nutrients flow up from the roots to the leave
- Plants need carbon dioxide and water to make food(sugars)
 - Cells release oxygen as wastes

Producer

-Organisms that make their own food

Consumer

Get energy by eating other living things
(eat Producers)

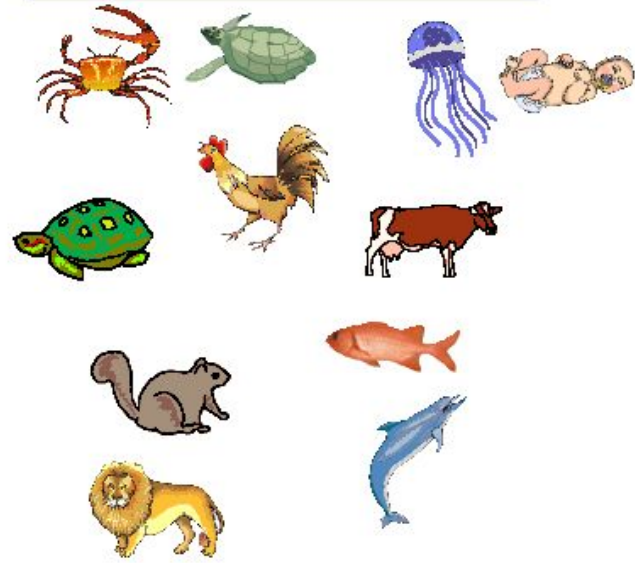
Decomposer

dead and decaying organisms

Producers



Consumers



Decomposers



Herbivore

Eats plants for food



Grasshopper



Panda



Rabbit



Deer

Omnivore

Eats both plants and animals



Pig



Raccoon











Human



Bear

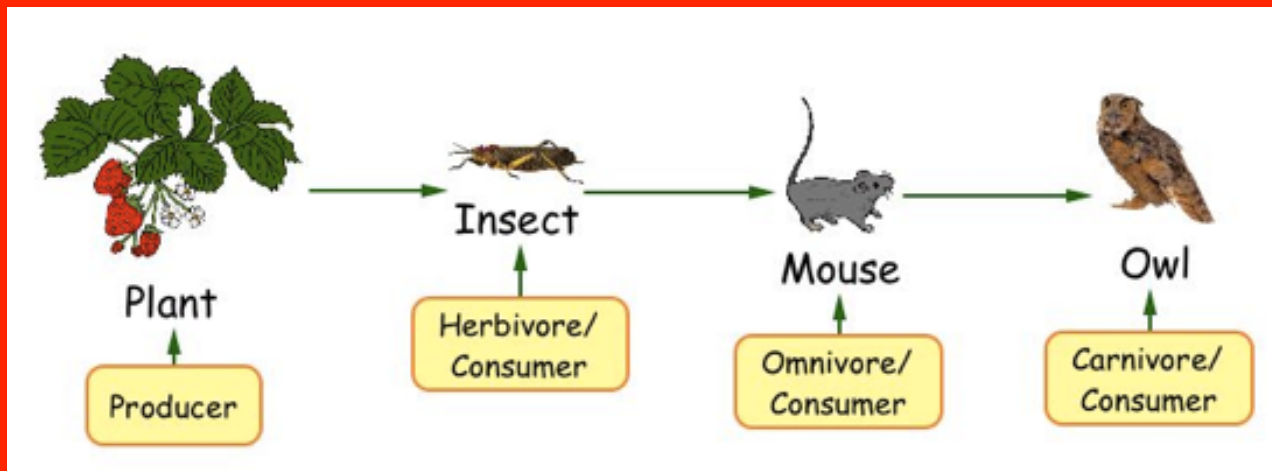
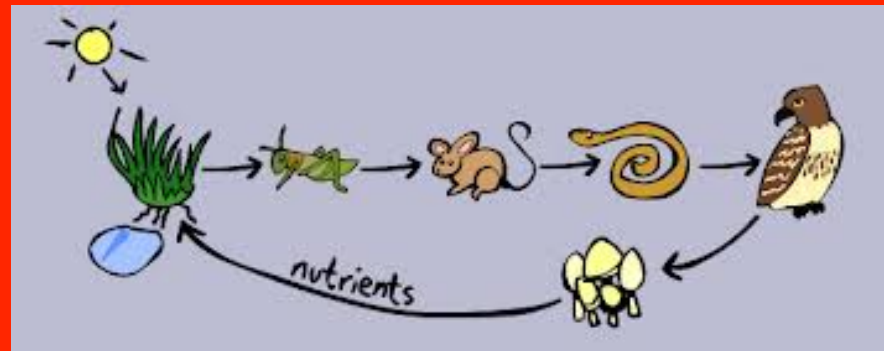
Carnivore

Eats only meat

<p>Polar Bear</p> 	<p>Mountain Lion</p> 	<p>Leopard Seal</p> 
<p>Tiger</p> 	<p>Lion</p> 	<p>Grizzly Bear</p> 
<p>Timber Wolf</p> 	<p>River Otter</p> 	<p>Wolverine</p> 

