

Year 10 C Pathway

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INTRODUCTORY CHEMISTRY

Outcomes

- ① Determine the number and type of atoms in a formula
- ① Put coefficients in equations in order to balance the number of atoms

Chemical equations

- Equations can be used to show how chemicals interact during a reaction.



These are the reactants..
Because they react together

These are the products...
Because its what is left at
the end

Chemical equations

- Equations can be used to show how chemicals interact during a reaction.



(s) means the chemical is a solid

(l) means the chemical is a liquid

(g) means the chemical is a gas

(aq) means the chemical is dissolved in water

Chemical equations

- Equations can be used to show how chemicals interact during a reaction.



These are coefficients. They indicate how many of each chemical is used or produced.

Eg: $2Cl^{-}$ means 2 chloride ions  

How many atoms?

⦿ Determine the number of each type of atom in the following:

⦿ 2NaCl

⦿ 3CaCO_3

⦿ $2\text{Ba}(\text{NO}_3)_2$

How many atoms?

- Determine the number of each type of atom in the following:

$$\text{Na} = 2 \times 1 = 2$$

- 2NaCl

$$\text{Cl} = 2 \times 1 = 2$$

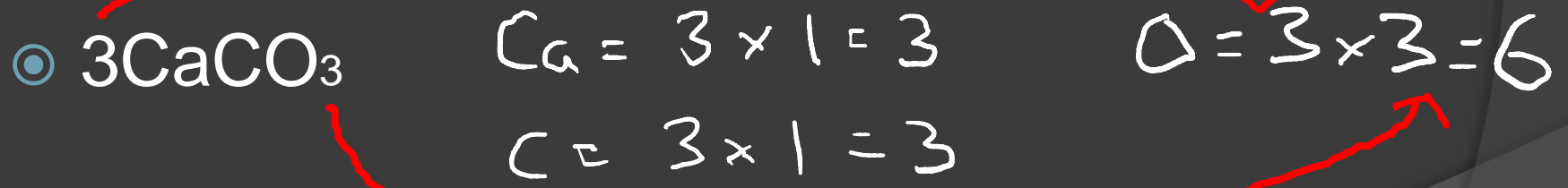
- 3CaCO_3

- $2\text{Ba}(\text{NO}_3)_2$

1 Na per NaCl

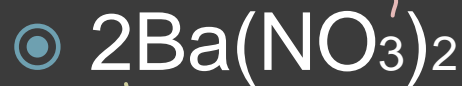
How many atoms?

- Determine the number of each type of atom in the following:



How many atoms?

- Determine the number of each type of atom in the following:



$$\text{O} = 2 \times 3 \times 2 = 12$$

$$\text{Ba} = 2 \times 1 = 2$$

$$\text{N} = 2 \times 1 \times 2 = 4$$

Law of conservation of mass

- The number and type of atoms on the left of the reaction must be the same as on the right



- Number of oxygen in reactants = 1
- Number of oxygen in products = $1 \times 2 = 2$
- Need to balance the equation by inserting **coefficients**

Law of conservation of mass

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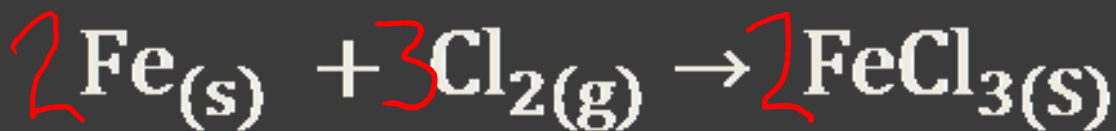
More examples

- Balance the following:



More examples

- Balance the following:



Outcomes

- Determine the number and type of atoms in a formula
- Put coefficients in equations in order to balance the number of atoms
- Study Guide Qs:
 - Checkpoint 5.1, 5.2, 5.3
 - Set 7