

Year 10 Science Personalised Learning Checklist- Summer 1
Chemistry: Reacting Substances

	Learning Statements	Tier	R	A	G
1	Explain how energy is conserved in reactions	F			
2	Define and give examples and uses of exothermic and endothermic reactions	F			
3	Evaluate data to decide whether a reaction is exothermic or endothermic	F			
4	RP Temperature Changes: Investigate the variables that affect temperature changes in reacting solutions	F			
5	Define activation energy	F			
6	Use reaction profiles to show energies of reactants and products and link to exothermic and endothermic and draw simple reaction profiles for endothermic and exothermic reactions.	F			
7	Explain whether energy is supplied or released when bonds are broken and made (HT only)	F			
8	Calculate the overall energy change in a reaction using bond energies and use this to decide if a reaction is endothermic or exothermic (HT only)	F			
9	Calculate the mean rate of reaction	F			
10	Recall the units for mass (g), volume (cm ³) and rate (g/s, cm ³ /s, mol/s)	F			
11	Draw tangents on curves in order to calculate rates of reaction	F			
12	Explain the collision theory and link to activation energy	F			
13	Describe and explain factors that affect rates of reaction (concentration, pressure, surface area, catalysts and temperature)	F			
14	Plot and interpret graphs showing rates of reaction	F			
15	Explain why one reactant is used in excess in a chemical reaction	F			
16	Describe what is meant by 'a limiting reactant'	F			
17	RP Rates of Reaction: Investigate how changes in concentration affect the rates of reactions by measuring volume of the gas and change of colour	F			
18	Give examples of catalysts	F			
19	Draw a reaction profile for a catalysed reaction	F			
20	Use the appropriate symbol to denote a reversible reaction	F			
21	Explain energy changes in reversible reactions (ammonium chloride and hydrated copper sulphate)	F			
22	Explain what is meant by the term 'equilibrium'	F			
23	Explain and use Le Chatelier principle to make predictions about reactants and products (HT only)	F			
24	Explain the effect of changing concentration, pressure and temperature on equilibrium (HT only)	F			
25	Calculate the mass of solute in a given volume of solution	F			
26	Explain how the mass of a solute and the volume of a solution is related to the concentration (HT only)	F			
27	Calculate the moles of a solute in a given volume of solution	F			

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