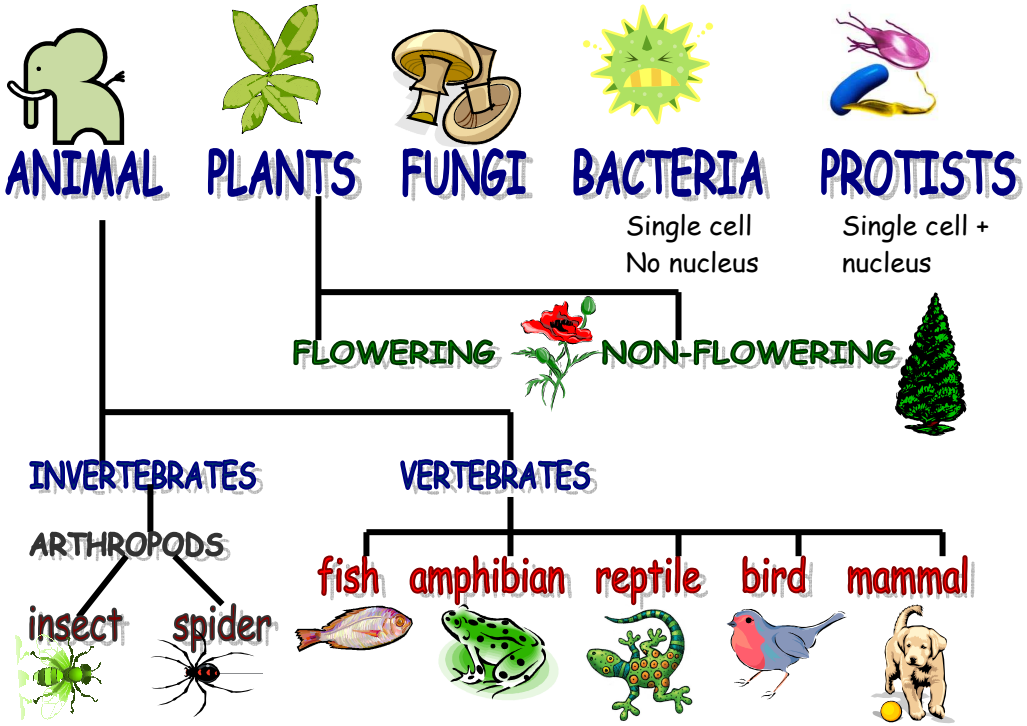
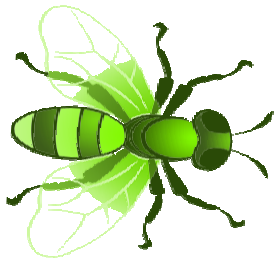
9 sources of ENERGY



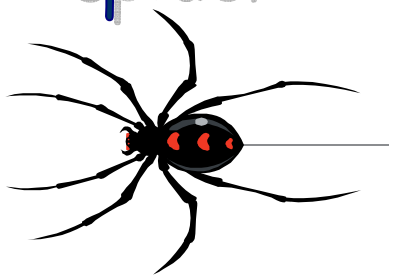
I NVERTEBRATES (NO backbone)

