# Knowledge Organiser Key Stage 3

# Subject : Science Year: 7 Topic Title: Chemical Reactions

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| **Key Facts**   1. Features of a chemical change include a colour change, temperature change, sparks or flames and gas is made. 2. The periodic table is an arrangement of all the elements. 3. When equal volumes of acids and alkalis are added together a neutralisation reaction occurs. 4. On the pH scale: 1 to 6 is an acid, 7 is neutral and 8-14 are alkali. 5. Acidic solutions form when acids dissolve in water. 6. Alkaline solutions form when alkalis dissolve in water. 7. Solutions that are neither acidic nor alkaline are neutral. 8. Universal indicator can tell us how strong acidic or alkaline a solution is. 9. The closer to pH 0 you go, the more strongly acidic it is. 10. The closer to pH 14 you go, the more strongly alkaline it is. 11. Reactants are reacted together(e.g. iron and sulphur). 12. Products are formed in the reaction (e.g. iron sulphide). 13. The name of a salt has two parts; the first part comes from the metal in the alkali used, the second part comes from the acid that was used. 14. When hydrochloric acid is used the second part of the salt is called chloride. 15. When sulfuric acid is used the second part of the salt is called sulfate. 16. When nitric acid is used the second part of the salt is called nitrate 17. Total mass of the reactants = Total mass of the products |
| **Key words**   1. An atom is the smallest part of a chemical that can exist. 2. Reactants are the chemicals we react together. 3. Products are what is produced after the reaction has taken place. 4. An element is a substance that cannot be broken down into any other substance, for example gold. 5. Concentration How many particles are dissolved in a solution 6. Combustion is the burning of a fuel in oxygen 7. Acid a substance with a pH below 7 8. Alkalis a substance with a pH above 7 9. Neutral a substance with a Ph of 7 10. Hazard is any substance or item that could be dangerous 11. Corrosive any substance that can eat through materials 12. Hypothesis is a statement that can be tested scientifically |
| **Diagrams** |
| **Potential misconceptions to avoid / errors students often make**   * Energy cannot be ‘given off’ (or created, or destroyed) only transferred. * Equations should be written with an arrow **not** an equal sign. * ‘Squeaky pop’ is not the test for hydrogen. To test for hydrogen put a lit splint into the gas, if there is a squeaky pop then there is hydrogen present. * Do not use the word amount, it is **mass** (for solids) or **volume** (for liquids). |