



Chemical reactions



Homework Booklet

Name : _____

Class : _____

Teacher : _____

PROGRESS LOG - Chemical reactions

Homework	Due Date	What did I do well?	What do I need to improve upon?	Have I corrected my mistakes?	Parent signature
1. The Periodic Table					
2. Separation techniques					
3. Chemical reactions					

Periodic Table of the Elements

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 0
1 Hydrogen H							2 Helium He
3 Lithium Li	4 Beryllium Be					9 Fluorine F	10 Neon Ne
11 Sodium Na	12 Magnesium Mg					17 Chlorine Cl	18 Argon Ar
19 Potassium K	20 Calcium Ca					35 Bromine Br	36 Krypton Kr
37 Rubidium Rb	38 Strontium Sr					53 Iodine I	54 Xenon Xe
55 Caesium Cs	56 Barium Ba					85 Astatine At	86 Radon Rn
87 Francium Fr	88 Radium Ra					117 Tennessine Ts	118 Oganesson Og

Key

Atomic Number
Name of Element
Symbol

TRANSITION METALS

21 Scandium Sc	22 Titanium Ti	23 Vanadium V	24 Chromium Cr	25 Manganese Mn	26 Iron Fe	27 Cobalt Co	28 Nickel Ni	29 Copper Cu	30 Zinc Zn
39 Yttrium Y	40 Zirconium Zr	41 Niobium Nb	42 Molybdenum Mo	43 Technetium Tc	44 Ruthenium Ru	45 Rhodium Rh	46 Palladium Pd	47 Silver Ag	48 Cadmium Cd
57 Lanthanum La	58–71	72 Hafnium Hf	73 Tantalum Ta	74 Tungsten W	75 Rhenium Re	76 Osmium Os	77 Iridium Ir	78 Platinum Pt	79 Gold Au
89 Actinium Ac	90–103	104 Rutherfordium Rf	105 Dubnium Db	106 Seaborgium Sg	107 Bohrium Bh	108 Hassium Hs	109 Meitnerium Mt	110 Darmstadtium Ds	111 Roentgenium Rg
									112 Copernicium Cn

58 Cerium Ce	59 Praseodymium Pr	60 Neodymium Nd	61 Promethium Pm	62 Samarium Sm	63 Europium Eu	64 Gadolinium Gd	65 Terbium Tb	66 Dysprosium Dy	67 Holmium Ho	68 Erbium Er	69 Thulium Tm	70 Ytterbium Yb	71 Lutetium Lu
90 Thorium Th	91 Protactinium Pa	92 Uranium U	93 Neptunium Np	94 Plutonium Pu	95 Americium Am	96 Curium Cm	97 Berkelium Bk	98 Californium Cf	99 Einsteinium Es	100 Fermium Fm	101 Mendelevium Md	102 Nobelium No	103 Lawrencium Lr

Elements below the dark line are metals.

Homework 1 - The Periodic Table

1. Define an element.

2. Complete the following table using your periodic table.

Name of Element	Symbol	Atomic Number
Lithium	Li	3
	Cu	
	He	
		85
Titanium		
Phosphorous		
		7
	Fe	

3. When alkali metals react with water, they produce a metal hydroxide and hydrogen gas.

Example:

Lithium + water → lithium hydroxide + hydrogen

Complete the word equation for sodium:

Sodium + water → _____ hydroxide + _____

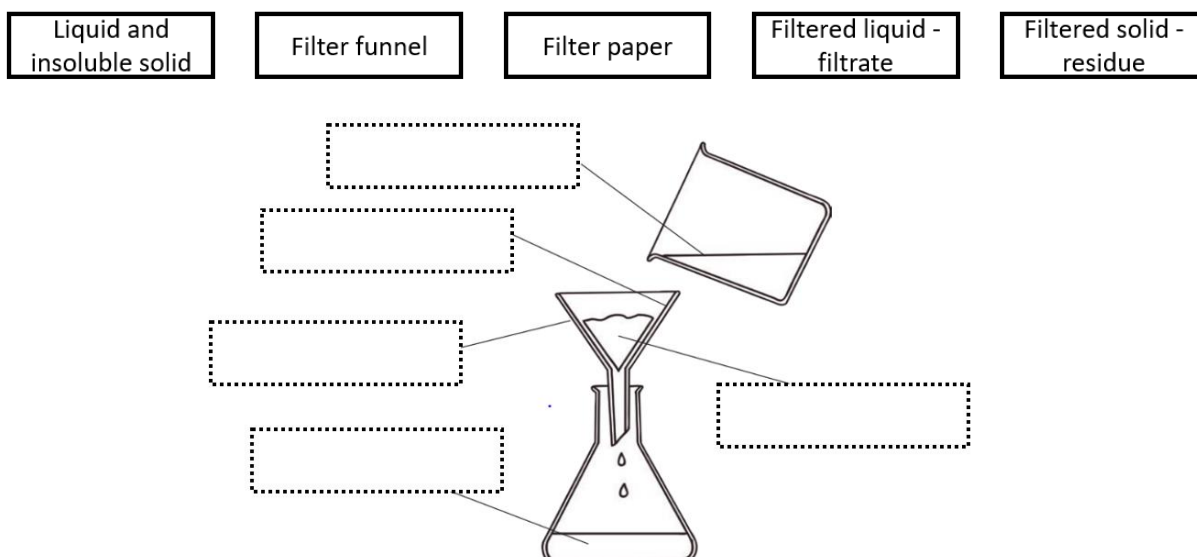
Homework 2 - Separation techniques

1. What is a mixture?

2. What process do you use to remove a solid that hasn't dissolved from a liquid?

3. Explain the steps used to remove dissolved salt from salt water.

4. i) Label the following Diagram

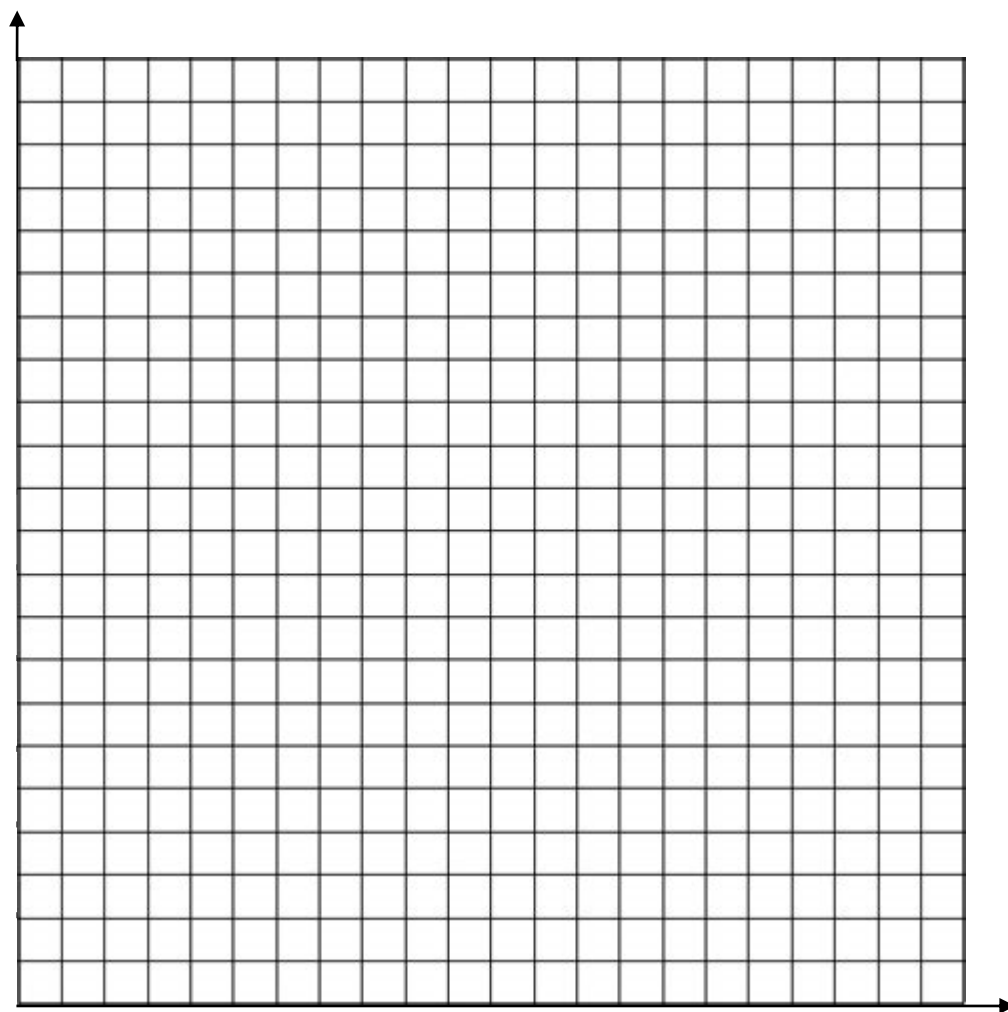


ii) What process would this apparatus be used for?

5. Use the table below, which shows the densities of several alkali metals at room temperature (in g/cm^3).

Plot the data in a bar graph. Label your axes clearly and use different patterns for each element.

Alkali Metal	Density (g/cm^3)
Lithium (Li)	0.5
Sodium (Na)	0.9
Potassium (K)	1.0
Rubidium (Rb)	1.5
Cesium (Cs)	1.9



Homework 3 - Chemical reactions

1. Which of the following ALWAYS occurs in a chemical reaction?

- A solid formed
- B gas given off
- C new substance formed
- D colour change

2. What is a compound?

3. Name the compounds produced in the following reactions.

- Lithium reacting with Chlorine

4. Write a word equation for the reaction of calcium with oxygen to produce calcium oxide.

5. The speed at which a chemical reaction occurs can be changed by altering various factors.

Give two examples of what factors can be altered:

- ---
- ---

6. Construct a table in the space, with correct headings, to separate the following substances into elements, compounds and mixtures.

water	aluminium	sodium	coffee
salt water		magnesium chloride	
carbon	sand	carbon hydride	
iron sulphide	air	oxygen	