insect



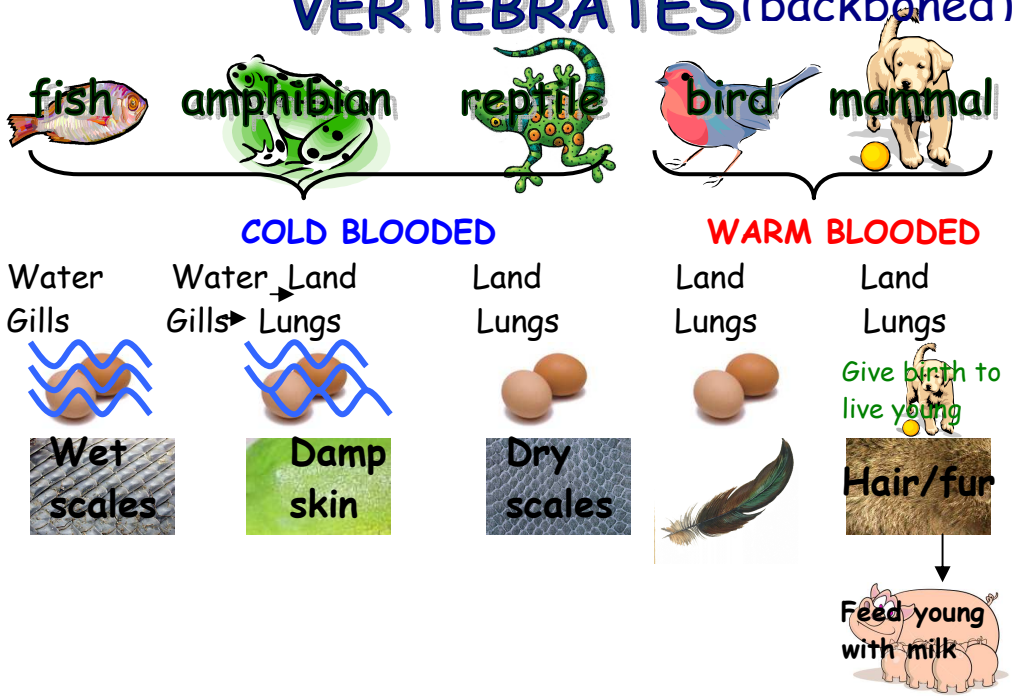
3 main body parts
6 legs
Usually wings

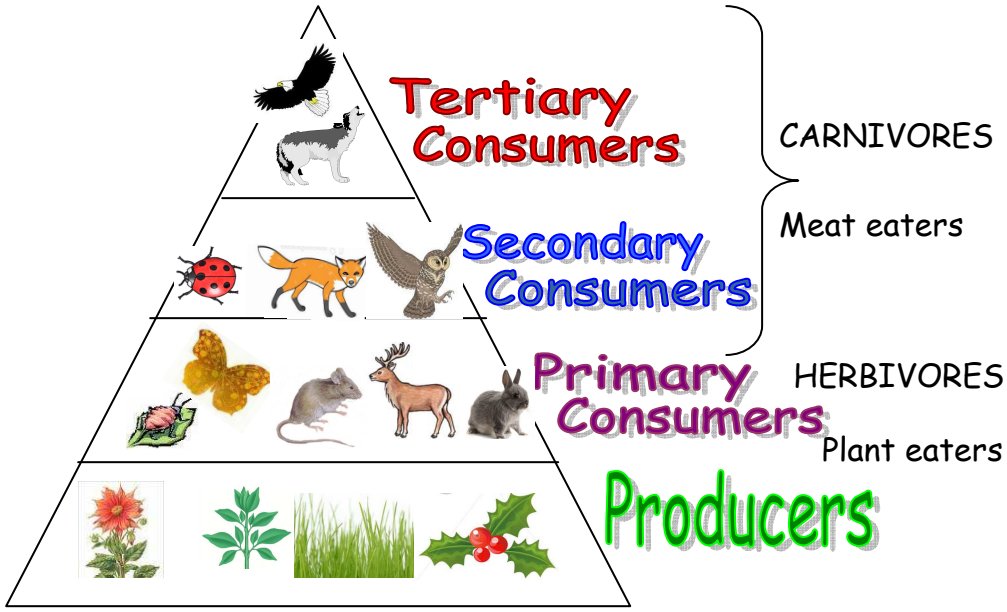
spider

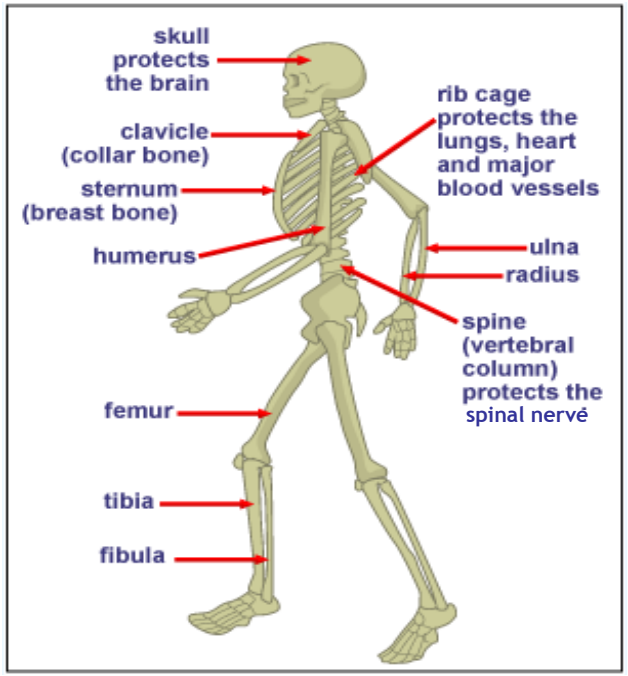


2 main body parts
8 legs
No wings

VERTEBRATES (backboned)







PRODUCER *All plants are producers. They use the Sun's energy to produce food energy*

HERBIVORE *Animals which only eat plants*

CONSUMER *All animals are consumers*

PRIMARY CONSUMER *An animal which eats Producers (plants)*

SECONDARY CONSUMERS *Eat primary consumers*

TERTIARY CONSUMERS *Eat Secondary consumers*

CARNIVORES *Eat only animals, never plants*

TOP CARNIVORE *Is not eaten by anything else*

OMNIVORE *eats both plants and animals*

ROCKS

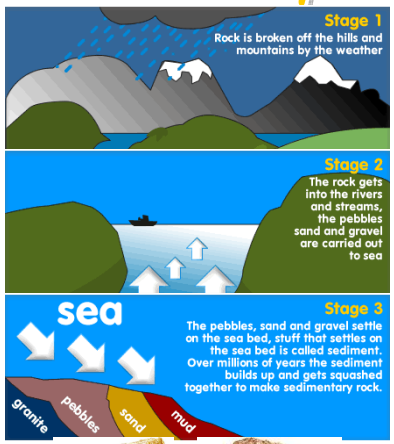
Igneous

Cooled Magma

GRANITE
Cooled Inside earth's crust

BASALT
Expelled from volcano and cooled

Sedimentary



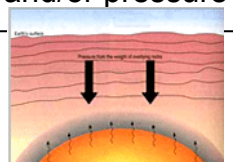
LIMESTONE

SANDSTONE

Crumbly- may contain fossils

Metamorphic

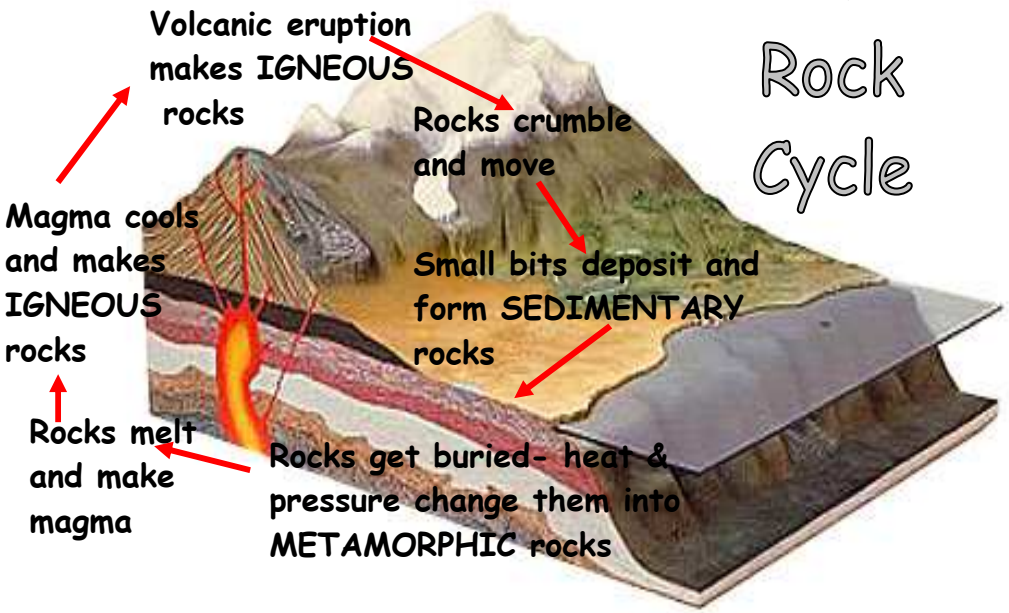
Sedimentary or igneous rocks that have been altered by heat and/or pressure



