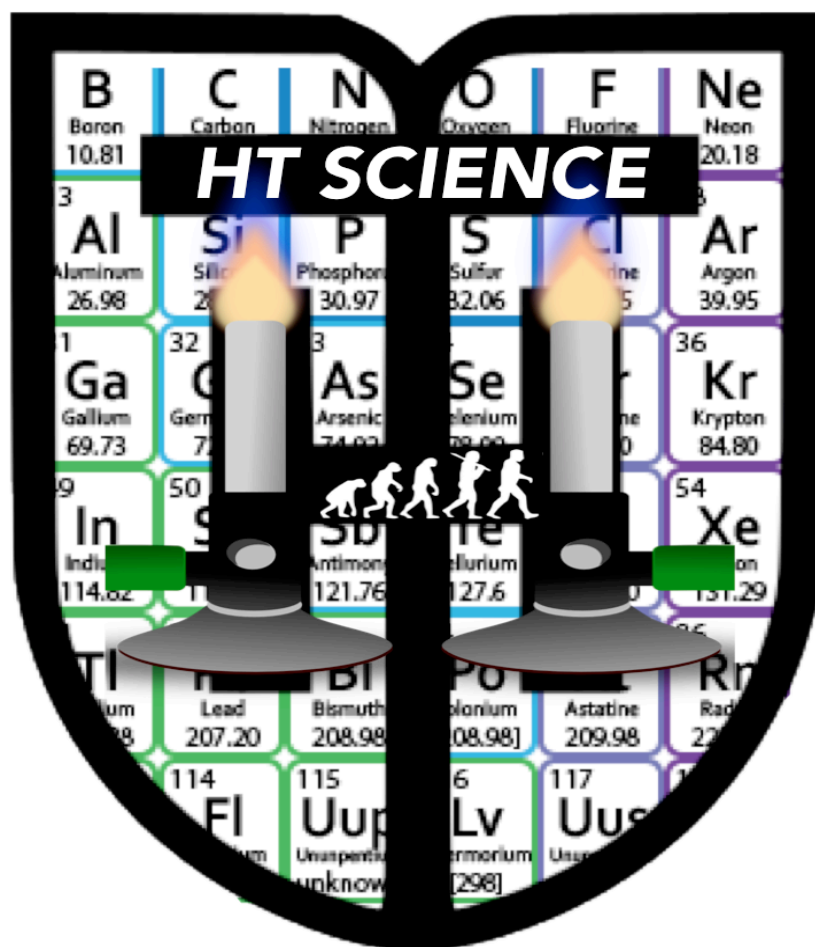


GCSE SCIENCE WORKBOOK



- You may need access to a computer or textbook to complete some tasks.

Biology



BMR is...

The factors that affect BMR are:

- 1.
- 2.
- 3.
- 4.
- 5.



Cholesterol is

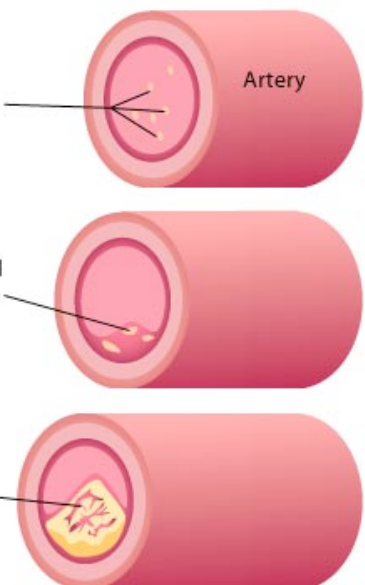
Statins are...

Cholesterol particles

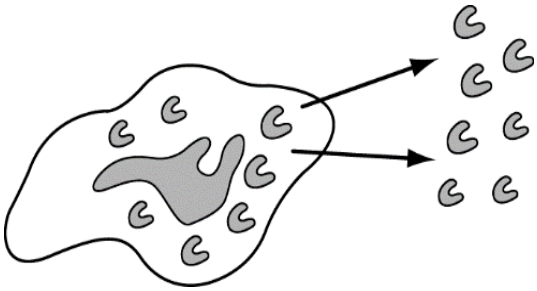
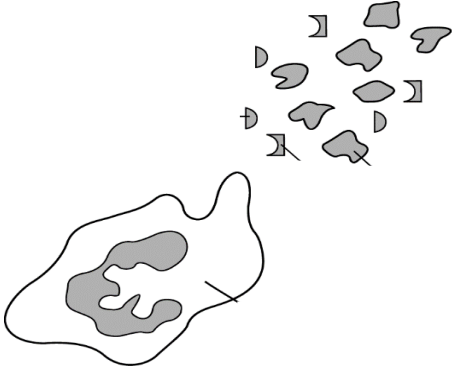
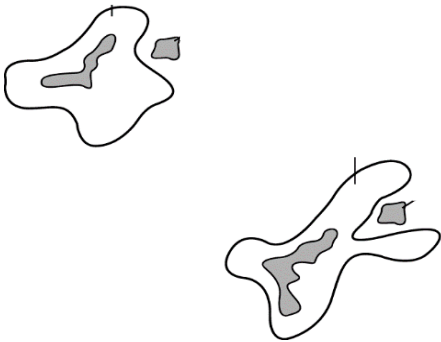
Artery

