YEAR 10 DT CURRICULUM PROGRESSION OVERVIEW

Building upon prior learning undertaken throughout Key Stage 3, pupils are awarded the opportunity to further develop the knowledge, understanding and skills required to carry out the iterative design process of exploring, creating and evaluating. The projects serve to address the key principle topics; core technical, specialist technical and designing and making. The core technical principles that are addressed include: new and emerging technologies, development in new materials, materials and their working properties. In terms of specialist technical principles, students develop an in-depth knowledge and understanding of issues relating to the appropriate selection of materials, specialist techniques and processes, using and working with materials and ecological and social concerns. Designing and making principles serve to allow students to understand that D&T activities take place within a wide range of contexts. These are undertaken through topics including: investigation, primary and secondary research, examining the work of others, appropriate design strategies, effective communication of design ideas and the use of specialist tools and equipment.

Topic	Project 1	Project 2	Specialist Technical Principles	NEA
Core Knowledge/ **Threshold Concept**	Pupils are introduced to the framework for folder work required for the research section of the NEA. Therefore, it is important that pupils are able to complete the following sections during this mini-project: A detailed task analysis Product Analysis using ACCESS FM A detailed list of specifications An A3 page of creative design ideas suitable to the problem Pupils will also be taught key exam content in order to prepare them for their mock exams and end of course exam. Here, pupils will cover areas on the selection of materials, Ecological and Social Footprint as the core principles of Design and Technology. Pupils will also develop and enhance their practical skills in preparation for the realisation section of the NEA.	Pupils are introduced to the framework for folder work required for the research and design section of the NEA. Therefore, it is important that pupils are able to complete the following sections during this mini-project: Investigate the work of others Mood and inspiration boards Research into components Materials research; properties and uses Social and moral issues Pupils will also be taught key exam content in order to prepare them for their mock exams and end of course exam. Here, pupils will cover areas on specialist techniques and the environmental and social challenge as well as the core principles of Design and Technology. Pupils will also develop and enhance their	Pupils will be taught key exam content for section B of the Exam in order to prepare them for their mock exams and end of course exam. Here, pupils will cover areas relating to their chosen specialist are (product design, textiles or electronics) on the following topics: • Selection of Materials and Components • Forces and Stresses • Ecological and Social Footprint • Sources and Origins • Using and Working with your Chosen Material • Stock Forms, Types and Sizes • Scales of Production • Specialist Technical Processes • Surface Treatment and Finishes	Pupils start their NEA on the 1st of June. Therefore, they begin to complete the research section of the coursework: • Challenge analysis • Task Analysis • Client Interview • Product Analysis • Research into designers • Mood board This then leads on to the second section. Here, they ill rite a comprehensive design brief and a justified and relevant list of specifications relevant to their chosen challenge. Exam preparation is continued through home learning tasks and a mock exam.

		practical skills in preparation for the realisation section of the NEA.		
Why this learning now?	Projects undertaken in Year 10 are designed to further develop and expand upon skills, knowledge and understanding experienced at KS3. Working through each project allows pupils to become proficient with a broad range of relevant tools, equipment and machinery, with an underlying focus on appropriate health and safety requirements at every stage. Pupils cover the different working properties of the materials used and learn how to analyse products in more depth, construct detailed specifications and draw design ideas in isometric and two-point perspective both by hand and by employing CAD software. Pupils are also taught how to evaluate their work in more detail from KS 3, taking into account the different views of clients, users etc.	Projects undertaken in Year 10 are designed to further develop and expand upon skills, knowledge and understanding experienced at KS3. Working through each project allows pupils to become proficient with a broad range of relevant tools, equipment and machinery, with an underlying focus on appropriate health and safety requirements at every stage. Pupils cover the different working properties of the materials used and learn how to analyse products in more depth, construct detailed specifications and draw design ideas in isometric and two-point perspective both by hand and by employing CAD software. Pupils are also taught how to evaluate their work in more detail from KS 3, taking into account the different views of clients, users etc.	Pupils have covered section A of the exam during the revision lessons incorporated into the SOW for projects 1 and 2. The specialist technical principle section is where pupils dive deeper into their chosen expertise for DT. Working through this scheme of work prepares them for their mock exam in year 10, which occurs during June.	The Design Challenges are released by AQA on the 1st of June. This is when the NEA section (50%) of the course starts. We continue with preparing pupils for the exam through a series of home learning tasks and mock exams.
Assessment Opportunities:	Homework tasks are set every 3 weeks to recap on the learning from each project and to also cover the course information requirements. A test is carried out at the end of each term to identify gaps in learning followed by plugging the gaps session to review areas of issue. Each project is marked using the WINS system where gaps are also	Homework tasks are set every 3 weeks to recap on the learning from each project and to also cover the course information requirements. A test is carried out at the end of each term to identify gaps in learning followed by plugging the gaps session to review areas of issue. Each project is marked using the WINS system where gaps are also	Homework tasks are set every 3 weeks to recap on the learning from each project and to also cover the course information requirements. A test is carried out at the end of each term to identify gaps in learning followed by plugging the gaps session to review areas of issue. Each project is marked using the WINS system where gaps are also identified	Homework tasks are set every 3 weeks to recap on the learning from each project and to also cover the course information requirements. A mock exam is carried out in the last half-term. Responsive AFL used in all lessons.