SLATE

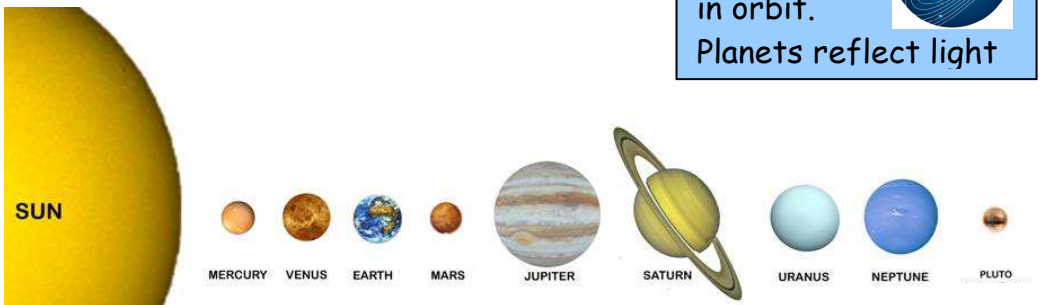
MARBLE

The Rock Cycle

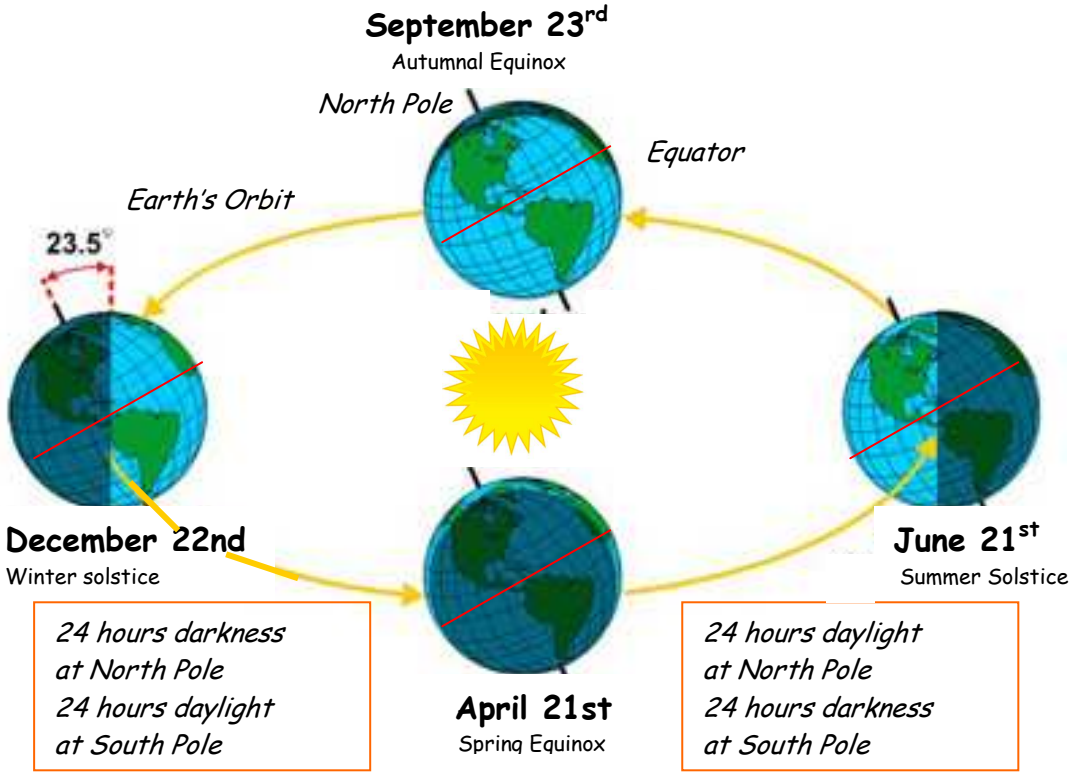


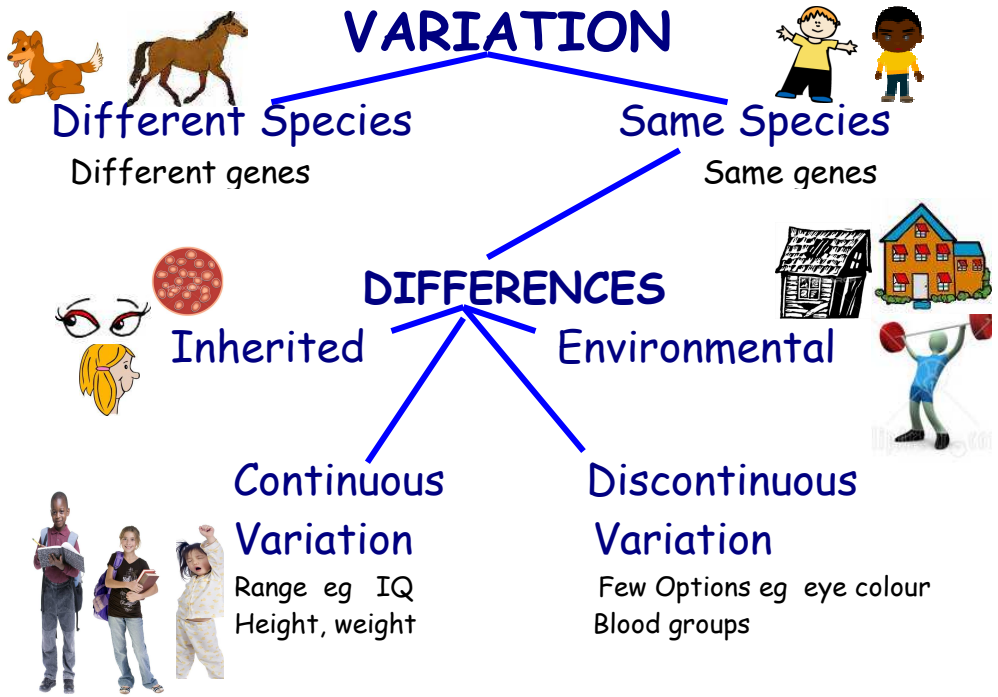
The Planets

Planets orbit the Sun. Gravity keeps them in orbit. Planets reflect light



My **V**ery **E**fficient **M**emory **J**ust **S**tores **U**p **N**ine **P**lanets

