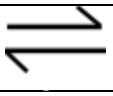
C5 Rates of reaction Fact Sheet

Collision theory	
1. What do particles need to do to react? (1)	**collide**
2. What do we call the minimum amount of energy needed for a reaction to occur?(1)	Activation energy
Factors affecting rate	
3. Describe 5 ways to increase the rate of a chemical reaction (5)	• **Increase temperature** • **Add a catalyst** • **Increase the concentration of a liquid** • **Increase the pressure of a gas** • **Increase the surface area of a solid**
4. Explain the effect of increasing the temperature on rate of reaction? **(2)**	**Higher collision frequency** Because particles have more kinetic energy
5. Explain the effect of increasing concentration on rate of reaction **(2)**	**Higher collision frequency** Because there are more particles
6. Explain the effect of increasing pressure on rate of reaction **(2)**	**Higher collision frequency** Because the particles are closer together
7. Explain the effect of increasing surface area on rate of reaction **(2)**	**Higher collision frequency** Because more solid particles are on the edge
Catalysts	
8. What do catalysts do?(2)	• **Speed up reaction** • **Without being used**
9. Different reactions need different…(1)	Catalysts
10. What do we call biological catalysts? (1)	**Enzymes**
11. How do catalysts speed up reactions? (1)	Reduce the activation energy
12. Are catalysts in the word equation for a reaction? (1)	No
13. Why are catalysts not in the word equation for a reaction? (1)	Because they are not used up, they are still there at the end and are not changed.
14. Vegetable oils can be converted into margarine by reacting them with hydrogen gas. This reaction happens faster when nickel is added. Name the catalyst (1)	**Nickel**
Reversible reactions	
15. What happens in an endothermic reaction? (1)	**Heat is taken in from the surroundings**
16. What happens during an exothermic reaction? (1)	**Heat is given out to the surroundings**

17.Draw the arrow for a reversible reaction (1)	
18. What is a reversible reaction? (1)	A reaction in which the products of the reaction can go back to the reactants
19. If a reversible reaction is endothermic in one direction, what will it be in the other direction? (1)	Exothermic
20. 800J of energy are released by an exothermic reversible reaction. State how much energy is needed to make this reaction go in the endothermic direction (1)	**800 J**
21.13,000 J of energy are needed for a reaction to go in the endothermic direction. How much energy is released by the exothermic reaction? (1)	**13,000 J**
22.How can the direction of a reversible reaction be changed? (1)	Changing the condition e.g. changing the temperature
23.Describe when a reversible reaction will reach equilibrium (1)	When it happens in a sealed container

NOTE – AS THIS IS A SHORTER TOPIC (IN TERMS OF FACTS) SOME OF THE MARKS ON THE FACT TEST WILL BE FROM THE C4 REACTIONS TOPIC DONE IN YEAR 10! (SEE REVISION PACKS, WHICH ARE ON CLASS CHARTS FOR FACT SHEETS)