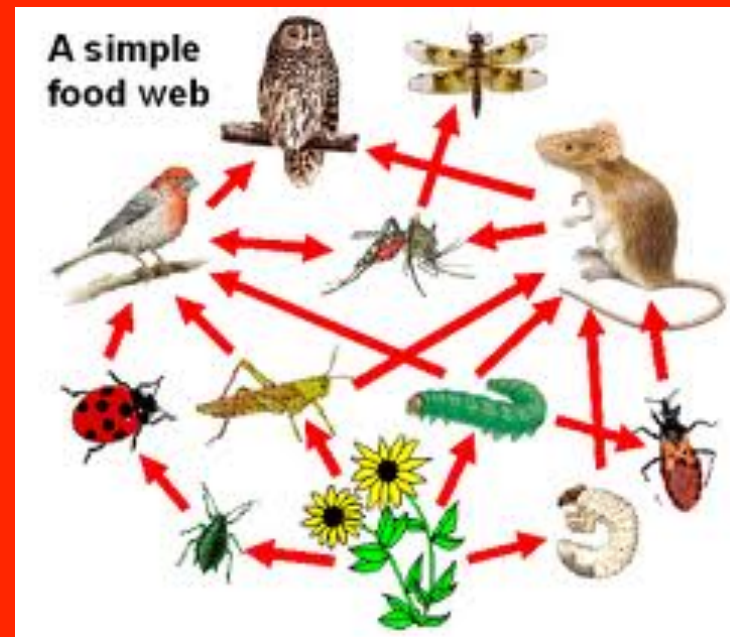
Food Chain

The path energy takes as it flows from one organism to another in the form of food



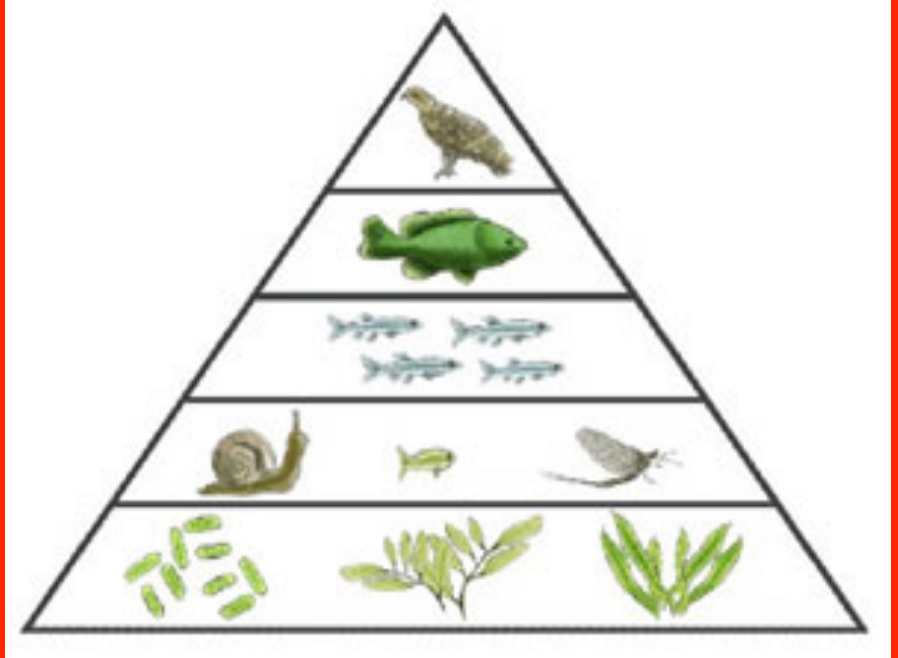
Food Web

The paths energy can take through multiple food chains



Energy Pyramid

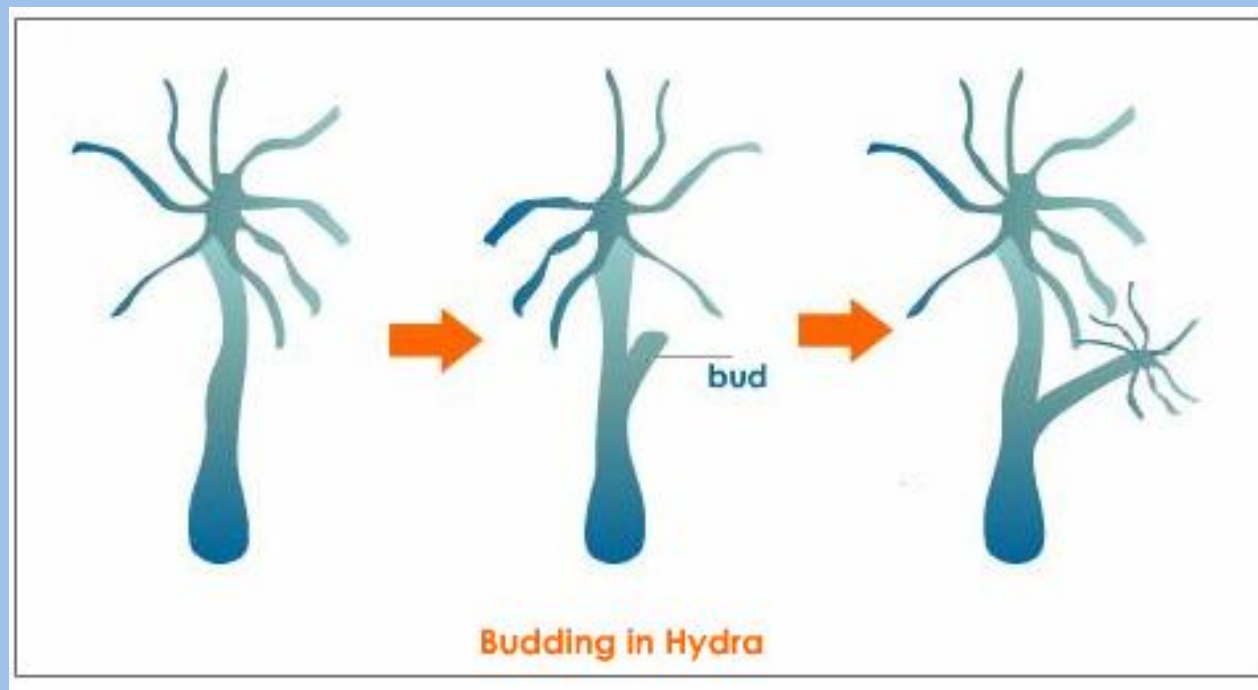
A model that shows the amount of energy at each level of a food chain