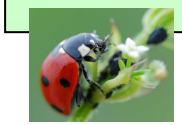


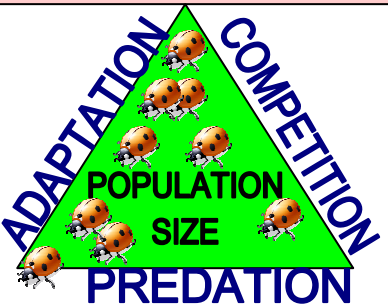


POPULATIONS

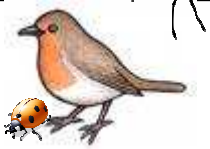
A **HABITAT** is the type of area where a plant/animal lives
A **POPULATION** is the total number of the same species living in a particular habitat
A **COMMUNITY** is all the different organisms living in that habitat

How well adapted the species is to its environment





Competition from other species for food water, shelter etc



How many Predators there are and whether they are successful

Forces

Measure in Newtons

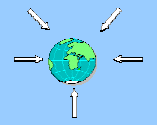
Friction
(2surfaces rub- friction gives grip)

- Air Resistance
- Water Resistance

(makes it difficult to move in water/makes boats float)

Magnetism
(Invisible force, attracting/repelling)

Gravity
(force that makes things fall to the ground)



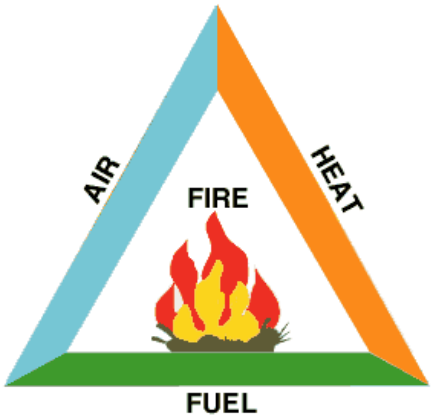
Upthrust (occurs in air and water)
(air resistance slows down falling items)

Static Electricity

Arrows show direction and strength of force (longer is stronger)

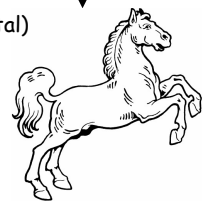
The Fire Triangle

If you remove one of these factors, the fire goes out



REACTIVITY SERIES

Pure	POTASSIUM
Soap	SODIUM
Can	CALCIUM
Make	MAGNESIUM
A	ALUMINIUM
Zebra	ZINC
Into	IRON
The	TIN
Loveliest	LEAD
Horse	HYDROGEN (Non Metal)
Cows	COPPER
Scoff	SILVER
Grass	GOLD



Microbes

VIRUS

Spread by people
Flu,.....
Chickenpox

BACTERIA

Reproduces
Uncooked/
decaying food

FUNGI

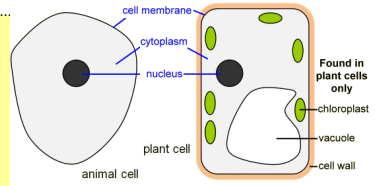
mould
yeast
athletes
foot

MICROBES SURVIVE WOMF

Warmth Oxygen Moisture Food

Can be useful!
Break down food
Bacteria for yoghurt
Decomposes leaves

Animal and Plant Cells



NUCLEUS Controls activities of cell

CYTOPLASM Chemical processes take place here

CELL MEMBRANE Controls movement of substances in and out of the cell

Plant Cells only

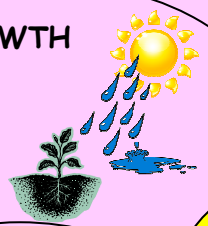
CELL WALL Strengthens the cell

CHLOROPLAST Contains chlorophyll (for photosynthesis)

VACUOLE Contains cell sap

plants life cycle

GROWTH
Sun
Rain
CO2



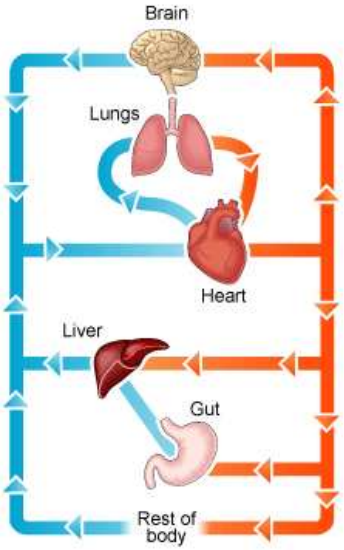
POLLINATION
Pollen carried between plants by
Wind & Insects

FERTILISATION
Pollen(from Anther) sticks to Sticky Stigma.
Pollen joins ovules in ovary to become seeds (and fruit)

GERMINATION
Warmth **WOW**
Oxygen
Water

SEED DISPERSAL
Wind
Animals
Birds
Explosion

The Circulatory System



VEINS return blood to the heart

Blood in veins

- Carries waste products away from cells
- Is de-oxygenated
- Under low pressure

ARTERIES take blood AWAY from the heart

Arterial Blood

- Carries oxygen/ nutrients to cells
- Is oxygenated
- Under high pressure

Red Blood Cell

Contains haemoglobin
Carries oxygen round body

White Blood Cell

Produces antibodies to fight disease

Sperm Cell

Tiny, but very mobile because of its tail

specialised cells

Epithelial Cell

In main body tubes (eg.throat/ nose) traps germs and dust)

