

KS3 Unit Overview – Big Picture

Subject/Year group/Unit Title	Big picture questions	Pupils will focus particularly on the following statements from the programme of study:
<p style="text-align: center;">Chemistry Year 9D Chemical Reactions</p> <p>Lesson 1: Chemical Reactions and the conservation of mass Lesson 2 + 3: Chemical equations Lesson 4: Combustion Lesson 5 + 6: The greenhouse effect and climate change Lesson 7: Exothermic and Endothermic Reactions Lesson 8: The effect of catalysts Lesson 9: Polymers Lesson 10: Ceramics and composites Lesson 11: EOU Assessment</p>	<ul style="list-style-type: none"> • Explaining common chemical reactions in terms of the rearrangement of atoms • Balancing symbol equations for these reactions • Using these equations to explain the conservation of mass • Qualitative explanation of thermo chemistry • Importance of types of materials linked to their properties • Importance of catalysts in industrial process • Impact of human activity on the environment 	<p>CCh1: chemical reactions as the rearrangement of atoms CCh2: representing chemical reactions using formulae and using equations CCh3: combustion, thermal decomposition, oxidation and displacement reactions CEa7: the production of carbon dioxide by human activity and the impact on climate* CA4: conservation of mass, changes of state and chemical reactions. CEn2: exothermic and endothermic chemical reactions (qualitative). CCh8: What catalysts do. CMA3: properties of ceramics, polymers and composites (qualitative).</p>
Assessment tasks	As FCJ educators, we will focus on the FCJ values by:	We will ensure students skills in reading, writing, communication and mathematics are enhanced by:
<ul style="list-style-type: none"> • Homework • Formative Badger Assessment • Summative end of unit test 	<p>Excellence – set highest possible standards for all learners Companionship – teamwork when completing practical investigations, respect during class discussions Dignity – class discussions and Q&A, ensuring everyone is listened to and their views heard</p>	<p>Mathematics – graph skills, time line, balancing equations, groups and periods Reading – within lessons themselves and literacy news reports Writing – extended Badger assessment Communication – discussions within lessons,</p>

	<p>Justice - class discussions and Q&A, ensuring everyone is listened to and their views heard</p> <p>Hope – highlight progress in science and innovation to inspire learners</p> <p>Gentleness – classroom management in a firm but fair and gentle manner</p>	
We are supporting progression from KS2 in this unit by:	We are supporting progression to KS4 in this unit by:	Misconceptions and how they will be addressed
Learners have an understanding of physical and chemical changes. They have been introduced to the particle theory.	<p>Introduction to important reactions such as oxidation and thermal decomposition.</p> <p>Importance of the properties of materials linked to their uses. Importance of catalysts in industrial processes. Importance of thermochemistry.</p> <p>Impact of human activity on the environment.</p> <p>Representing substances using formulae.</p> <p>Representing chemical changes using equations.</p>	<p>Mass can be lost and gained in chemical reactions</p> <p>When balancing equations pupils change subscripts instead of just adding coefficients</p> <p>Global warming is linked to ozone depletion</p>