Standard 4- Heredity

Budding

1 parent- forms on adult body and eventually breaks off



Regeneration

1 parent- a whole animal develops from part of the original animal



Fertilization

2 parents- when a female's egg and a male's sperm are joined



Life Cycle

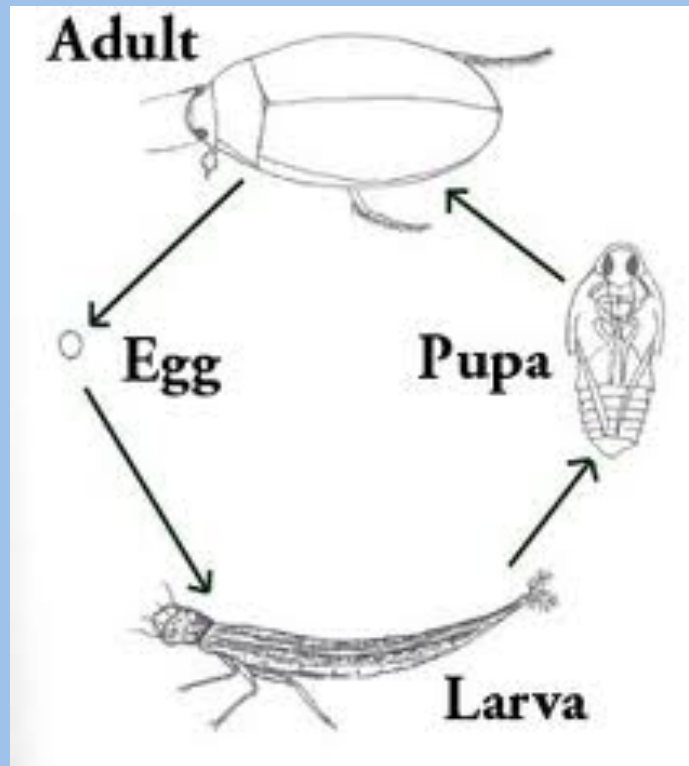
The pattern of birth, growth, reproduction, and death in a species

