Year 9 - Scheme of Learning: Resistant Materials

Word Rich - Oracy, Vocabulary, Reading, Writing	SMSC & Values	Careers & Employability	Enrichment & Cultural Capital	Equality, Diversity & Inclusivity
❖ Tier 2/3 Vocabulary every lesson - meanings and etymology ❖ Use of texts to support reading/research ❖ Group presentations - Oracy ❖ Use of cold calling oracy in lesson questioning	● SMSC: Sustainability ● Values taught through moral choices when designing products ● Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers	● The role of a Designer ● How skills learnt in DT are transferable to other subjects and career paths (Eg Problem Solving)	● Looking at the work of others included in GCSE content.	● Using research and exploration, such as the study of different cultures, to identify and understand user needs

Formal Assessments (Title/Date)	Blended Learning	Home Learning
❖ Investigation, design and evaluation Biomimicry lamps (30 Marks) ❖ Manufacturing of Prototype Model (30 Marks) ❖ End of Module Theory Test (30 marks)	● Research ● Moodboard ● CAD	● Research ● Moodboard ● Timbers and Polymers ● Design and Design development

Unit of Work	Knowledge and *Skills*	Curriculum Links and Sequencing	National Curriculum *(including KS2)*
Intro to project *Lesson 1*	★ Intro to subject, careers and DT links ★ Sustainability - Meaning in terms of design and 6 Rs ★ Research into prototyping and the benefit ★ Iterative design process ★ Categories of timber (softwoods, hardwoods, manufactured boards), properties & characteristics of timber, sustainability factors of timber, joining techniques for timber, finishes for timber ★ Types of timber joints	**GCSE Link:** ➔ 1.1 Investigation of needs and research **Wider Curriculum Links:** ➔ Links with Art, Geography & Science ➔ Cultural SMSC **Sequencing Links:** ➔ 6 Rs across all DT now embedded ➔ Understanding how research influences design	● Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists ● Analyse the work of past and present professionals and others to develop and broaden their understanding ● Use biomimicry design to influence and inspire design ideas and development

Responding to a design brief & Specification *Lesson 2-4*	★ Design brief: Biomimicry Lamp ★ Responding to a specification - consider constraints, materials and user needs ★ Developing a mood board based on the specification, brief and previous research	**GCSE Link:** ➔ 2.1 NEA Design and Develop ➔ 7.6.2 Scales of production ➔ 1:12 The categorisation of the types, properties and structure of natural and manufactured timbers ➔ 7.2.5 The physical characteristics of each timber: **Wider Curriculum Links:** ➔ Careers: (Architecture & Design) **Sequencing Links:** ➔ Understanding Specification - links to All DT areas and future progression	● use research and exploration, to identify and understand user needs ● identify and solve their own design problems and understand how to reformulate problems given to them ● develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations ● use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses develop and communicate design ideas ● using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools ● select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture ● select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties
Drawing Skills *Lesson 5-6*	★ Annotated sketches, design justification and development ★ Exploded drawing ★ Generating ideas - ideation ★ Rendering techniques	**GCSE Link:** ➔ 1.17 Communication to present ideas ➔ 7.8.1 Surface finishes and treatments: ➔ NEA: Design & Develop **Wider Curriculum Links:** ➔ Maths (Scale) Art (use of media) ➔ Career: CAD technician, product design **Sequencing Links:** ➔ Basic design skills - drawing, perspective, CAD modelling to build onto more progressive techniques in Y8/9	
Manufacture *Lesson 7-10*	★ Iterative design ★ Apply theme to design outcome ★ Accuracy of corner halving joint ★ **Assessment: Final model of Lamp**		
Evaluation *Lesson 10*	★ **Assessment: Evaluation and annotation against specification** ★ Peer and self-assessment ★ Recap skills and knowledge gained so far. ★ Review of design ideas compared to manufacture	**GCSE Link:** ➔ NEA: Evaluation **Wider Curriculum Links:** ➔ English (Structure of an evaluation) **Sequencing Links:** ➔ Use of spec to evaluate and adapt design proposals	● test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups

Manufacture And Evaluation *Lesson 11-13*	★ Finishing of timber ★ Health and safety, use of modelling tools ★ **Assessment: Final model of lamp**	**GCSE Link:** ➔ NEA: Manufacture **Wider Curriculum Links:** ➔ Maths (Measurement & Scale) ➔ Career: Model maker **Sequencing Links:** ➔ Introductory making skills to progress onto Y8/9	• select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture
End of module Test & Reflection *Lesson 14-15*	★ **Assessment: End of module test (Knowledge)** ★ Review and reflection of marks ★ Links to careers and other subjects ★ Reflect on Learning Journey and DT mapping & progressions ★ Reflect on fundamental researching, designing, making and evaluation skills that will be consistently used through their DT Learning Journey.	**GCSE Link:** ➔ Core Theory **Wider Curriculum Links:** ➔ English and Maths **Sequencing Links:** ➔ Knowledge recall through exam style questions	