Buildup of cholesterol
in the lining of artery

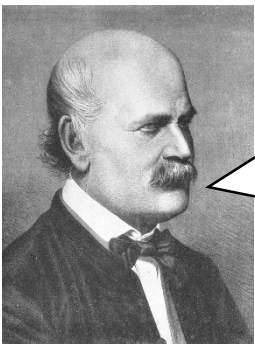
Plaque forms
(atherosclerosis)



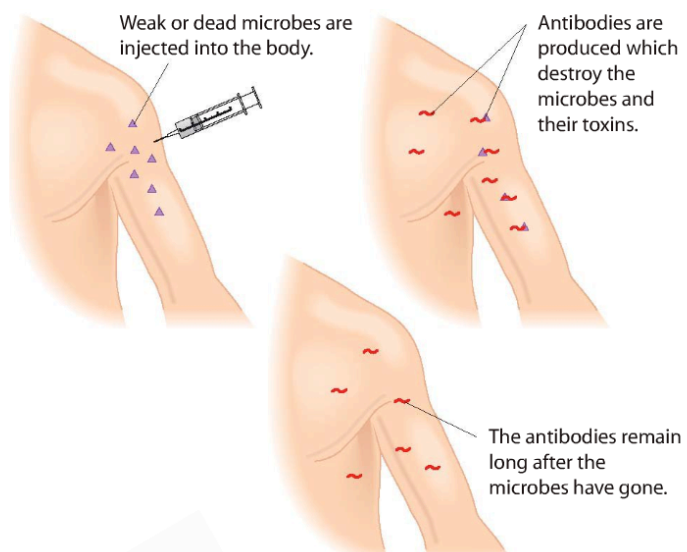
White blood cells have three functions, these are:

Ignaz Semmelweis



Vaccines



Medicines

Antibiotics

How antibiotic resistance arises





The key points of aseptic technique are:

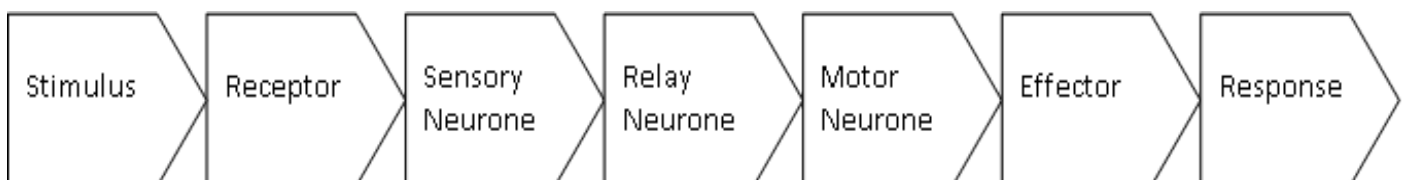
1.

2.

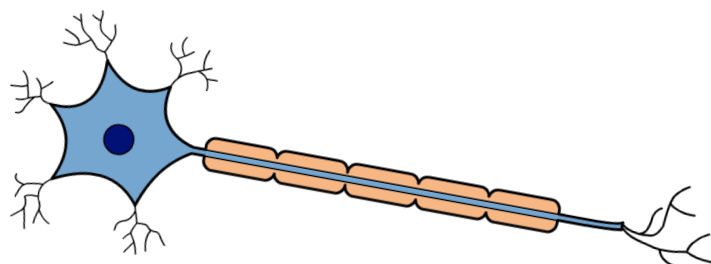
3.

Sense Organs

Receptors	Sense Organ(s)	Sense(s)
	Eyes	
Chemical		
Balance & change of position		Hearing
	Nose	
Touch/Pressure/Pain/Temperature		

