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| **What will we be learning?**  **Types of Reaction** | **Why this? Why now?**  Previous Learning  Acids and Alkalis (Neutralisation), Metals non-metals  Future Learning  GCSE-Chemical Changes, Energy Changes, Organic Chemistry  A-Level- Enthalpy, Organic Synthesis  Enquiry Processes  Design a results table, obtaining and analysing data. Identifying variables | **Key Words:**  Hydrochloric acid  Sodium Hydroxide  Carbon dioxide  Chemical  Physical  Carbonate  Thermal  Decomposition  Complete  Incomplete  Combustion  Reactants  Products  Fuels  Independent variable  Dependent variable  Control variable  Prediction  Conclusion  Evaluation  Conservation  Hydrocarbon |
| **What will we learn?**  In this unit you will use limewater to test for carbon dioxide gas. You will be able to define thermal composition and write a word equation for the thermal decomposition of metal carbonates.  You will be able to describe and explain the difference between a chemical and a physical change. You will describe some evidence that a chemical reaction has taken place.  You will recognise that mass is conserved in a chemical reaction and reasons as to why the mass may appear to change.  **Misconceptions in this topic**  A chemical change involves the formation of a new substance. A physical change does not. Oxygen is not used up when a candle burns. It reacts with the carbon and the hydrogen in the candle to produce carbon dioxide and water.  Mass is always conserved in a chemical reaction. However, when one of the products is a gas, the gas escapes into the air giving the appearance that the mass has decreased. If we trapped the gas and prevented it escaping the mass of the products would be the same as the reactants. | |
| **What opportunities are there for wider study?**  **Careers:** Chemical Engineer, Environmental Chemist, Combustion Engineer, Gas Engineer, Materials engineer  STE(A)M  https://highcliffe.sharepoint.com/sites/LearnSTEM | |
| **How will I be assessed?**  End of Topic Test, PLC for self-assessment, Success Criteria provided for the candle investigation | |