	identified and the pupils asked to act upon them. Responsive AFL used in all lessons.	identified and the pupils asked to act upon them. Responsive AFL used in all lessons.	and the pupils asked to act upon them. Responsive AFL used in all lessons.	
Learning at Home	Homework tasks are set every 3 weeks to recap on the learning from each project and to also cover the course information requirements.	Homework tasks are set every 3 weeks to recap on the learning from each project and to also cover the course information requirements.	Homework tasks are set every 3 weeks to recap on the learning from each project and to also cover the course information requirements.	Homework tasks are set every 3 weeks to recap on the learning from each project and to also cover the course information requirements.
Key Vocabulary	Functionality, Availability, Aesthetics, Cost of Materials, Environmental Factors, Social Factors, Ethical Factors, Cultural Factors, Strength, Hardness, Toughness, Elasticity, Malleability, Ductility, Electrical conductivity, Thermal conductivity	Templates, Jigs, Patterns, Carbon Footprint, Social Footprint, Deforestation, Fairtrade, Forest Stewardship Council (FSC), Market Pull, Market Push	Aesthetics, function, availability, torsion, tension, compression, shear, bending, one-off production, batch production, mass production, continuous production, ecological, social, stock form	Aesthetics, Cost, Customer, Client, Environment, Size, Safety, Function, Materials, Manufacture, Biomimicry
Spiritual, Moral, Social and Cultural concepts covered	A key element of the AQA specification, and therefore the projects, exam content and NEA, we cover core areas of social, moral and cultural issues in relation to design; e.g. inclusive design, ecological impact of materials and products, etc.			
Links to careers and the world of work	Constant referral to industry and design in the real world and career paths.			

YEAR 11 DT CURRICULUM PROGRESSION OVERVIEW

At Y11 the pupils embark on the NEA aspect of the course and through this work they will address the key principle topics; core technical, specialist technical and designing and making. The core technical principles that are addressed include: new and emerging technologies, development in new materials, materials and their working properties. In terms of specialist technical principles, students develop an in-depth knowledge and understanding of issues relating to the appropriate selection of materials, specialist techniques and processes, using and working with materials and ecological and social concerns. Designing and making principles serve to allow students to understand that D&T activities take place within a wide range of contexts. These are undertaken through topics including: investigation, primary and secondary research, examining the work of others, appropriate design strategies, effective communication of design ideas and the use of specialist tools and equipment.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	NEA: Generating design ideas	NEA: Developing design ideas	NEA: Realising design ideas	NEA; Analysing and evaluating	Exam Preparation	Exam Preparation
Core Knowledge/ Threshold Concept	Students should explore a range of possible ideas linking to the contextual challenge selected. These design ideas should demonstrate flair and originality and students are encouraged to take risks with their designs. Students may wish to use a variety of techniques to communicate. Students will not be awarded for the quantity of design ideas but how well their ideas address the contextual challenge selected. Students are encouraged to be	Students will develop and refine design ideas. This may include, formal and informal 2D/3D drawing including CAD, systems and schematic diagrams, models and schedules. Students will develop at least one model, however marks will be awarded for the suitability of the model(s) and not the quantity produced. Students will also select suitable materials and components communicating their decisions	Students will work with a range of appropriate materials/components to produce prototypes that are accurate and within close tolerances. This will involve using specialist tools and equipment, which may include hand tools, machines or CAM/CNC. The prototypes will be constructed through a range of techniques, which may involve shaping, fabrication, construction and assembly. The prototypes will have suitable finish with functional and	Within this iterative design process students are expected to continuously analyse and evaluate their work, using their decisions to improve outcomes. This should include defining requirements, analysing the design brief and specifications along with the testing and evaluating of ideas produced during the generation and development stages. Their final prototype(s) will also undergo a range of tests on which the final evaluation will be formulated. This	Pupils will need to understand the core principles of design and technology alongside the selection of materials and components, ecological footprint, the environmental and social challenge, specialist techniques, material management, prototype development, the communication of design ideas.	Pupils will need to understand the core principles of design and technology alongside the selection of materials and components, ecological footprint, the environmental and social challenge, specialist techniques, material management, prototype development, the communication of design ideas.

