Combined Science - Chemistry - Key Stage 4

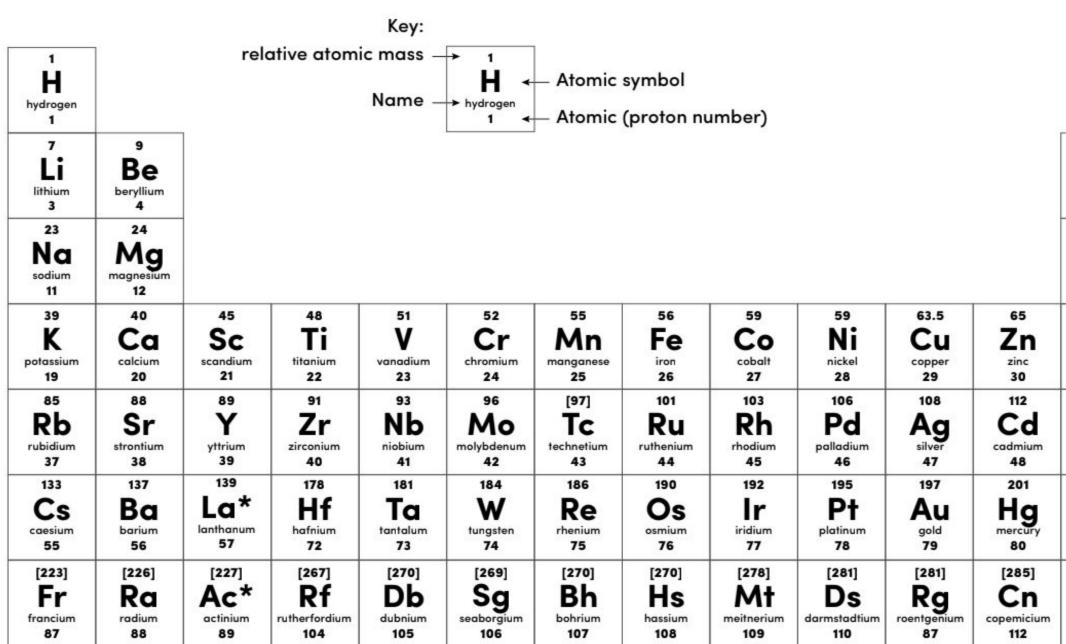
Quantitative Chemistry

### **Balancing Equations - Foundation**

Mrs. Begum



# **Periodic Table of Elements**



\* The lanthanides (atomic numbers 58 – 71) and the Actinides (atomic numbers 90 – 103) have been omitted. Relative atomic masses for **Cu** and **Cl** have not been rounded to the nearest whole number.

		51			4 He helium 2
11	12	14	16	19	20
B	C	N nitrogen	0	F	Ne
5	6	7	oxygen 8	9	10
27	28	31	32	35.5	40
AI	Si	P	S	Cl	Ar
aluminium 13	silicon 14	phosphorus 15	sulfur 16	chlorine 17	argon 18
70	73	75	79	80	84
Ga	Ge	As	Se	Br	Kr
gallium <b>31</b>	germanium 32	arsenic 33	selenium 34	bromine 35	krypton 36
115	119	122	128	127	131
In	Sn	Sb	Te	1	Xe
indium	tin	antimony	tellurium	iodine	xenon
49 204	50	51	52	53	54
204 TI	207	Bi	[209]	[210] <b>A</b> +	[222]
thallium	Pb	DI	Po	AT	Rn
81	82	83	84	85	86
[286]	[289]	[289]	[293]	[293]	[294]
Nh	FI	Mc	Lv	Ts	Og
nihonium 113	flerovium 114	moscovium 115	livermorium 116	tennessine 117	organesson 118