Nerve Cell

Carries impulses (messages) round body

Egg Cell

Contains massive food resources to develop embryo

SCIENCE Revision cards

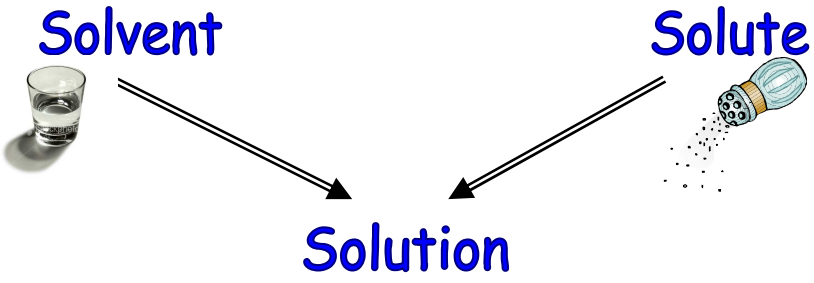
Acid + Alkali → Salt + Water

Hydrochloric Acid + Sodium Hydroxide → Sodium Chloride + Water

$HCl + NaOH \rightarrow NaCl + H_2O$

A bee sting is acid Baking soda neutralises

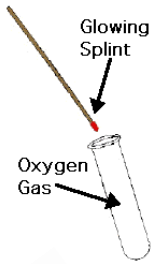
A wasp sting is alkali use acid (Vasps



Soluble ---------can dissolve
Insoluble -------can not dissolve
Saturated ------nothing more can dissolve
Suspension------some bits do not dissolve
(eg muddy water)