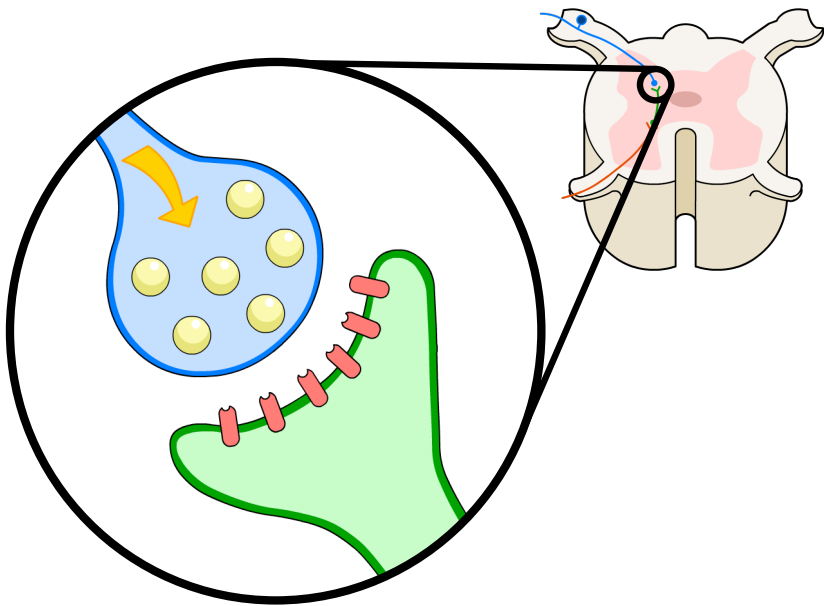


Nerves

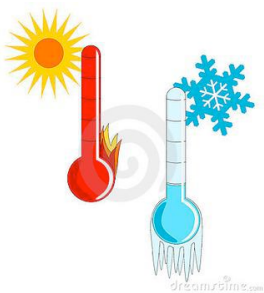


Sensory Nerves	Motor Nerves

Synapses



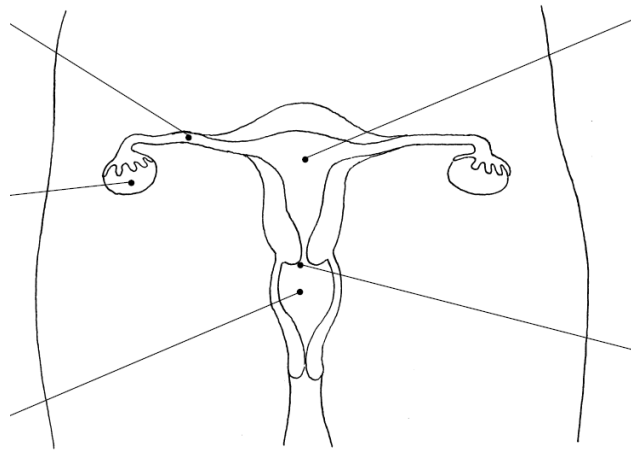
Homeostasis is...





A hormone is

The female reproductive system

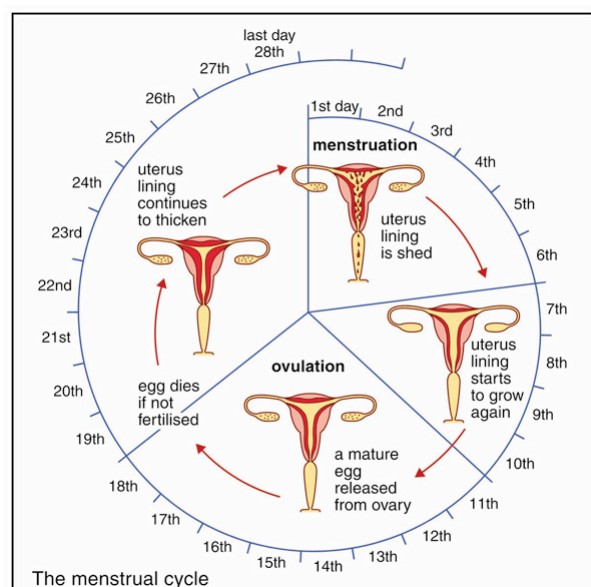


The menstrual cycle

DAY 1 -

DAY 14 -

DAY 28 -



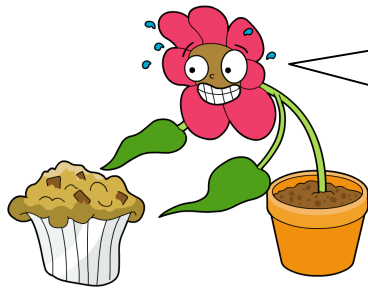
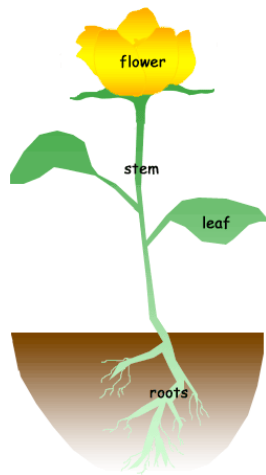
FSH -