Life Span

How long an organism can live

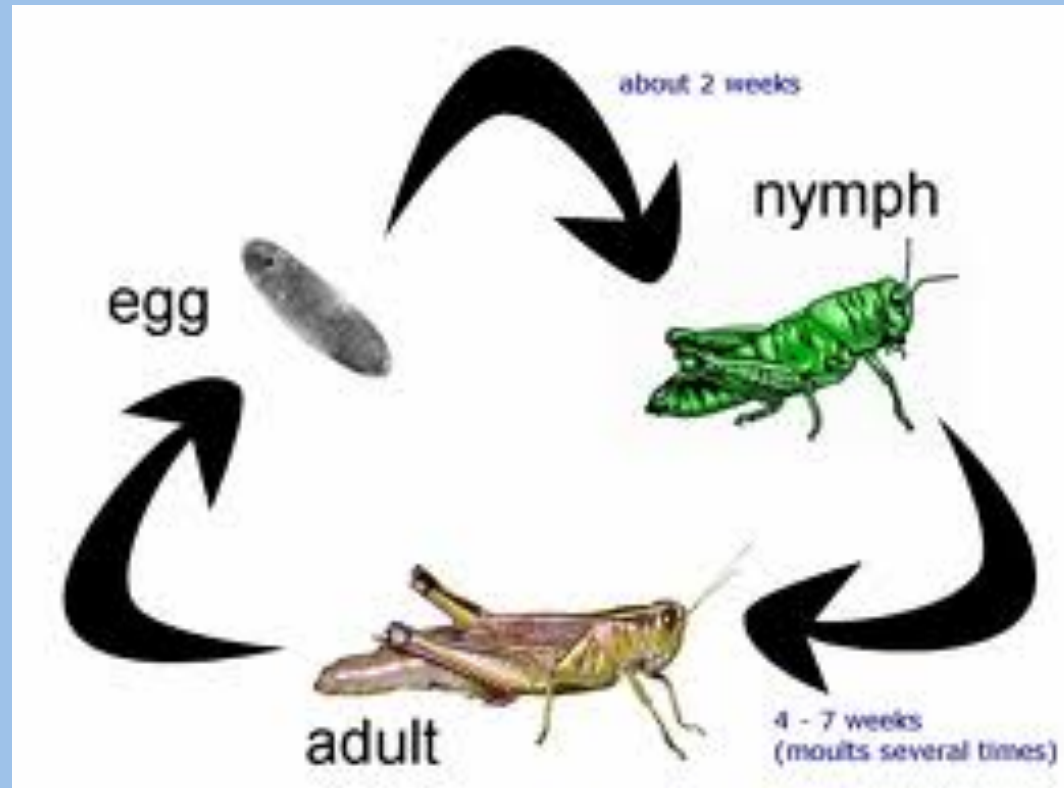
Complete Metamorphosis

4 stages: egg, larva, pupa, and adult



Incomplete Metamorphosis

Has 3 stages: egg, nymph, and adult



Standard 5- Biodiversity and Change

Physical Animal Adaptations

- Different beaks- for different foods
- Fur- keeps warm and camouflaged
- Ears- keep cool, sharp hearing,
- Elephant's trunk- grasp things and eat
- Legs
- Fins
- Teeth

Behavioral Animal Adaptations

Hibernate- animal's body activities slow down and lives off of body fat

Migrate- change location on a regular basis

Animal Adaptations

Camouflage-blending in with its environment

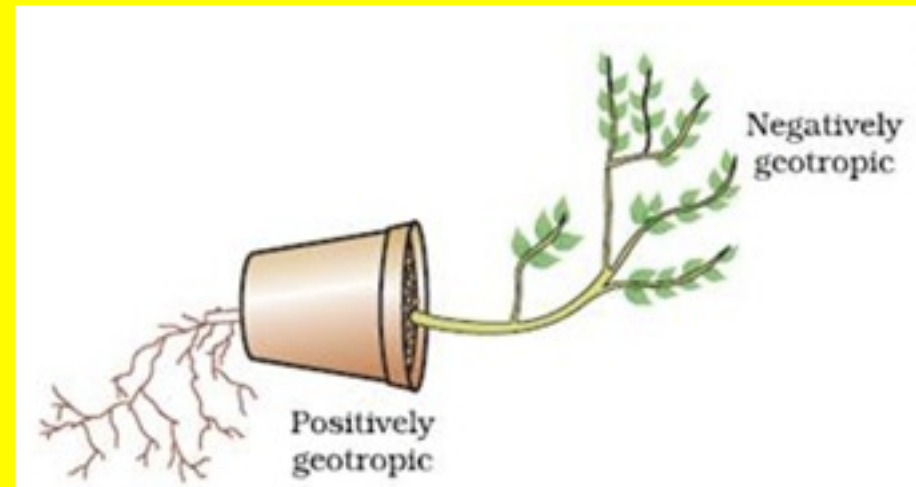
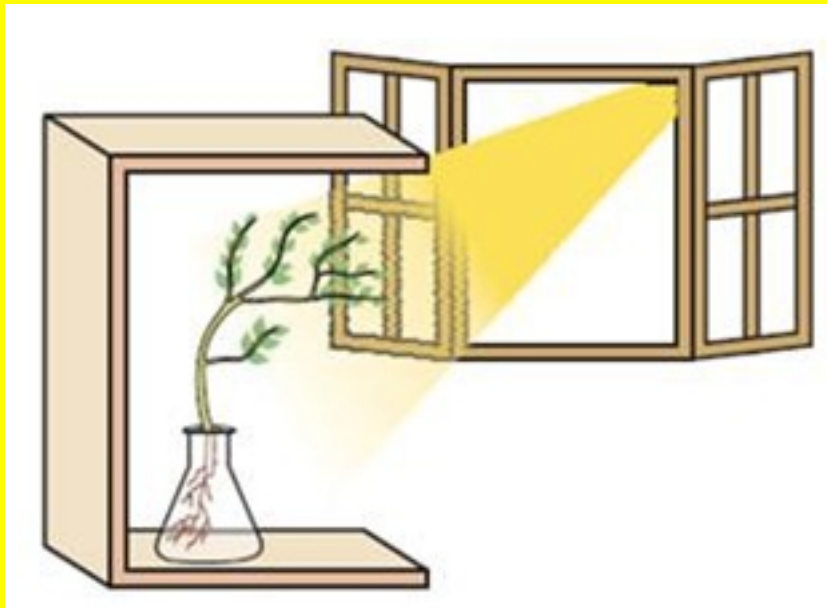
Mimicry-one organism looks like another

Defenses- poison, stay in herds, spray chemicals on predators

Locomotion- movement from place to place

Tropism

The response of plants to light, water, and gravity



Changing Environments

Natural Disasters: hurricanes, landslides, tornadoes, droughts, volcanoes

Living things: change habitat, overuse resources, pollution

Extinct: no longer living

Endangered: numbers of species are so low, might become extinct

Thriving: species is doing well

Fossils

- Investigate what environment was like long ago
- Tell us about the lifestyle of the organism that produced the fossil