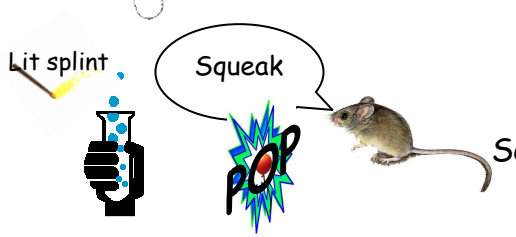
Tests for Gases

Oxygen



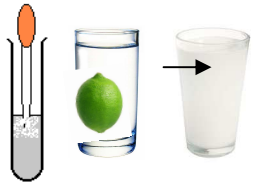
Relights a glowing splint

Hydrogen



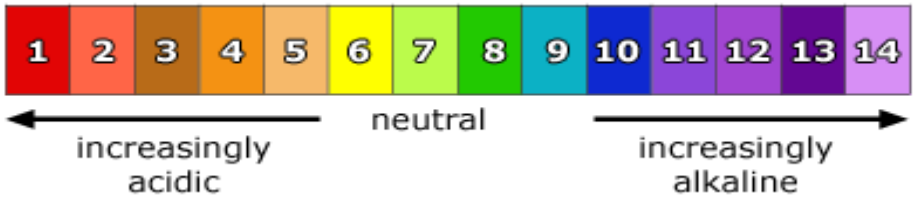
Squeaky pop

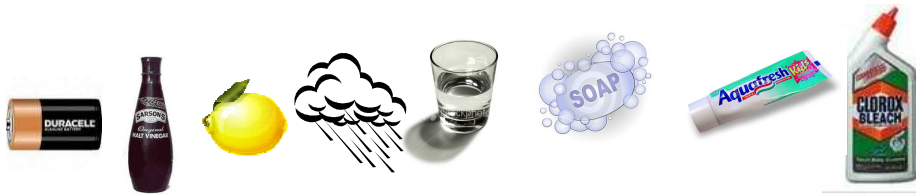
Carbon Dioxide



Turns lime water cloudy

pH Scale

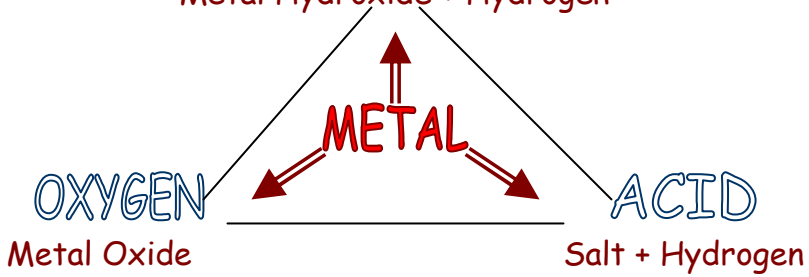




REACTION OF METALS

WATER

Metal Hydroxide + Hydrogen



Metal Oxide

Salt + Hydrogen

HYDROCHLORIC ACID	produces	CHLORIDE SALTS
SULFURIC ACID		SULFATE SALTS
NITRIC ACID		NITRATE SALTS

The 7 Life Processes

M --- Movement

R --- Respiration GLUCOSE + OXYGEN → ENERGY

S --- Sensitivity

N --- Nutrition

E --- Excretion → Getting rid of waste products

R --- Reproduction

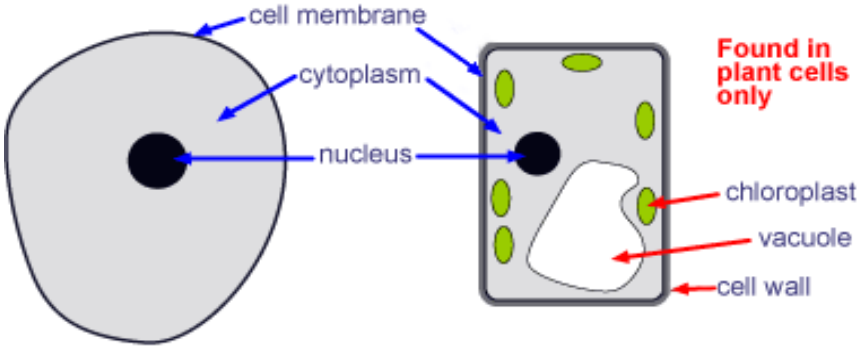
G ---Growth

Photosynthesis

CARBON DIOXIDE & WATER → Sunlight, Chlorophyll → GLUCOSE & OXYGEN

ANIMAL CELL

Found in both cells



PLANT CELL

MITOCHONDRIA

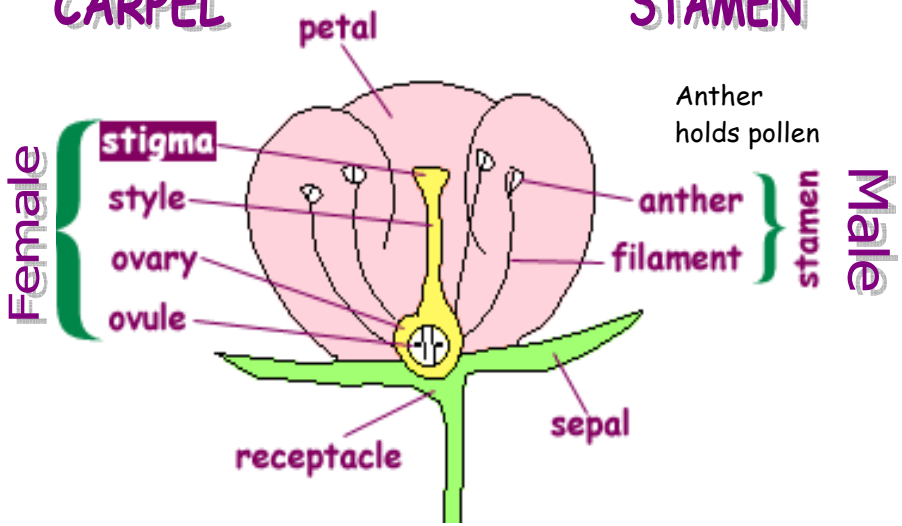
Found in every cell

Smaller than chloroplasts & nucleus

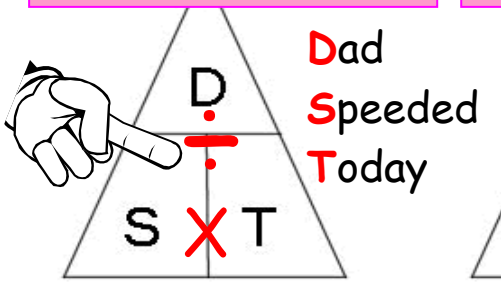
FLOWERS

CARPEL

STAMEN

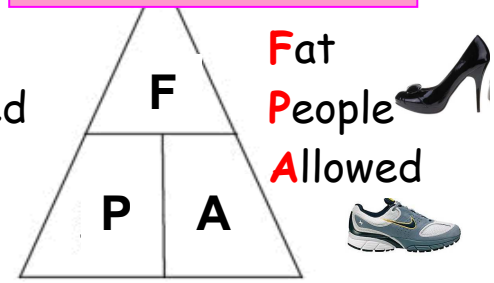


DISTANCE SPEED TIME



Dad
Speeded
Today

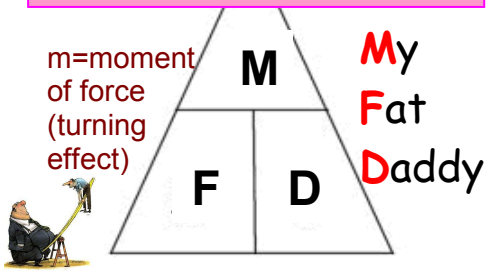
FORCE PRESSURE AREA



Fat
People
Allowed

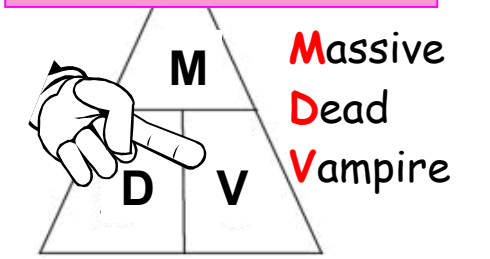
MOMENT FORCE DISTANCE

m=moment of force (turning effect)



