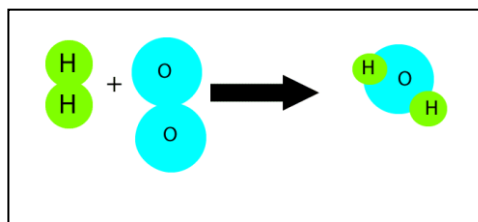
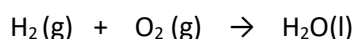


# Introduction to writing chemical equations and

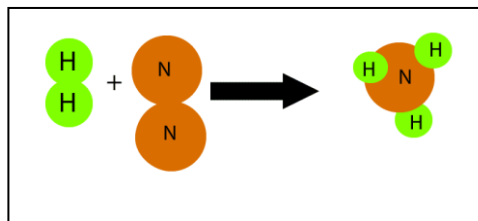
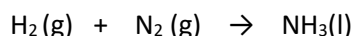
## The law of conservation of mass.

Simple diagrams are included to help in the balancing process after you have viewed the video.

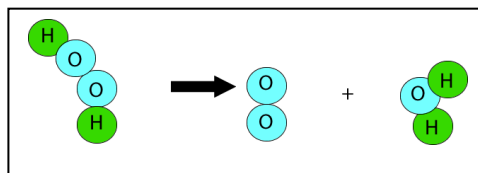
1. Hydrogen gas (H<sub>2</sub>) and oxygen gas (O<sub>2</sub>) react to form liquid water (H<sub>2</sub>O). Balance the chemical equation below.



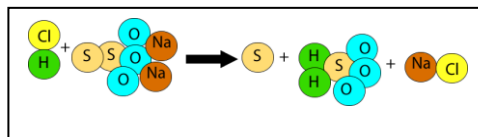
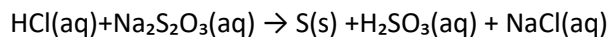
2. Hydrogen gas (H<sub>2</sub>) and nitrogen gas (N<sub>2</sub>) react to form liquid ammonia (NH<sub>3</sub>). Balance the chemical equation below.



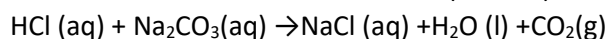
3. A solution of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) decomposes to form oxygen gas (O<sub>2</sub>) and liquid water (H<sub>2</sub>O). Write and balance the chemical equation.



4. Consider the chemical equation shown below. It shows the reaction between hydrochloric acid (HCl) and a chemical called **Sodium thiosulfate**.

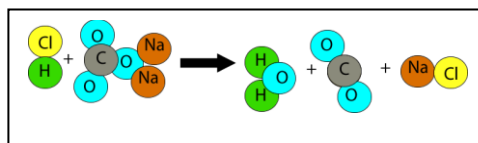


5. Consider the chemical equation below. It shows the reaction between hydrochloric acid (HCl) and a chemical called **sodium carbonate** (Na<sub>2</sub>CO<sub>3</sub>).



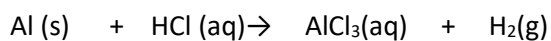
a. Which option is correct from the list below, as the reaction is taking place in solution?

- i. Solid Na is formed.
- ii. Gas bubbles should be visible as the reaction proceeds.
- iii. Oxygen (O<sub>2</sub>) gas is formed.
- iv. Water in the gaseous state is formed.



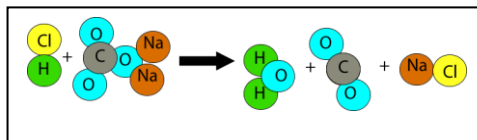
b. Balance the chemical equation given above so that it obeys the law of conservation of mass.

6. Consider the chemical equation below. It shows the reaction between hydrochloric acid (HCl) and aluminium metal.



Which option is correct from the list below, as the reaction is taking place in solution?

- i. Solid Al is formed.
- ii. Gas bubbles should be visible as the reaction proceeds.
- iii. Chlorine (Cl<sub>2</sub>) gas is formed.
- iv. Water is formed.



b. Balance the chemical equation given above so that it obeys the law of conservation of mass.