LH -

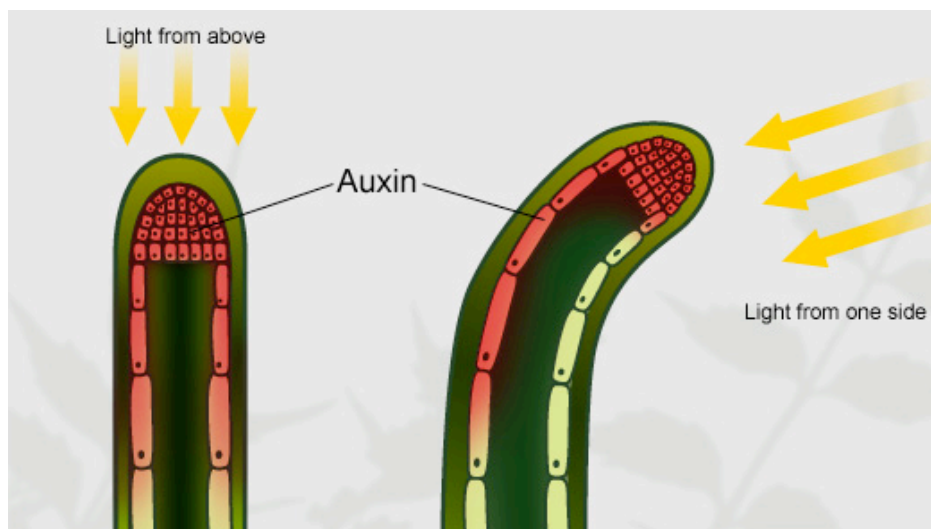
Oestrogen -

Oral Contraceptives	Fertility Treatments	IVF

Plant Hormones



Tropisms are...



Testing new drugs

Lab Testing
Animal Testing
Clinical Trials

Open -

Blind -

Double blind -

Placebo -



Drugs are...

Thalidomide



Chemistry



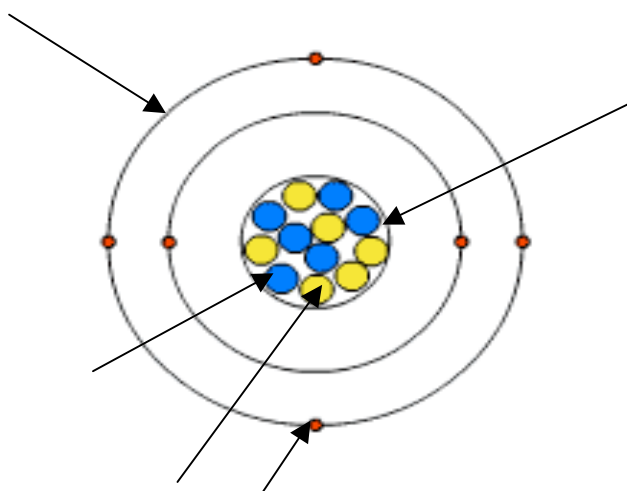
Atoms are...

Elements are...

Compounds are...

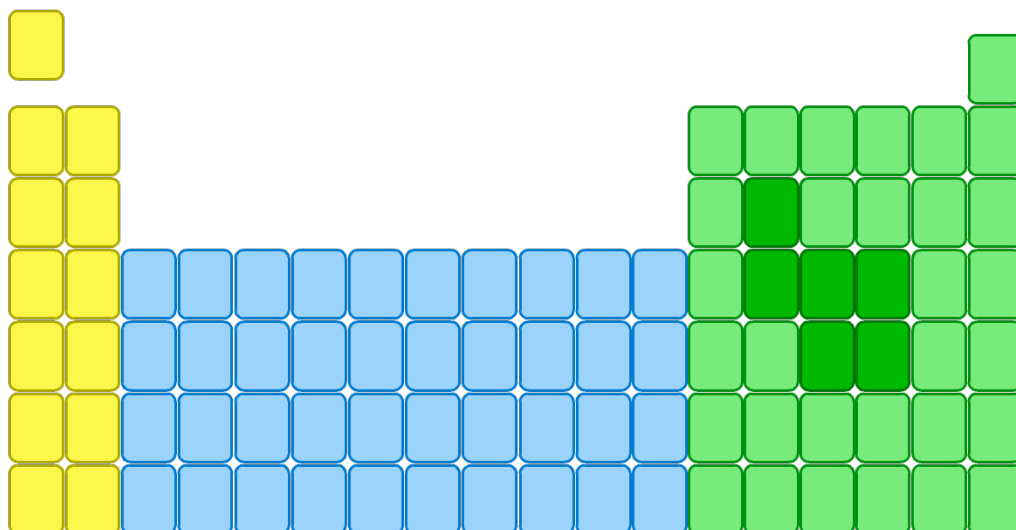
Structure of an atom

Particle	Mass	Charge
	Negligible	1-
	1	1+
	1	0

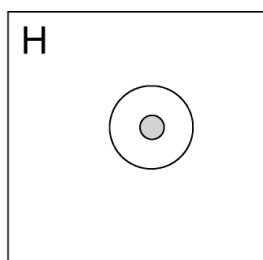


Carbon

Periodic Table

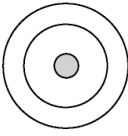
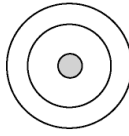
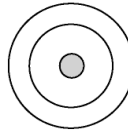
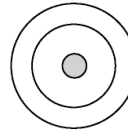
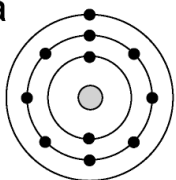
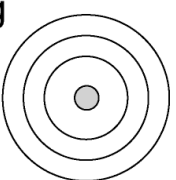
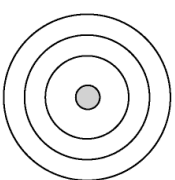
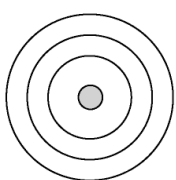
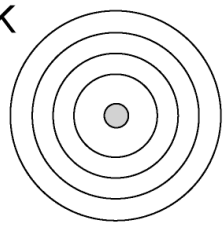
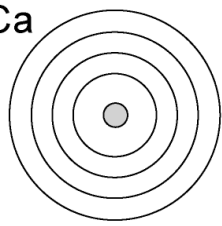