My
Fat
Daddy

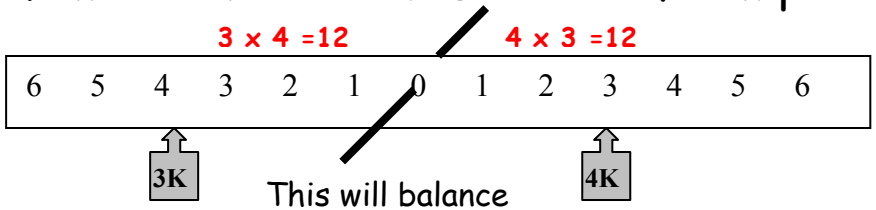
MASS DENSITY VOLUME

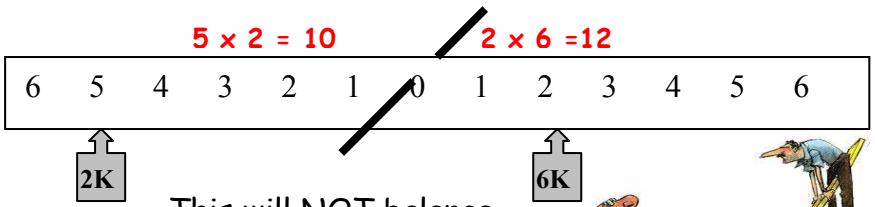


Massive
Dead
Vampire

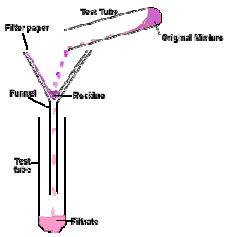
Moment - turning force

Moment = Force X Distance from pivot





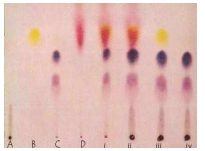
Filtration



Evaporation

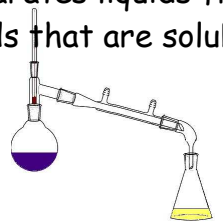
Chromatography

Separates dyes



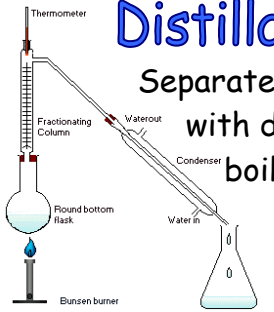
Distillation

Separates liquids from solids that are soluble

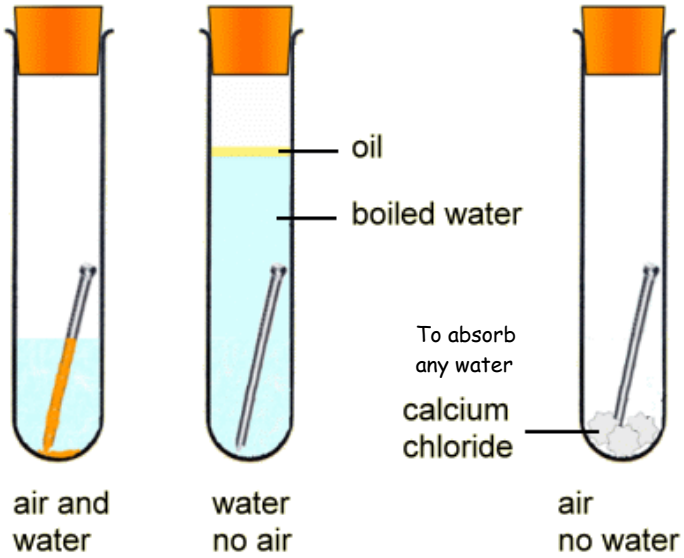


Fractional Distillation

Separates liquids with different boiling points



IRON + WATER + OXYGEN ⟹ IRON OXIDE (RUST)



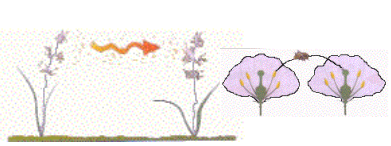
Respiration

Turns food into Energy

Glucose & Oxygen → Carbon Dioxide & Water

→ Energy

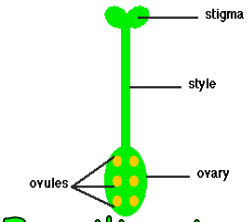
Self-pollination- pollen transferred from Stamen to stigma on same plant



Wind pollination

insect pollination

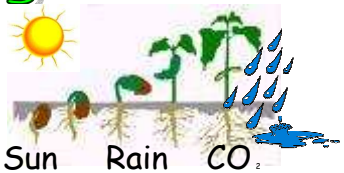
pollination



Fertilisation

Pollen → sticky
stigma → ovary
becomes fruit

growth



Sun Rain CO_2

germination

WOW Warmth, Oxygen Water

PLANT LIFE

Seed Dispersal

explosion

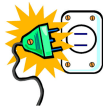
animals

birds

wind

METALS

Heat — Electricity

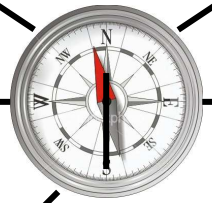


Conductor

Strong

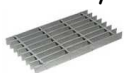
Oxides formed when metals react with oxygen

Shiny



Malleable/ Ductile

Easy to shape



Alarm

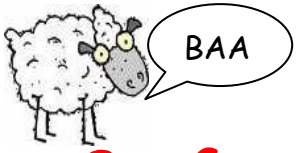
Metals make a ringing sound when hit- they are SONOROUS

Metals are elements & in

Periodic Table

REACTIVITY SERIES

VERY REACTIVE	Professor	POTASSIUM
	Smith	SODIUM
	Called	CALCIUM
FAIRLY REACTIVE	Me	MAGNESIUM
	A	ALUMINIUM
	Zombie	ZINC
NOT VERY REACTIVE	I	IRON
	Left	LEAD
NOT AT ALL REACTIVE	Class	COPPER
	Sucking	SILVER
	Gum	GOLD



Energy cannot be made or destroyed, only transferred

S Sound 

H Heat 

E Electrical 

E Elastic (mechanical potential) 

P Potential (gravitational potential)

C Chemical 

M Movement

L Light 

N Nuclear 

Reactivity Series

P
S
C
M
A
Z
I
L
C
S
G

A metal higher in the series will displace a less reactive metal from its compound

eg: Potassium + Copper Sulphate →

Potassium Sulphate + Copper

Magnesium + Copper Oxide

Magnesium Oxide + Copper →

BUT Sodium Oxide + Copper NO CHANGE

A Balanced Diet

PROTEIN   Growth Repair	CARBOHYDRATE  Energy	FATS  Energy
VITAMINS  A B C D	MINERALS  Calcium teeth/bones Iron blood 	FIBRE   Digestion
	WATER  75% of our body.	

Forces

Balanced Forces = no movement

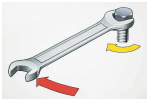
Unbalanced forces= change of speed/ direction

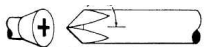
FORCES MAKE OBJECTS:

Speed up 

Slow down  ← ← Air resistance

Change direction 

Turn 

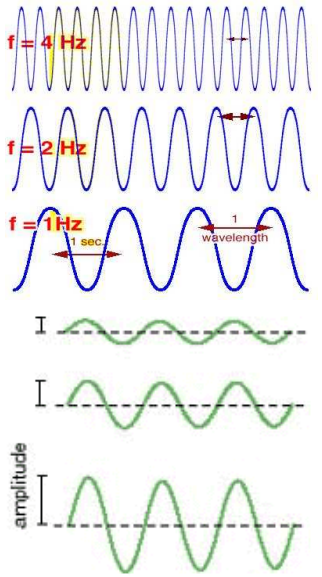
Change shape eg twisting 

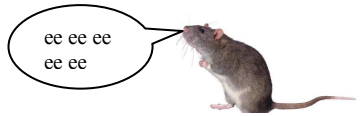
Acid + Base → Salt + Water
Acid + Alkali → Salt + Water
Acid + Metal → Salt + Hydrogen
Acid + Carbonate → Salt + Water + Carbon Dioxide

NOTE: BASES are the OXIDES & HYDROXIDES of metals

Sulfuric Acid → SULFATE salt
Hydrochloric Acid → CHLORIDE salt
Nitric Acid → NITRATE salt

