

Identify how many atoms are in each compound / molecule and calculate the Relative Formula Mass (Mr).

Formula	No. of Atoms	Mr
CO ₂		
O ₂		
MgO		
CaCl ₂		
CuSO ₄		
Mg(NO ₃) ₂		

Describe what the conservation of energy is

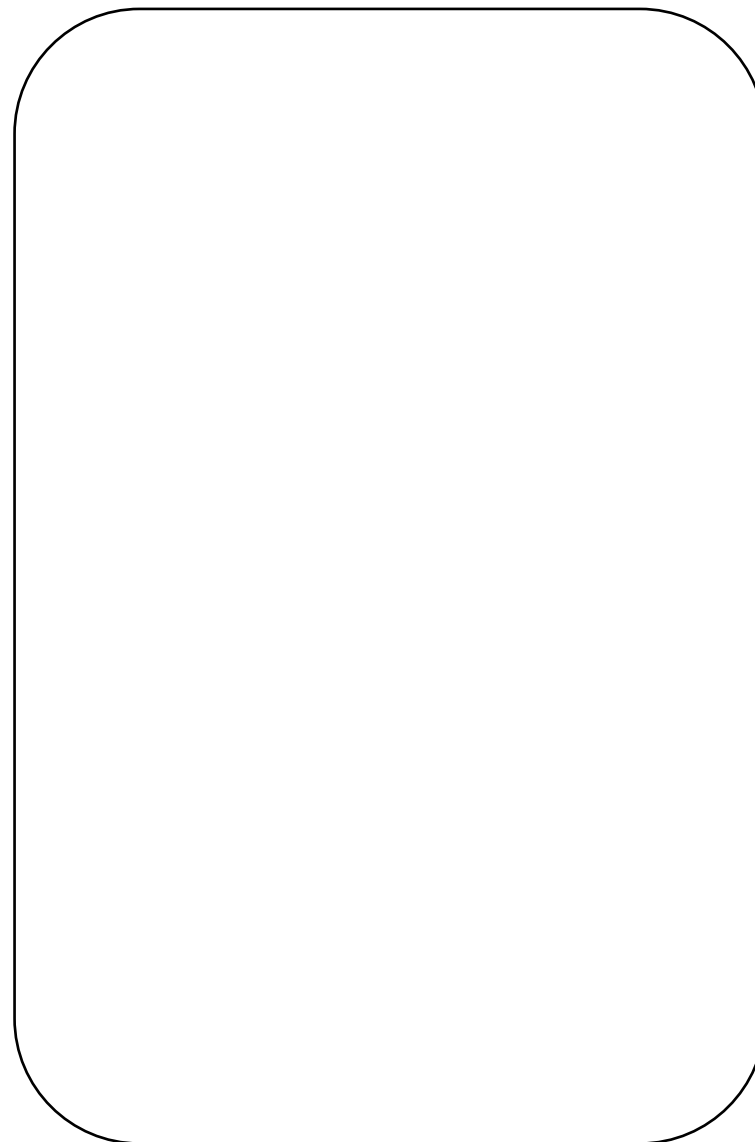
.....

.....

.....

.....

In the space below describe a practical with a diagram that can be done to show the conservation of mass principle.



Quantitative Chemistry

Balance the equations below



Work out the % mass of the following:

% of Mg in MgO

% of Li in LiOH

% of H in CH₄

% of O in CO₂

Identify how many atoms are in each compound / molecule and calculate the Mr.

Formula	No. of Atoms	Mr
CO ₂		
O ₂		
MgO		
CaCl ₂		
CuSO ₄		
Mg(NO ₃) ₂		

For the following. Balance the equation (if necessary) and then calculate how much mass is being produced.

9.6g of magnesium is added to copper sulphate solution. What mass of copper is made?



9.2g of sodium burns in oxygen. What mass of sodium oxide is made?



What mass of aluminium needs to be added to iron(III)oxide to make 1.4g of iron?



Describe what the mole is.

.....

Quantitative Chemistry

In the space below write down the equation triangle that links moles, mass and Mr. Include any units.

In the space below write down the equation triangle that links moles, concentration and volume. Include any units.

Use the concentration formula to calculate the following:

Calculate the number of moles of Hydrochloric acid that must be dissolved to make the following solutions

- (i) 500cm³ of 1 mol/dm³
- (ii) 250cm³ of 2 mol/dm³

Calculate the concentration of each of the following solutions of Copper Sulphate

- (i) 2 mol of HCl dissolved to make 1 litre (dm³) of solution
- (ii) 0.5 mol of HCl dissolved to make 250cm³ of solution

Calculate the volume of each of the following solutions of sodium hydroxide

- (i) 1 mol/dm³ solution containing 2 mol of solute
- (ii) 0.1 mol/dm³ solution containing 0.5 mol of solute

Use both equation triangles to solve the following:

Calculate the number of grams of substance needed to make each of the following solutions.

100cm³ of KOH (aq), concentration 0.5 mol/dm³

25cm³ of lithium nitrate solution, concentration 0.2 mol/dm³