Electron Arrangement



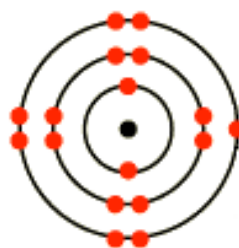
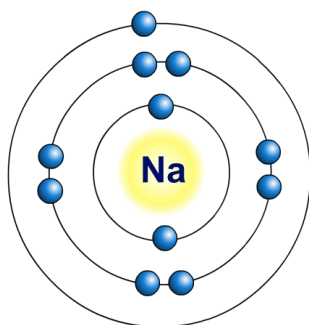
Rules

1. The **inner shell** can only hold **2 electrons**.
2. Electron shell number **2** can hold up to **8 electrons**.
3. Electron shell number **3** can hold up to **8 electrons**.

Li	Be	B	C
			
Na	Mg	Al	Si
			
K	Ca		
			

An ion is...

How would Sodium and Chlorine react together?



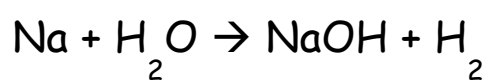
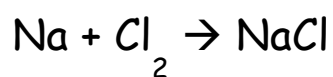
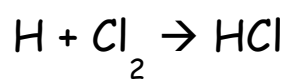
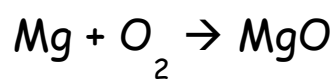
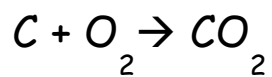
chlorine atom,

Covalent bonding is...

Draw:

Cl_2	
H_2O	
CH_4	
NH_4	

Balance the equations:



Limestone -



Quarrying Limestone

Positive

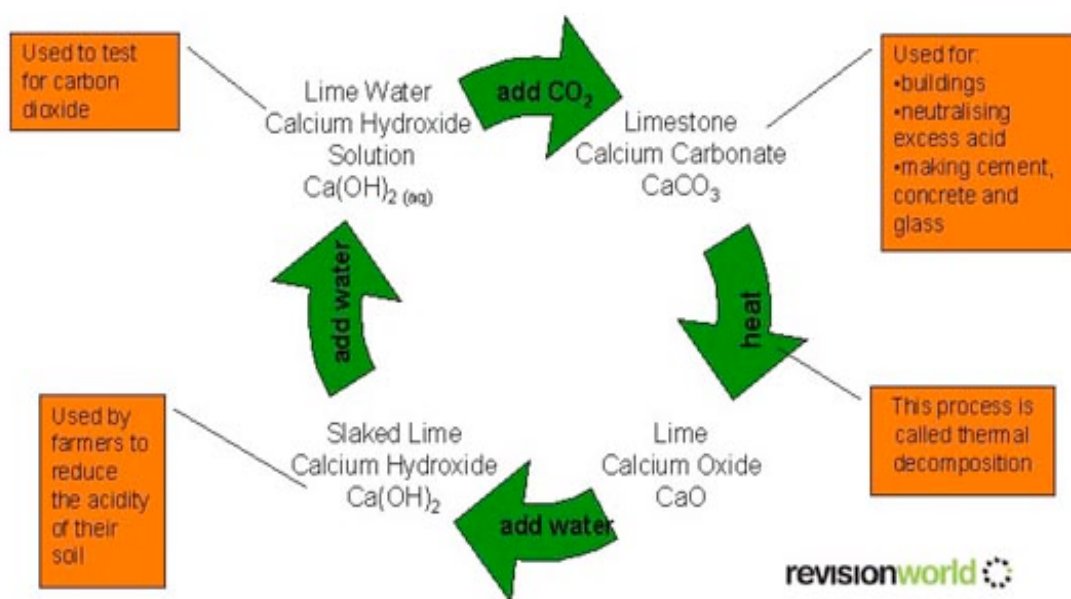
Negative

Thermal Decomposition is...