Sound

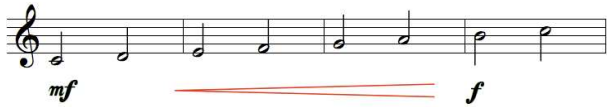




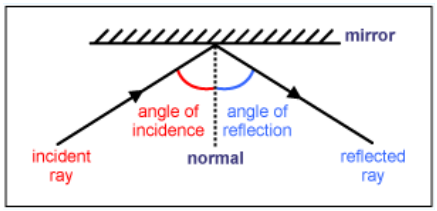
FREQUENCY (Hertz- Hz)
lots of vibrations per second= high frequency – a high pitch sound

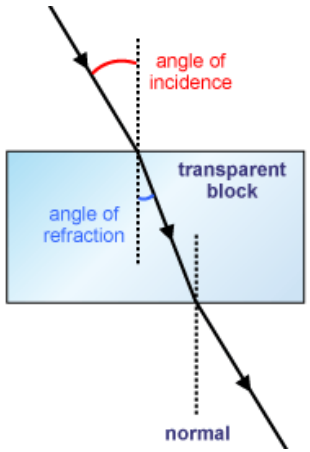
few vibrations per second= low frequency - low pitch sound.

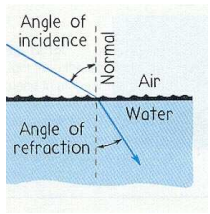
AMPLITUDE (Amps)
A tall wave is a loud sound
A short wave is a soft sound



Light



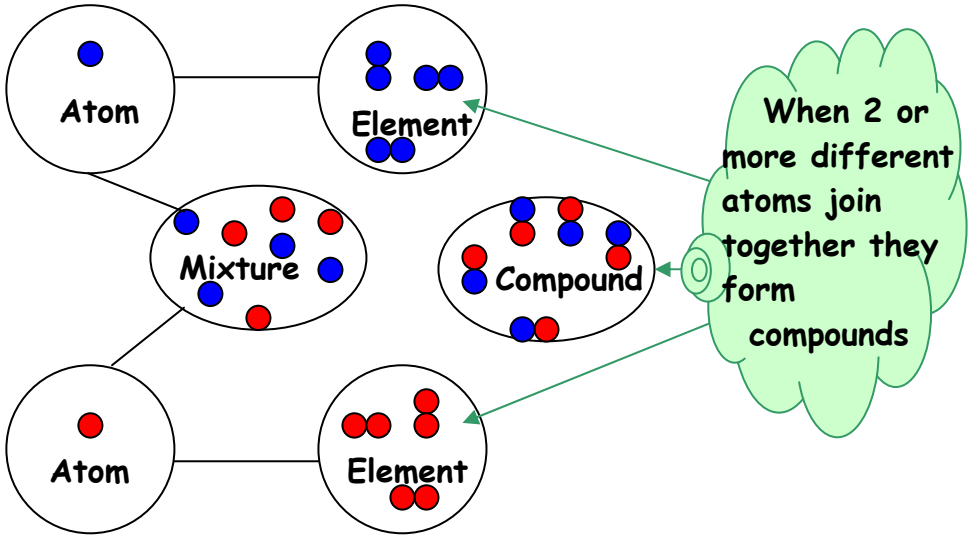




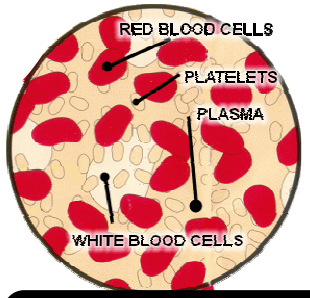
LAW OF REFLECTION
Angle of Incidence=
Angle of Reflection

LAW OF REFRACTION
Light going to a more dense medium bends to the normal
Light leaving it bends away from the normal

ATOMS, ELEMENTS & COMPOUNDS



The 4 Parts of Blood



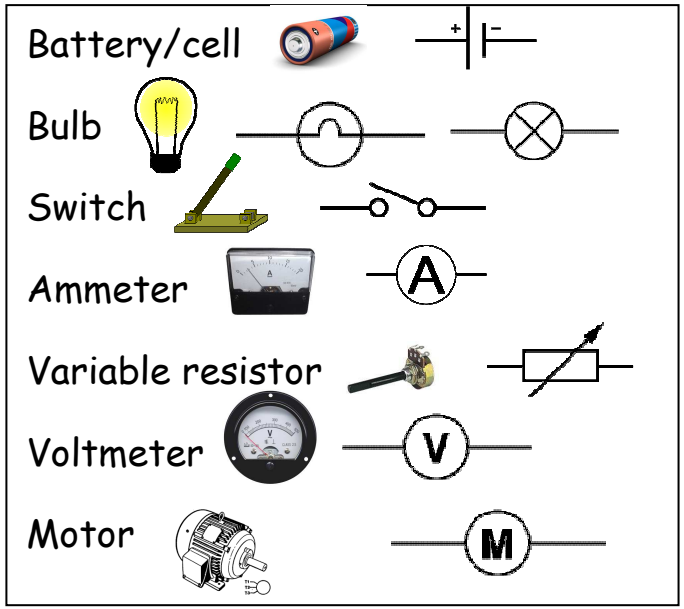
Red Cells Carry Oxygen

WHITE CELLS Kill invading microbes

PLASMA- liquid containing salt, sugar, proteins

PLATELETS-form clots to stop bleeding

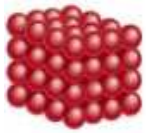
ELECTRICITY



TRICKY WORDS

Atom	Smallest part of an element. Lots of the same atoms make an element.
Molecule	When atoms join together they form molecules
Element	A substance only made up of one type of atom
Compound	A substance made up of two or more elements
Mixture	A mixture of different elements or compounds (can be separated)

PARTICLE THEORY

Solids	Liquids	Gases
		
PARTICLES		
Tightly packed In fixed position	Packed closely Move around (in liquid)	Far apart Move around quickly (anywhere)