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| **What will we be learning?**  C5- Energy Changes | **Why this? Why now?**  Chemistry- Structure and Bonding, Quantitative Chemistry, Organic Chemistry  Biology- Bioenergetics  Physics- Energy  Separate Chemistry | **Key Words:**  Exothermic  Endothermic  Reversible reaction  Activation energy  Energy level diagram  Reaction profile  Catalyst  Reactant  Product  Combustion  Oxidation  Neutralisation  Bond making  Bond breaking  Electrode  Electrolyte  Non-rechargeable  cell  Battery  Fuel Cell  Half equation |
| **What will we learn?**  Overall Energy Change= Energy to break bonds- Energy to make bonds  Calculating mean averages Data interpretation  Conversion of units Rearranging equations  Half equations for the hydrogen fuel cell:  2H2(g)→ 4H+ + 4e**-** O2 + 4H+ +4e- → 2H2O  **Common Misconceptions:**  Conservation of Energy  An endothermic reaction is one that takes in energy from the surroundings, so the temperature of the surroundings decreases.  An exothermic reaction is one that releases energy to the surroundings, so the temperature of the surroundings increases. | |
| **What opportunities are there for wider study?**  **Collins Revision guide relevant pages for this unit:**  Page 56-59, 78, 98  Chemical Engineer Energy Consultant Energy Trader  Heating Engineer Renewable and sustainable energy technologies  Formula1 technician- Fuels and Energy Data Analyst  Chemical Physicist Aerospace Engineer | |
| **How will I be assessed?**  **Deep Marking Task Title for this unit:** Temperature changes required practical  **Required Practical(s) for this unit:** Investigate the variables that affect temperature changes in reacting solutions such as, eg acid  plus metals, acid plus carbonates, neutralisations, displacement of metals. | |