

DT Resistant Materials - Lower school

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7	Unit Title	Introduction to Resistant Materials.	Making: Spatula (Wood)	Making: Hooks/Dogtags (Metal)		Making: Keyrings (Acrylic)	
	Learning focus	Recall, select and communicate, knowledge and understanding in design and technology including its wider effects. Introducing subject specific and technical language. Introduction to the design process. Researching and data collection. Problem solving. Theoretical introduction to materials and their working properties.		Apply knowledge, understanding and skills in a variety of contexts and in designing and making products.		Analyse and evaluate products, including their design and production. Extended and analytical forming of evaluations. Developing an understanding of evaluating a product and suggesting changes or improvements	
	Assessments	Regular examination style assessments along with tutor, peer and self assessment.	Regular examination style assessments along with tutor, peer and self assessment.	Regular examination style assessments along with tutor, peer and self assessment.	Regular examination style assessments along with tutor, peer and self assessment.	Regular examination style assessments along with tutor, peer and self assessment.	Full GCSE Paper
	Homework	Key words: spelling and definitions. Words se according to SOW	Key words: spelling and definitions. Words se according to SOW	Key words: spelling and definitions. Words se according to SOW	Key words: spelling and definitions. Words se according to SOW	Key words: spelling and definitions. Words se according to SOW	
8	Unit Title	Developing skills	Making: Toy car (Wood)	Making: Phone holder (Acrylic)	Making: CAD / CAM & design inspired	Making: Squeezy torches (Electronics)	Making: CAD/CAM and materials
	Learning focus	Further knowledge and usage of subject specific and technical language. Devloping the design process. Researching and data collection. Problem solving.		Theoretical knowledge to materials and their working properties.		Extended and analytical forming of evaluations. Developing an understanding of evaluating a product and suggesting changes or improvements	
	Assessments	Regular examination style assessments along with tutor, peer and self assessment	Regular examination style assessments along with tutor, peer and self assessment	Regular examination style assessments along with tutor, peer and self assessment	Regular examination style assessments along with tutor, peer and self assessment	Regular examination style assessments along with tutor, peer and self assessment	Full GCSE Paper
	Homework						
9	Unit Title	Advancing skills	Making: Shadowbox (Wood)	Charms / Jewellery(Metal)		CAD / CAM drawings	Pop up books (graphics)
	Learning focus	Researching and data collection. Problem solving. Theoretical introduction to materials and their working properties.		Extended and analytical forming of evaluations.		Further development of an understanding of evaluating a product and suggesting changes or improvements	
	Assessments	Regular examination style assessments along with tutor, peer and self assessment.	Regular examination style assessments along with tutor, peer and self assessment.	Regular examination style assessments along with tutor, peer and self assessment.	Regular examination style assessments along with tutor, peer and self assessment.	Regular examination style assessments along with tutor, peer and self assessment.	Full GCSE Past Paper
	Homework						

DT Resistant Materials - Upper school

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
10	Unit Title	Clocks (Acrylic)			Decorated/lined Boxes (Wood)		
	Learning focus	Advanced projects Candidates recall , select and communicate detailed knowledge and thorough understanding of DT. They apply relevant knowledge, understanding and skills in a range of situations to plan and carry out investigations and tasks effectively. They test their solutions and work safely with a high degree of precision . They analyse and evaluate the evidence available, reviewing and adapting their methods when necessary. They present information clearly and accurately, making reasoned judgements and presenting substantiated conclusions .					
	Assessments		GCSE questions	Controlled Assessment	Controlled Assessment	Controlled Assessment	Full GCSE Past Paper
	Homework						

Unit Title	Controlled Assessment	Controlled Assessment	Controlled Assessment	Controlled Assessment		
Learning focus	<p>Candidates recall, select and communicate detailed knowledge and thorough understanding of Resistant Material by addressing the following: They apply relevant knowledge, understanding and skills in a range of situations to plan and carry out investigations and tasks effectively. They test their solutions and work safely with a high degree of precision. They analyse and evaluate the evidence available, reviewing and adapting their methods when necessary. They present information clearly and accurately, making reasoned judgements and presenting substantiated conclusions</p> <p>Design Theory</p> <ul style="list-style-type: none"> • Ergonomics • Anthropometrics • CAD/CAM - recognise the economic importance • ICT to research, record and gather materials for planning tasks. • Scale models • Prototypes • Virtual Reality • Constructional details • Planned obsolescence • QC and QA • Simple mechanisms • Electrical systems <p>Resistant materials and components</p> <ul style="list-style-type: none"> • Metals – ferrous and non-ferrous • Timber - hardwoods, softwoods and manufactured boards • Plastics – thermoplastics and thermosetting • Composites • Smart materials • Nanomaterials and nanocomposites • Awareness of sources of materials • How they can be reused, recycled or disposed of • Environmental consequences • Working properties • Heat treatments of metals • Combining materials to change properties <p>Manufacturing</p> <ul style="list-style-type: none"> • Tools and equipment for resistant materials • Preparation of materials – e.g. degreasing, planning, sawing cutting. • Marking out • Templates, jigs and formers • CAD/CAM – understanding of x, y and z co-ordinates and subtractive and additive processes. • Cutting • Shaping • Forming • Casting and moulding • Permanent and non-permanent joining • Cleaning and finishing materials • Quality finishes – fillers, acrylic paint. • Adhesives – PVA, epoxy resins, hot glue and contact adhesive. • Standard bought in parts – components and fixings. • Scales of production – one off, batch and mass. 					
Assessments	<p>GCSE Questions on Sustainability 6 R's Moral, cultural , economic and environmental issues Product Life Cycle – life cycle analysis Material and social costs of products</p>	PPE 1	<p><u>GCSE Questions on Health and Safety</u> Risk Assessment COSHH Safety signs and symbols PPE.</p>	PPE 2		
Homework						