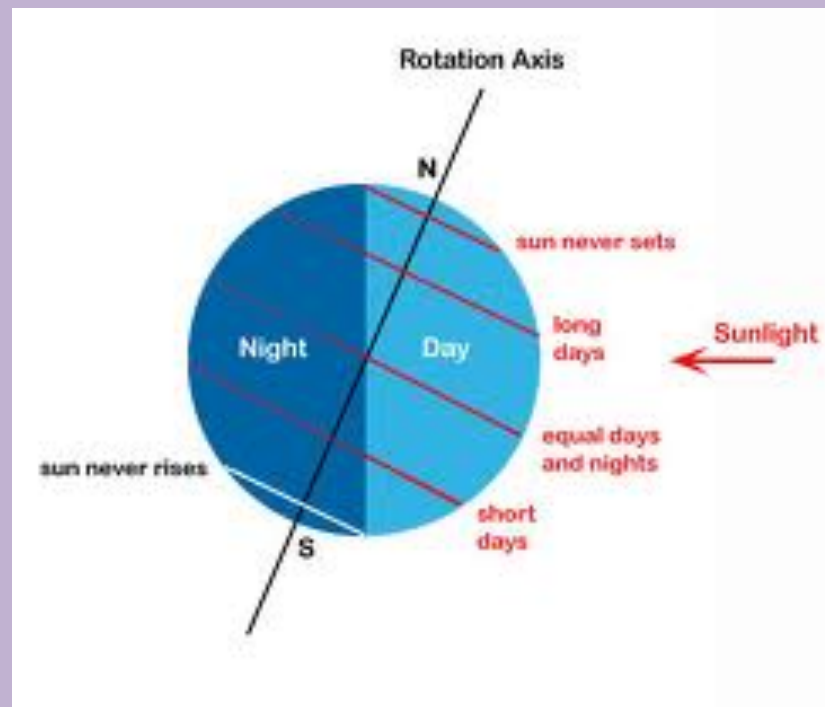
Possible Reasons for Extinction

- Meteorite
- Disease
- Change in climate
- Overeating

Standard 6- The Universe

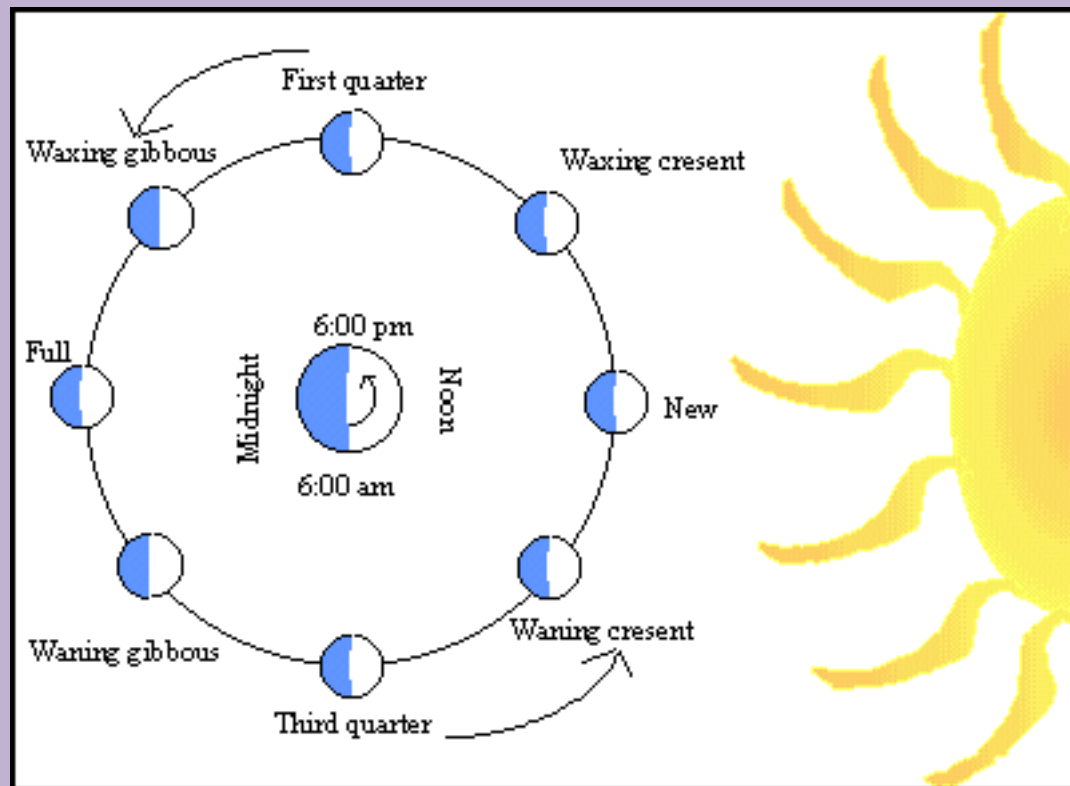
What causes day and night?

