




YEAR 10 TERM 2

'An ambitious curriculum that meets the needs of all'

Medium Term Planning - Topic: Specific Materials - Polymers

Curriculum Intent	In addition to working further on objectives from Year 9 , pupils will be taught, following National Curriculum guidelines, the following this term: Materials – Specific Material Unit:
Skills/Assessment Objective Links	<p>Sources, origins and properties</p> <ul style="list-style-type: none"> To be able to gain knowledge of the primary sources of polymers and the processes involved in converting into workable forms (refining crude oil, fractional distillation and cracking). To know and understand how different properties of materials and components are used in commercial products, how properties influence use and how properties affect performance. To know and understand the physical and mechanical properties relevant to commercial products for polymers. To know how additives are added to polymers and reasons why. <p>Working with timbers</p> <ul style="list-style-type: none"> Know and understand the commercial stock forms, types and sizes of materials in order to calculate quantities Be aware of school-based cutting, forming and processing techniques, tools and equipment for polymers. <p>Commercial manufacturing, surface treatments and finishes</p> <ul style="list-style-type: none"> Know and understand how polymers are selected and processed for commercial products Learn how materials are cut, shaped and formed to a tolerance i.e kerfing Learn about the preparation and application of treatments and finishes to enhance functional and aesthetic properties
Spiritual, moral, social, and cultural development	<p>SMSC: Sustainability linking to materials and reduction in CO2 emissions</p> <p>PSHE/British Values: environmental issues</p> <p>Skills Builder: Linking product with the type of material and the reasons why the material is used.</p>
Numeracy	Standard size materials and what measurements they are bought in
Literacy	<p>Vocabulary Tier 2: see highlighted above</p> <p>Vocabulary Tier 3: see highlighted above</p> <p>Reading: exam style questions</p> <p>Writing: use of technical tier 3 vocabulary within an exam question and annotation</p> <p>Oracy: when questioned pupils are able to use technical subject specific language</p>
Becoming future ready	Careers/Employability: Materials scientist / product designer
Adaptation	Throughout this topic, quality first teaching will provide differentiation:
QFT/SEND Provision	<p>By product:</p> <p>By resource: PG Online booklets, teacher let focus, PG Online books</p> <p>By Intervention: by providing different levels of supervision and support</p> <p>By Progressive Questioning: exploring pupils' understanding through interactive dialogue.</p> <p>By Grouping: according to prior attainment, gender, social preference, preferred learning style.</p> <p>By Task: Pupils should be involved in the identification of targets which are meaningful to them and in the selection of an appropriate task from the given range.</p> <p>By Offering Optional Activities: In class or as homework, to extend learning.</p> <p>This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work.</p>
Implementation	<p>To be able to:</p> <ul style="list-style-type: none"> See above

Curriculum Delivery	<ul style="list-style-type: none">To know and understand how different properties of materials and components used in commercial products, how properties influence use and how properties performance.To know and understand the physical and mechanical properties relevant to commercial products for polymers.	
Learning Outcomes (Knowledge)		
Current learning to be developed in the future within:	To be able to use knowledge and understanding and apply to the NEA when selecting, using, processing and finishing their own materials	
Assessment	End of Unit test on material areas – using PG Online resources and text book and linking to PLCs in Doodle	
Impact	Pupils to have knowledge of materials so that pupils are able to know how the material works and select the appropriate material for the NEA and to answer questions in the exam.	