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
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| 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 |