Chemical energy revision Los

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| **Question** | **Answer** |
| 1. What is an exothermic reaction? | A reaction that releases energy in the form of heat |
| 1. Which are more unstable in an exothermic reaction, products or reactants? | Reactants are more unstable |
| 1. What is combustion? | When a fuel burns with oxygen to produce energy. |
| 1. Name the stable products of combustion? | Oxides of the element e.g. carbon + oxygen 🡺 carbon di**oxide** |
| 1. Why is a neutralisation reaction, exothermic? | Unstable acid is turned into more stable substances such as salt and water |
| 1. Is bond making exothermic or endothermic? | Exothermic – energy released to the surroundings |
| 1. Why would dissolving be exothermic? | **More energy released making new bonds between solute and solvent** than is taken in to break up the solute |
| 1. What is a displacement reaction? | Exothermic. A more reactive metal displaces another metal from a compound in solution.  E.g. iron + copper 🡺 iron + copper  sulfate sulfate |
| 1. What is an endothermic reaction? | Reactions that take in energy causing the surroundings to be colder. |
| 1. Which are more unstable in an endothermic reaction, products or reactants? | Products |
| 1. Is bond breaking endothermic or exothermic? | endothermic |
| 1. Why could dissolving be endothermic? | If **more energy is needed to break up the solute** than is released when new bonds form with the solvent. |
| 1. Why is evaporation endothermic? | Heat energy is required for the molecules to leave the liquid as a gas |
| 1. True or false? Chemical reactions go at different speeds. | True |
| 1. What must happen to the particles for a reaction to occur? | Reactant particles must collide. |
| 1. List the four ways to speed up a rate of reaction. | * Increase the surface area (small particle size) * Increase temperature * Increase concentration * Add a catalyst |
| 1. What is a catalyst? | A substance that speeds up a chemical reaction and remains unchanged when the reaction is completed (ended) |
| 1. Name the catalyst used to increase the rate of decomposition of hydrogen peroxide. | Manganese dioxide |
| 1. What is an enzyme? | Biological catalyst |
| 1. Name the enzyme that breaks down hydrogen peroxide. | Catalase |
| 1. Name an application for an exothermic reaction. | Heat pack |
| 1. Name an application for an endothermic reaction. | Ice Pack |