- The Earth moves and rotates (spins) around the sun on an axis.
- It takes 24 hours



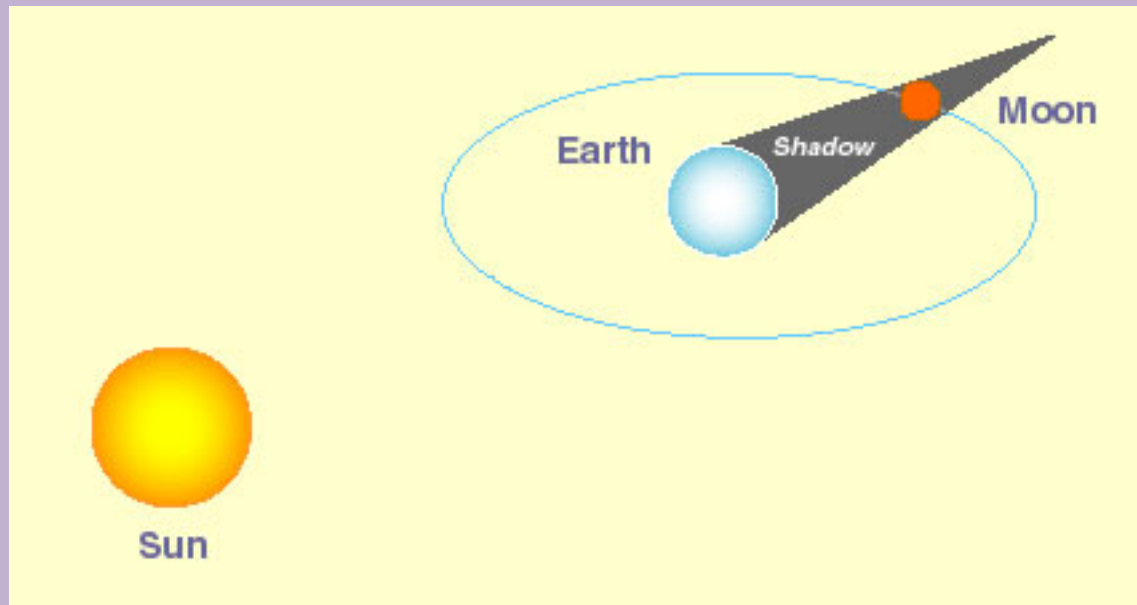
Phases of the Moon

Moonlight on the right, moon grows bright.
Moonlight on the left, moon grows bereft.



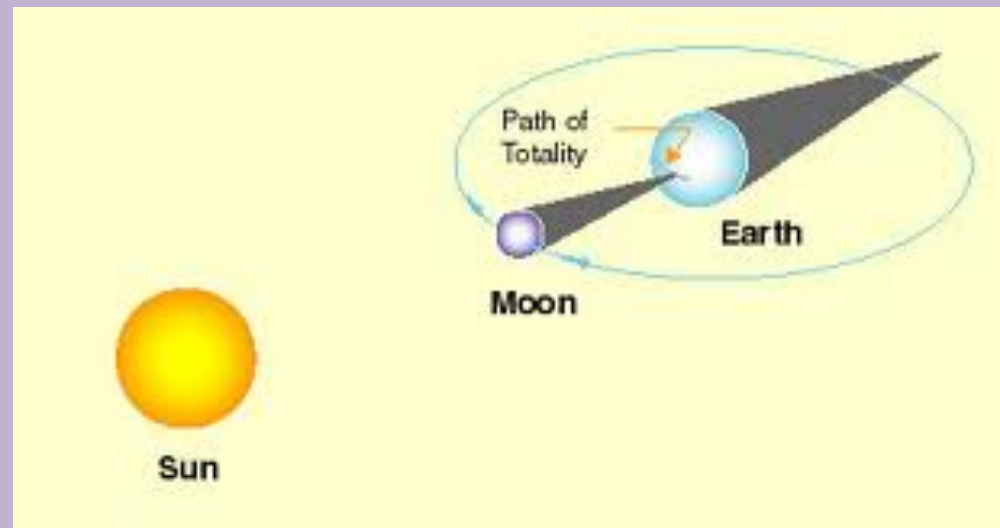
Lunar Eclipse

- Earth casts a shadow on the Moon
- Happens when Earth is between the Sun and the Moon



Solar Eclipse

The Moon casts a shadow on Earth



Standard 7- The Earth

Weathering

-the slow process that breaks down rocks into smaller pieces

-Physical Weathering- change size and shape without changing what it is made of

Ex: Waves, Rainfall, freezing/melting, roots

Chemical Weathering- changes the minerals that makeup the rock.

Ex: oxygen, acids, carbon dioxide

Transportation/Deposition

Moving water carries bits of rock, sand, and soil called sediment. It changes the land as it flows.

Ex: form valleys, flatten land, cut away land

Deposition: the dropping off of sediment

Factors that determine the appropriate use of an earth material

Mineral Resources: minerals used to make products or provide energy

Barite: paint, glass, toothpaste

Fluorite: steel

Sphalerite: zinc (paint, sunblock)

Calcite: glass, paper, cleansers, chalk

TN marble: (limestone) build buildings, make steel, medicines, and fertilizers

Man's Impact on non-renewable resources

Conserve: use Earth's materials wisely

Ex: use less water electricity, compost, find alternative uses for electrical power- wind farms

Standard 8- The Atmosphere

Water Cycle

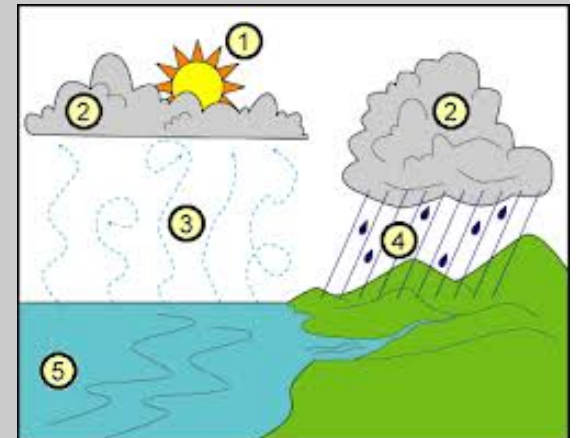
Collection: water collects in lakes, oceans, rivers, and streams

