

Writing Chemical Equations

1. Complete the following table:

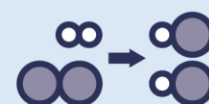
Chemical name	Chemical Formula
Hydrochloric Acid	
Nitric Acid	
	H_2SO_4
	H_2
Calcium chloride	CaCl_2
Sodium Hydroxide	NaOH
	NaCl
Copper carbonate	CuCO_3
Copper sulfate	CuSO_4
	CuO
Potassium carbonate	K_2CO_3
Potassium nitrate	KNO_3

2. Complete the general equations to show the products formed in each of the reactions with acids:

- a. Metal + acid \rightarrow
- b. Metal oxide + acid \rightarrow
- c. Metal hydroxide + acid \rightarrow
- d. Metal carbonate + acid \rightarrow

3. Use the general equations from question 2 to predict the products of these reactions and complete the word equations:

- a. Calcium + hydrochloric acid \rightarrow
- b. Hydrochloric acid + sodium hydroxide \rightarrow
- c. Sulfuric acid + copper carbonate \rightarrow



d. Hydrochloric acid + copper oxide \rightarrow

e. Nitric acid + potassium carbonate \rightarrow

4. Use the table in Q1 to help you write **balanced** symbol equations for each of the reactions in Q3.

a.

b.

c.

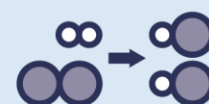
d.

e.

5. Use Q3/Q4 to help you answer these questions.

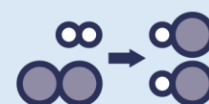
a. Which reactions would cause a positive result for the squeaky pop test?

b. Which reactions would cause a positive result for the limewater test?





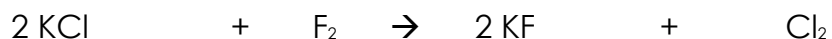
6. Alkali metals react with oxygen to form metal oxides. Write a word equation and a **balanced** symbol equation to show the reaction of lithium, sodium and potassium with oxygen.
7. Alkali metals react with water to form metal hydroxides and hydrogen gas. Write a word equation and a **balanced** symbol equation to show the reaction of lithium, sodium and potassium with water.



Stretch:

8. A more reactive halogen can displace a less reactive halogen from an aqueous solution of its salts.

e.g. Potassium chloride + fluorine \rightarrow Potassium fluoride + chlorine



A displacement reaction occurs in this case because fluorine is more reactive than chlorine, so fluorine displaces the chlorine from the salt.

Determine if a reaction would occur in each case. If a reaction would occur write a word and balanced symbol equation for each one:

a. Potassium iodide + chlorine

b. Sodium chloride + bromine

c. Lithium iodide + fluorine

d. Sodium bromide + chlorine