Metal carbonate \rightarrow Metal oxide + Carbon dioxide

Metal carbonate + Acid \rightarrow Salt + Water + Carbon dioxide

Limestone Cycle



Cement	Mortar	Concrete



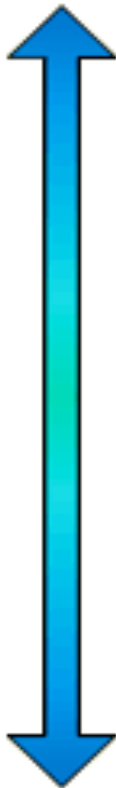
Ore -

Extraction -

Reactive -

Unreactive -

Reactivity Series

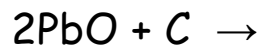
potassium	most reactive	K
sodium		Na
calcium		Ca
magnesium		Mg
aluminium		Al
carbon		C
zinc		Zn
iron		Fe
tin		Sn
lead		Pb
hydrogen		H
copper		Cu
silver		Ag
gold		Au
platinum	least reactive	Pt

Displacement reactions are...

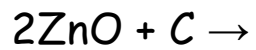
1. Magnesium + Zinc sulphate →
2. Magnesium + Copper sulphate →
3. Zinc + Iron sulphate →
4. Iron + copper sulphate →

Reduction -

Lead oxide + carbon \rightarrow



Zinc oxide + carbon \rightarrow





Electrolysis -

Extract OR recycle - Aluminium



Extract	Recycle

Copper

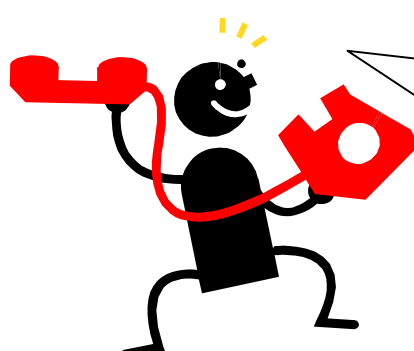
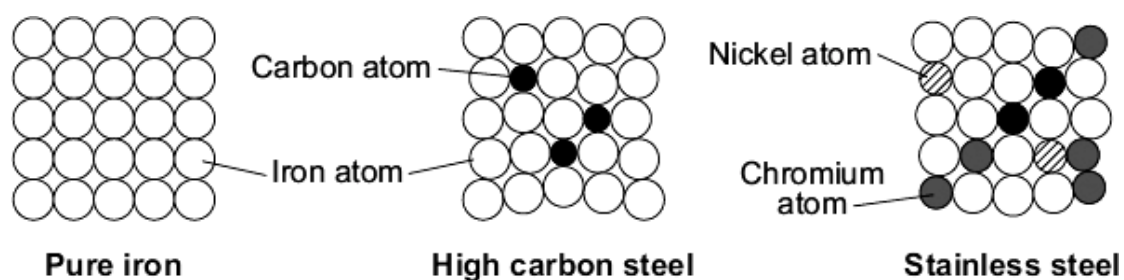
Smelting	Phytomining	Bioleaching
		

Other useful metals

1	2											3	4	5	6	7	0	
		H																He
Li	Be											B	C	N	O	F	Ne	
Na	Mg											Al	Si	P	S	Cl	Ar	
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
Fr	Ra	Ac																

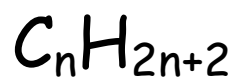
Transition metals

An alloy is:



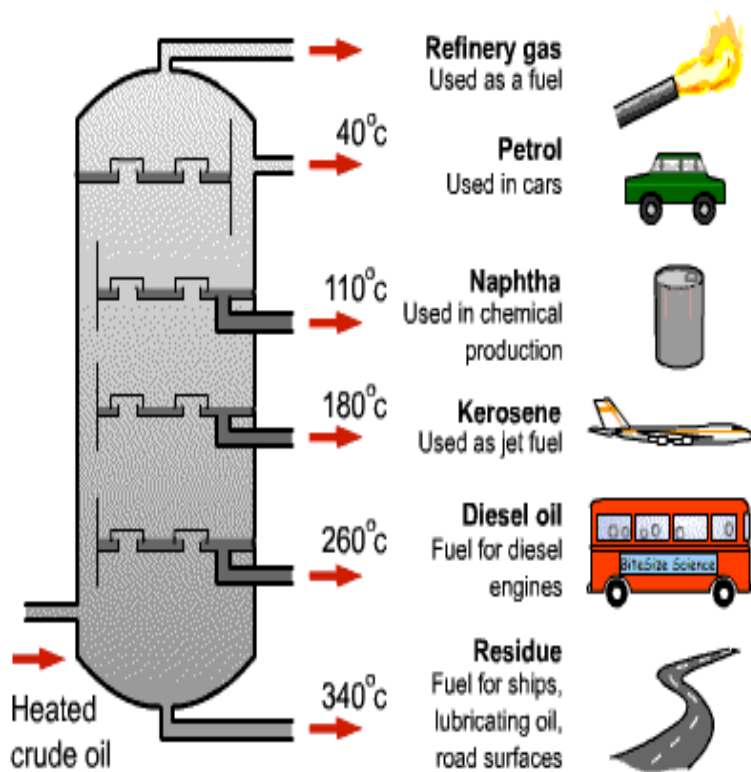
Crude oil is:

Alkanes are:

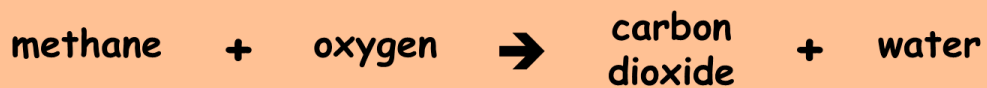


Name	Formula	Structure
Methane		
Ethane		
Propane		

Fractional Distillation



Combustion



Pollutants

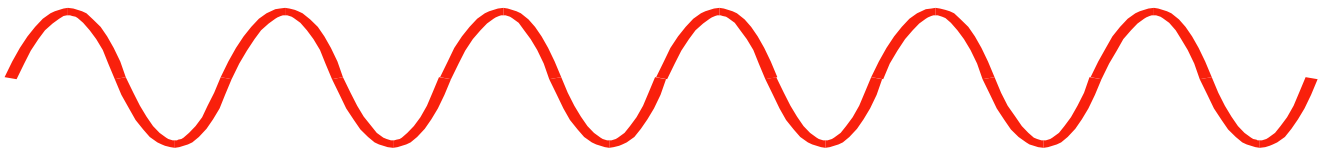
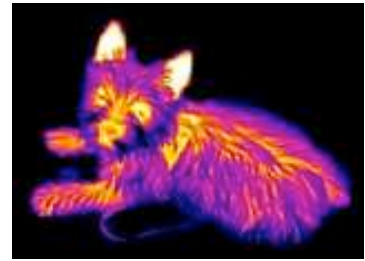
Name	Formula	Affect
Carbon dioxide		
Carbon monoxide		
Sulfur dioxide		
Nitrogen oxides		

Alternate fuels...

Physics



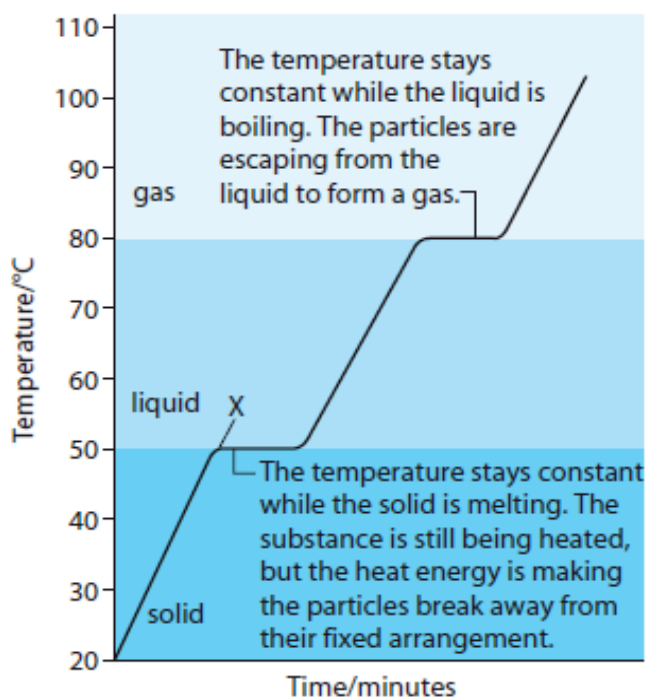
Infra-red is:



matt black		white	silver
-----------------------	--	--------------	---------------