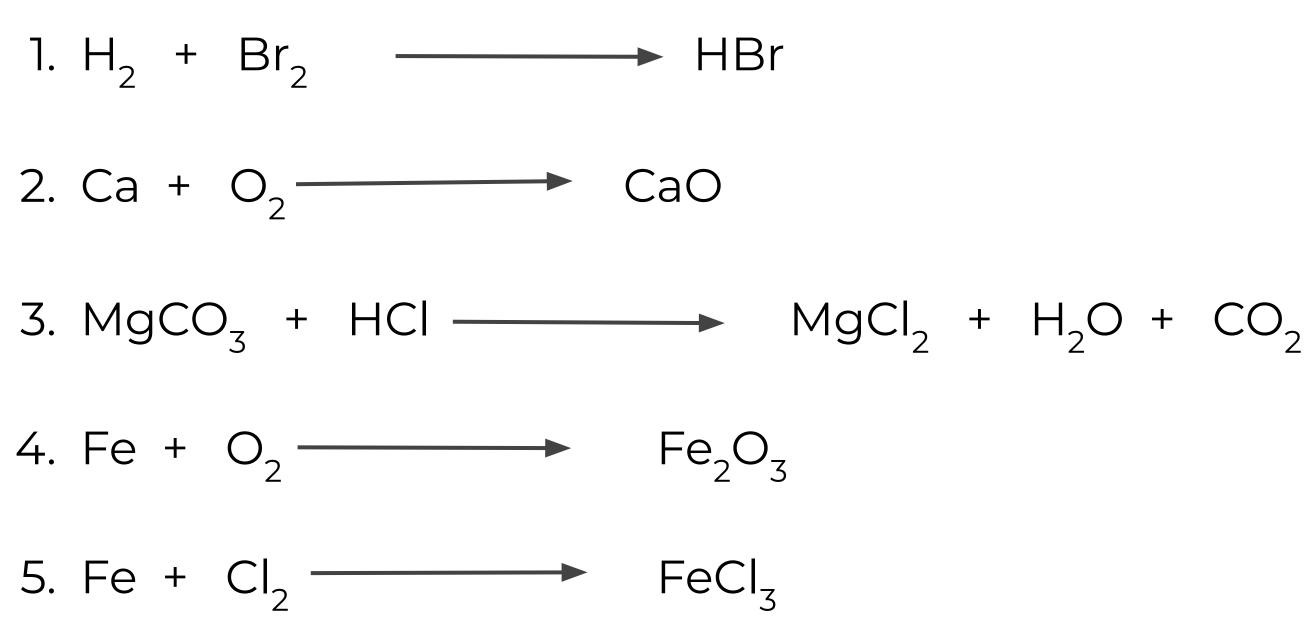


### **Quick check questions**

- 1. How many electrons do Group 2 elements have in their outer shell?
- 2. How many electrons do Group 7 elements have in their outer shell?
- 3. When an atom loses or gains electrons, what do they become?
- 4. What is the charge on Group 1 ions?
- 5. What is the charge on Group 6 ions?



### **Independent practice**





# Questions

- 1. In a reaction, copper sulfate and sodium hydroxide react together to form copper hydroxide and sodium sulfate.
  - a. Write a word equation for this reaction.
  - b. Name the reactants and the products.
  - c. Write the formulae of the reactants copper sulfate and sodium hydroxide. Ions are  $Cu^{2+}$ ,  $SO_4^{2-}$ ,  $Na^+$  and  $OH^-$ .
  - d. Write a balanced symbol equation for this reaction. Formulae of products are copper hydroxide  $Cu(OH)_2$  and sodium sulfate  $Na_2SO_4$ .



# Questions

- 2. In a reaction, calcium oxide and hydrochloric acid (HCI) react together to form calcium chloride and water  $(H_2O)$ .
  - a. Write a word equation for this reaction.
  - b. Name the reactants and the products.
  - c. Write the formulae of the reactants calcium oxide and calcium chloride. Ions are  $Ca^{2+}$ ,  $O^{2-}$ , and  $CI^{-}$ .
  - d. Write a balanced symbol equation for this reaction.