Evaporation: water changes from a liquid to a gas

Condensation: gas changes into a liquid (clouds)

Precipitation: falls as rain, sleet, snow, or hail

Runoff: water flows over Earth's surface



Weather/Climate

Weather: changes day to day

Climate: the pattern of seasonal weather that happens year after year

Standard 9- Matter

Appropriate Tools for measuring

Thermometer Comparisons

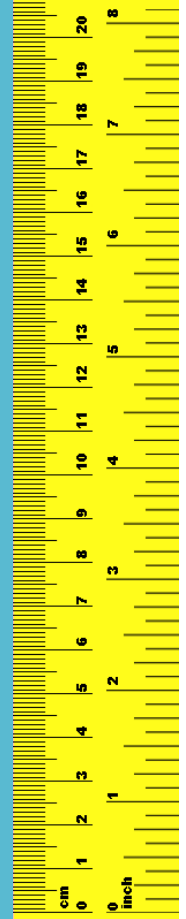
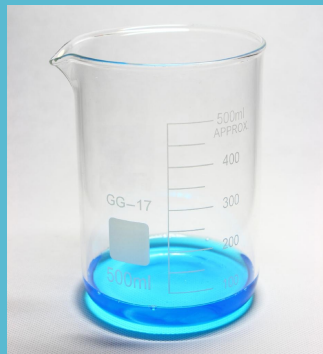


Length: meters, centimeters, inches

Volume: liters- use beakers, measuring cups, or graduated cylinder

Temperature: thermometer

Mass: grams/kilograms- can use pan balance

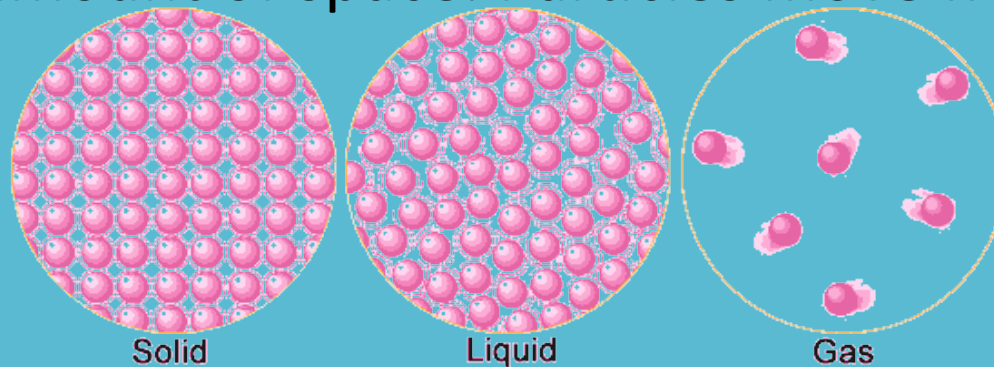


Cause/Effect of Physical Changes

Solid: definite shape and definite amount of space
Particles are packed tightly together

Liquid: does not have definite shape; takes shape of its container BUT it does take up a definite amount of space
Particles can move, but can change places and move around

Gas: does NOT have a definite shape and does NOT take up a definite amount of space. Particles move freely.



Standard 10- Energy

Types of Energy

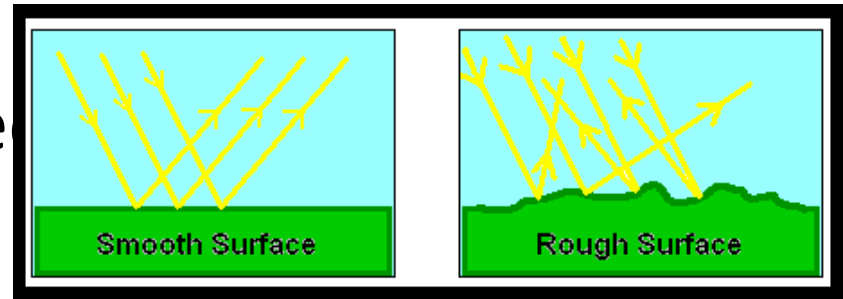
Heat: movement of energy from warmer to cooler objects; measured by temperature

Radiant: travels in waves ex. X-rays, gamma rays, and radio waves

Chemical: stored in atoms and molecules ex. Food and other fuels (natural gas, petroleum, coal)

How Light travels

Reflect: bounces off an object

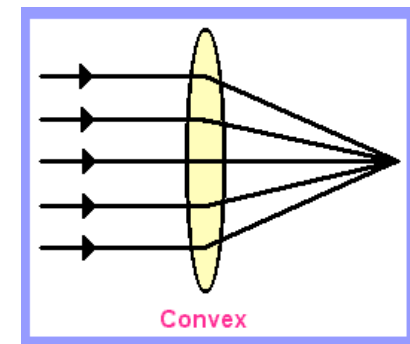
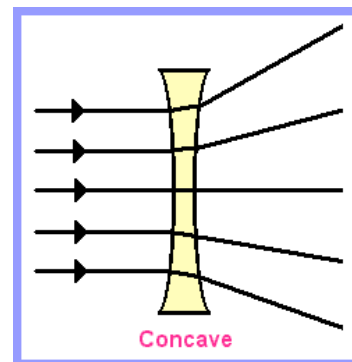


Absorb: light hits an object and is taken in
(black absorbs the most light)

Refract: bending of light as it passes from one material to another.

