

Key Stage 3 Precise Learning Points



Unit Number	C3
Unit Title	Chemical Reactions
Chapter	Chemical Reactions

Key Scientific Points

1. A change can be chemical or physical.
2. Signs of a physical change could include a state change.
3. A chemical change or reaction occurs when new substances are formed because atoms become reorganized and bond to different atoms. It can be difficult to get the starting materials back.
4. Signs of a chemical change could include-
 - There is a colour change.
 - There is be a gas made. This can be observed as bubbling, fizzing, effervescing.
 - There is a temperature change.
5. Reactants are the chemicals that we start with and products are what the reactants turn into during a chemical reaction.
6. Atoms are not created or destroyed in physical changes or chemical reactions. Therefore mass is always conserved in a chemical reaction.
7. The chemical formula shows how many of each atom is combined in a molecule.
8. Chemical equations show how atoms are arranged before and after a reaction.
9. (s) means solid, (l) means liquid, (g) means gas and (aq) means aqueous or dissolved in water.
10. An exothermic reaction heats the surroundings.
11. An endothermic reaction cools the surroundings.
12. Testing for common gases:
 - H₂ creates a squeaky pop when ignited.
 - O₂ relights a glowing splint.
 - CO₂ turns limewater cloudy.
13. Thermal decomposition is the breaking down of a chemical due to heating.
14. Oxidation is a reaction in which oxygen atoms bond to other elements producing oxides. Combustion is an exothermic example of this.
15. Reduction is a reaction in which oxygen atoms are removed from a compound. Displacement reactions are an example of reduction (and oxidation of the other reactant).
16. The rate of a reaction is how quickly it occurs. In order to find a rate you must observe a change over time.