	imaginative in their approach by experimenting with different ideas and possibilities that avoid design fixation. In the highest band students are expected to show some innovation by generating ideas that are different to the work of the majority of their peers or demonstrate new ways of improving existingsolutions	throughout the development process. Students are encouraged to reflect on their developed ideas by looking at their requirements; including how their designs meet the design specification. Part of this work will then feed into the development of a manufacturing specification providing sufficient accurate information for third party manufacture, using a range of appropriate methods, such as measured drawings, control programs, circuit diagrams, patterns, cutting or parts lists.	aesthetic qualities, where appropriate. Students will be awarded marks for the quality of their prototype(s) and how it addresses the design brief and design specification based on a contextual challenge.	should include market testing and a detailed analysis of the prototype(s).		
Why this learning now?	This is following the AQA specification for the NEA and must be completed in this order using the design process.	This is following the AQA specification for the NEA and must be completed in this order using the design process.	This is following the AQA specification for the NEA and must be completed in this order using the design process.	This is following the AQA specification for the NEA and must be completed in this order using the design process.	NEA has now been completed. Lessons and home learning tasks are now all focused on the preparation of the GCSE exam.	NEA has now been completed. Lessons and home learning tasks are now all focused on the preparation of the GCSE exam.

Assessment Opportunities:	Homework tasks are set every 3 weeks to recap on the learning from each part of the NEA. General class feedback can be given during this period but no specific advice to pupils as part of the rules of NEA.	Homework tasks are set every 3 weeks to recap on the learning from each part of the NEA. General class feedback can be given during this period but no specific advice to pupils as part of the rules of NEA.	Homework tasks are set every 3 weeks to recap on the learning from each part of the NEA. General class feedback can be given during this period but no specific advice to pupils as part of the rules of NEA.	Homework tasks are set every 3 weeks to recap on the learning from each part of the NEA. General class feedback can be given during this period but no specific advice to pupils as part of the rules of NEA.	Homework tasks are set every 3 weeks. Here, constant formative assessment is given during exam preparation using model answers to exam style questions.	Homework tasks are set every 3 weeks. Here, constant formative assessment is given during exam preparation using model answers to exam style questions.
Learning at Home	Homework tasks are set every 3 weeks. These home learning activities are designed to prepare students for their exam.	Homework tasks are set every 3 weeks. These home learning activities are designed to prepare students for their exam.	Homework tasks are set every 3 weeks. These home learning activities are designed to prepare students for their exam.	Homework tasks are set every 3 weeks. These home learning activities are designed to prepare students for their exam.	Homework tasks are set every 3 weeks. These home learning activities are designed to prepare students for their exam.	Homework tasks are set every 3 weeks. These home learning activities are designed to prepare students for their exam.
Key Vocabulary	Functionality, Availability, Aesthetics, Cost of Materials, Environmental Factors, Social Factors, Ethical Factors, Cultural Factors, Strength, Hardness, Toughness, Elasticity, Malleability, Ductility, Electrical conductivity, Thermal conductivity	Templates, Jigs, Patterns, Carbon Footprint, Social Footprint, Deforestation, Fairtrade, Forest Stewardship Council (FSC), Market Pull, Market Push	Prototype, Modelling, Two-Point Perspective Drawing, Isometric Drawing, Orthographic/Third Angle Drawing, Exploded Drawings, Flowcharts, Schematic Drawing, Nesting, Tessellation	Aesthetics, Cost, Customer, Client, Environment, Size, Safety, Function, Materials, Manufacture	Functionality, Availability, Aesthetics, Cost of Materials, Environmental Factors, Social Factors, Ethical Factors, Cultural Factors, Strength, Hardness, Toughness, Elasticity, Malleability, Ductility, Electrical conductivity, Thermal conductivity, Templates, Jigs, Patterns, Carbon Footprint, Social Footprint, Deforestation, Fairtrade, Forest Stewardship Council (FSC), Market Pull, Market Push, Prototype, Modelling, Two-Point Perspective Drawing, Isometric Drawing, Orthographic/Third Angle Drawing, Exploded Drawings, Flowcharts, Schematic Drawing, Nesting, Tessellation, Aesthetics, Cost,	

					Customer, Client, Environment, Size, Safety, Function, Materials, Manufacture
Spiritual, Moral, Social and Cultural concepts covered	A key element of the AQA specification, and therefore the projects, exam content and NEA, we cover core areas of social, moral and cultural issues in relation to design; e.g. inclusive design, ecological impact of materials and products, etc.				
Links to careers and the world of work	Constant referral to industry and design in the real world and career paths.				