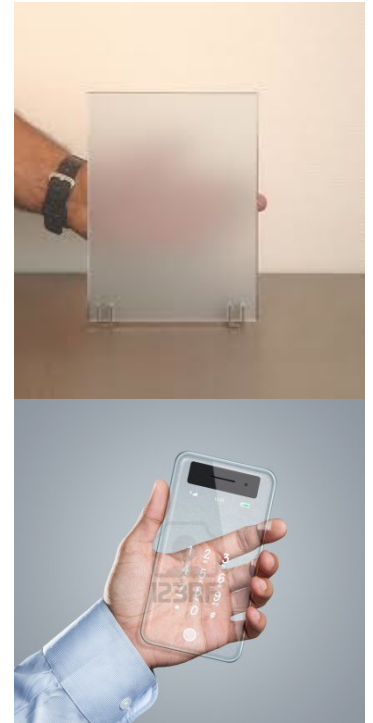
-Concave: looks smaller

-Convex: looks bigger



Translucent, Transparent, Opaque

Translucent- light passes through, but is scattered ex. Wax paper, frosted glass



Transparent-light passes through ex. Glass, air, clear plastic

Opaque- objects block light from passing through ex. Brick wall, cardboard



Standard 11- Motion

How can you tell the position of an object?

You can describe where the object is with respect to the other objects around it.

Ex: right, left, beside, behind, North, East, South, West

Factors that affect speed and distance traveled

Acceleration: change over time in speed or direction

Inertia: an object at rest can stay at rest OR an object in motion can stay in motion

Friction: force that works AGAINST motion

Gravity: the force that pulls objects together

Speed

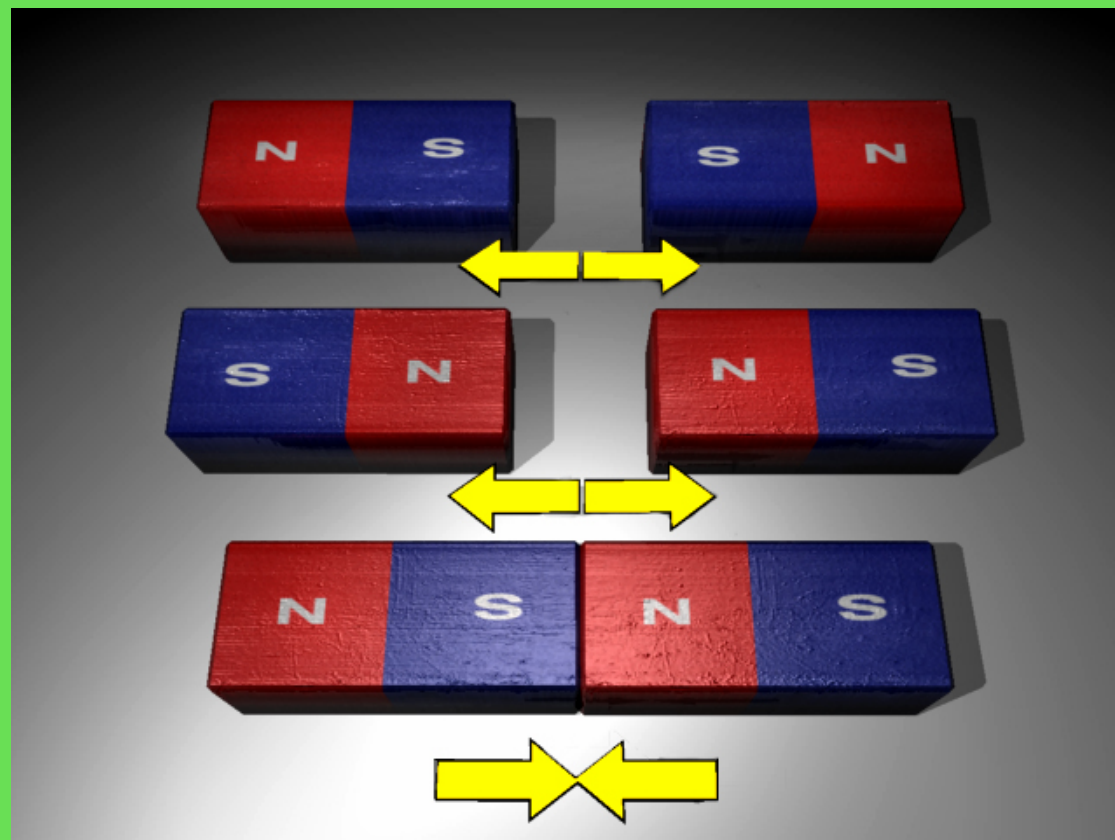
1. Find out how far object moved
2. Find out how long it took to go that distance
3. Divide the distance traveled by time spent moving

Standard 12- Forces in Nature

Magnets

Like magnets: repel or push away

Unlike magnets: attract or pull together



Electromagnets

An electrical circuit that produces a magnetic field



Simple Circuit

Parts of a simple circuit are connected in 1 loop.