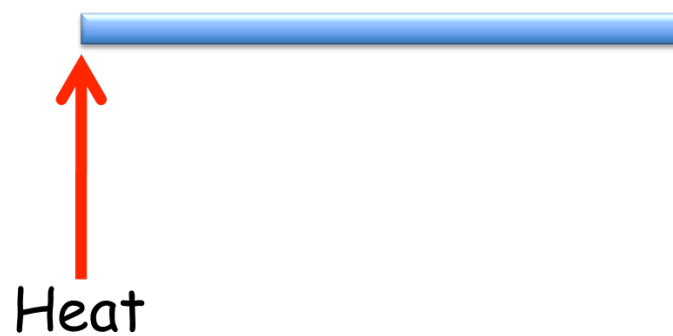
Change of State

Solid	Liquid	Gas

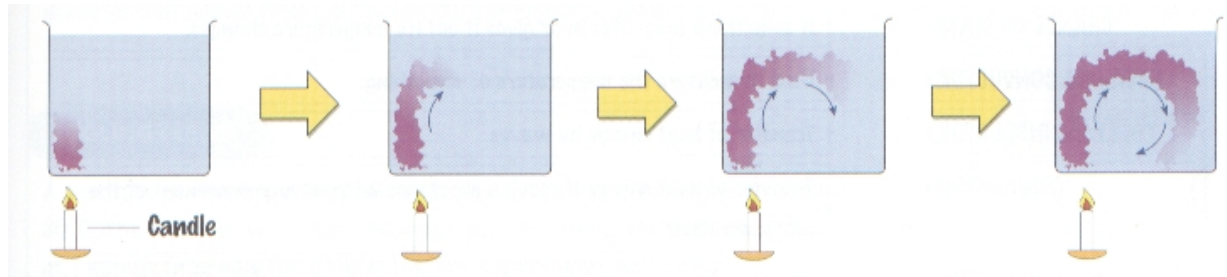


Kinetic theory

Conduction



Convection



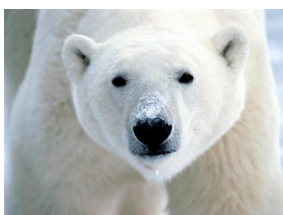
Evaporation

Condensation

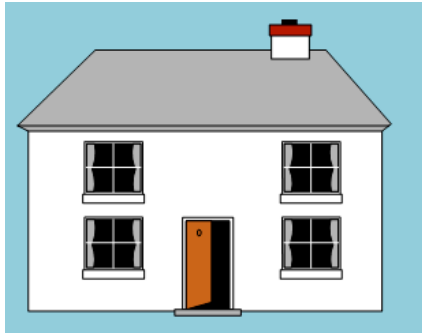


Factors affecting Evaporation

Heat transfer - animal adaptations



Insulation



U-values are...

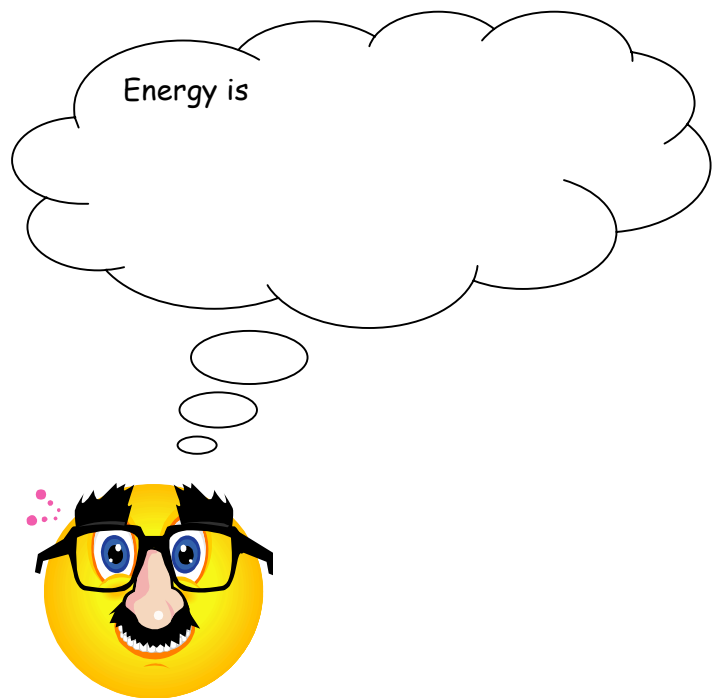
Heat capacity



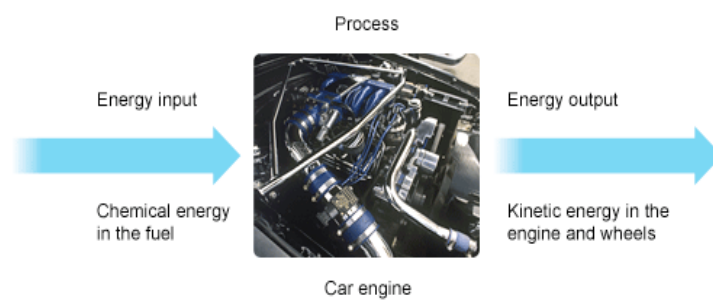
$$E = m \times c \times \theta$$

List the Energy Stores

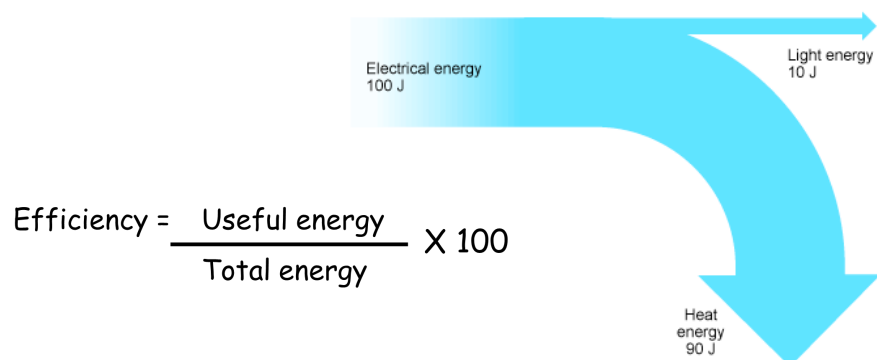
1.
2.
3.
4.
5.
6.
7.
8.
9.



Energy Transfers



Sankey Diagrams



Sankey diagrams:

The amount



$$E = P \times t$$

Reading meters

3	7	8	9	9
---	---	---	---	---

4	2	8	7	2
---	---	---	---	---

cost = number of units × cost per unit