

**Barnsley Academy – (Year 9 Science 9CE) Curriculum**  
**Scheme of Work – 2023-24**

Term 1 – Week 2

	1	2	3	
<b>Lesson Focus</b>	Big Picture – Temperature & Surface area?	Big Picture – Catalysts	Big Picture – Endothermic and Exothermic reactions	
<b>Prerequisite Knowledge</b>	Y7 & Y8 Particles Chemical reactions 7CC Previous lessons: Measuring rates, conclusions from rate of reaction graphs, effect of concentration on rates	Y7 & Y8 Particles Chemical reactions 7CC Previous lesson: Measuring rates, conclusions from rate of reaction graphs, effect of concentration on rates, Temperature & surface area	Y7 & Y8 Particles Chemical reactions 7CC Previous lessons: Measuring rates, conclusions from rate of reaction graphs, effect of concentration on rates, Temperature & surface area, Catalysts	
<b>Core Knowledge</b>	<ul style="list-style-type: none"> <li>▪ Plot data appropriately</li> <li>▪ Describe and explain the effect of temperature on rates of reaction, using particle theory.</li> <li>▪ Describe and explain the effect of changing surface area on the rate of reaction</li> </ul>	<ul style="list-style-type: none"> <li>▪ Describe what a catalyst is and how it affects the rate of a reaction</li> <li>▪ Compare three catalyst sources, identifying variables to change, measure and control</li> <li>▪ Collect data and describe results from it</li> </ul>	<ul style="list-style-type: none"> <li>▪ Define endothermic and exothermic reactions</li> <li>▪ Make and record accurate temperature readings</li> <li>▪ Recognize endothermic and exothermic reactions from temperature changes</li> <li>▪ Suggest and explain changes to equipment that would improve the data collected.</li> </ul>	
<b>Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)</b>	Modelling mean calculations. Modelling explanation steps.	Modelling graph drawing, description and explanation using a visualiser.	Highlighting key definitions, endothermic and exothermic reactions Demonstrating practical procedure on investigating temperature changes of chemical reactions.	
<b>Independent Practice</b>	IP 1 – calculation of mean values and plotting graph. IP 2 – exam question on effect of temperature on rates of reactions IP 3 – exam question on effect of surface area on rates of reactions	IP 1 – definition, mode of action and use of catalysts in industry. IP 2 – identifying variables in an investigation for the best source of catalyst.	IP 1 –defining endothermic and exothermic reactions, identifying type of reaction from given temperature changes. IP 2 – carrying out the practical on investigating temperature changes	

		<p>IP 3 –carrying out the practical to determine the best source of catalyst.</p> <p>IP 4 –conclusion from the practical investigation.</p> <p>IP 5 – Catalysts exam question.</p>	<p>of chemical reactions and identifying the reactions as being endothermic or exothermic.</p> <p>IP 3 –changes on equipment to improve accuracy of experimental results.</p> <p>IP 3 – Exam question of endothermic and exothermic reactions.</p>	
<b>Assessment</b> (Informal/Formal)	Circulation/live feedback/self-assessment/class assessment/whole class feedback (mini whiteboard)/quiz.	Circulation/live feedback/self-assessment/class assessment/whole class feedback (mini whiteboard)/quiz.	Circulation/live feedback/self-assessment/class assessment/whole class feedback (mini whiteboard)/quiz.	
<b>Resources</b>	worksheets, graph paper	Worksheets, practical equipment	practical equipment, worksheets	
<b>Specific SEN(D)/EAL support</b>	Axis on graphs provided for SEN/EAL	Scaffolded IP 1 & IP 2		