The Design and Technology Curriculum

At Tupton Hall School the Design and Technology curriculum is mapped across five years and developed across the Redhill Academy Trust. We deliver schemes of work that are scaffolded at a detailed level to ensure that we tailor all learning to a pupil's individual needs. There are three main areas in Design technology: core technical principles, specialist technical principles and designing and making principles. It is an expectation that overtime students will interconnect these areas and become competent design technologists.

Students will construct a range of skills, which can be applied in a selection of engaging contexts that is relevant to young people to ensure they gain a better understanding of Design Technology in real-life situations. We also ensure that all students receive opportunities to participate in curriculum enrichment activities at appropriate points, enhancing their Design Technology learning experience.

The Design Technology curriculum offered at Tupton Hall School is a challenging one, which is tailored using the National Curriculum as a reference to offer breadth. During secondary school education, students will be taught the foundations of Design Technology, including material science, processes, effective design communication skills, the environmental and social impact of design and technology as well as analytical and evaluative skills, essential in developing both critical designers and discerning customers.

Technology is constantly evolving, and we have the responsibility at Tupton Hall School to provide all young people with the knowledge, application, and experience to be adaptable throughout technological changes in their future.

Extra-curricular

The Technology department offers various extra-curricular opportunities to develop skills. For example, opportunities to work on GCSE and DT projects.

Curriculum Intent

Students will learn how to communicate their ideas effectively, thinking and achievements with others effectively and to respond positively to both peer and teacher critique. This leads to students a deep understanding of the importance of user or client and beyond just producing for their own needs. Importantly, students will develop an appreciation for the iterative design process, which helps builds confidence and resilience when things go wrong and be able to analyse and evaluate their own work in order to understand how to continually progress and improve.

The intent of our Design Technology curriculum is to develop learners who:

- Communicate and develop ideas through sketches and models
- Manipulate materials and use tools safely and effectively to create your ideas
- Embrace the iterative design process
- Generate creative solutions to benefit people and the planet
- Learn how products are manufactured in industry
- Learn about the built world

Curriculum Implementation

We implement the intent of our curriculum through:

- Schemes of work which have the ability to be differentiated to meet the needs of a range of learning abilities.
- Schemes of work which progress in theoretical and practical challenge
- A robust expectation that students will show resilience in every lesson, this is facilitated through encouraging students to explore form and function considering a range of factors e.g. safety, ergonomics, anthropometrics, materials etc.
- A range of teaching methods that engage students, which emphasises the importance of designing for the benefit of people and the planet
- A reflective approach to the continuing professional development of Design Technology teachers (an 'open classroom' policy, collaborative planning, a teaching and learning focus to all faculty CPD).

KS3

Technology Foundation curriculum (Y7 & Y8)

Subject	Food Technology Year 7 Foundation		
Unit/Topic	Using equipment safely	Food safety	Healthy eating
Skills	To select and appropriately use a range of equipment safely and efficiently.	To select and prepare a range of components safely and efficiently.	To be able to differentiate components into food groups and nutritional value.
Knowledge	Identifying and selecting appropriate tools/equipment Knife skills Personal health and safety Movement around the kitchen Organisation Time management Reading a method (sequencing) Oven safety	Keeping food safe Food storage Cross contamination Key food temperatures Weighing and measuring	The Eatwell guide Food diary Evaluation of nutritional intake and making improvements for future.
Recall/review from previous learning	Practical application of knowledge Applying knowledge from demonstrations where practical ability is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations where food safety is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations where nutrition and is the main focus. Consolidating previous knowledge from theory lessons and practical lessons
Assessment	Summative assessment – end of unit graded tests. Written assessment. In class questioning Literacy – extended writing tasks. Self and peer assessment.	Summative assessment – end of unit graded tests - Written assessment In class questioning Literacy – extended writing tasks. Self and peer assessment. Practical assessment	Summative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment.
Cultural Capital, Equality, Diversity Inclusion	Evolution of tools- specialist equipment, kitchen staples	Traceability of foods Origins of ingredients	Impact of diet on individuals/society
Literacy/Numeracy	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down

Subject	Product Design Year 7 Foundation		
Unit/Topic	Introduction to Product Design	Jitterbug	Tea light
Skills	Marking out, equipment and tool usage.	Designing and making.	Designing and making.
Knowledge	Introduction to practical skills in DT. Also covering H&S and general safe practice. Toggle Puzzle.	Practical and theory-based unit where students produce a child's toy and develop a range of skills and knowledge, covering simple electronics, polymers and assembly. Students to apply knowledge of manufacturing the jitterbug to create an instructional document.	Practical unit focusing on designing, card modelling, 2D design.
Recall/review from previous learning	Basic H&S, marking out, tools and equipment.	Basic H&S, marking out, tools and equipment.	Basic H&S, marking out, tools and equipment.
Assessment	Assessment questions.	Practical assessment.	Practical assessment.
Cultural Capital, Equality, Diversity Inclusion	Links to H&S in industry, discussion regarding the consequences of not adhering to any health and safety policy in the workplace.	Links to H&S in industry, discussion regarding the consequences of not adhering to any health and safety policy in the workplace.	Links to H&S in industry, discussion regarding the consequences of not adhering to any health and safety policy in the workplace.
Literacy/Numeracy	Numeracy - marking out.	Numeracy - marking out.	Numeracy - marking out.

Subject	Computing Year 7 Foundation			
Unit/Topic	E-safety and communication	Programming using Scratch	Binary numbers and storage	Algorithms
Skills	Information technology skill, specifically Microsoft office skills. Digital literacy skills, specifically e-safety skills.	Programming skills.	Computer Science, information technology and web browsing skills.	Computational thinking skills.
Knowledge • **Declarative: 'Knowing that' – facts/concepts.** • **Procedural: 'Knowing how' – methods/processes**	**Declarative** e.g. layout of a letter and **procedural** e.g. how to: login, send an e-mail, word process a letter, and create a PowerPoint and spreadsheet. **Declarative** e.g. knowing social engineering techniques and **procedural** e.g. how to search the internet safely.	**Declarative** e.g. what is a variable and **procedural** e.g. how to create a variable in programming software.	**Declarative** e.g. What is a binary and **procedural** e.g. Binary conversion.	**Declarative** e.g what is Algorithmic thinking, pattern recognition, decomposition, abstraction. **Procedural** e.g. create algorithms to solve problems.
Recall/review from previous learning	Key terminology e.g. e-mail, attachment etc. What does a phishing e-mail look like? How do we know?	Key terminology and application e.g. what is a variable? How do you create a variable and display the output in programming software?	Key terminology and application e.g. How do you convert a binary number into denary?	Key terminology e.g. How did we get Scratch programs to work?
Assessment • **Formative assessment** • **Summative assessment**	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test.	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test.	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test.	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test.
Cultural Capital, Equality, Diversity Inclusion	Digital divide, careers for girls in IT. Digital divide, fake news and careers for girls in IT.	Careers for girls in Computing. Ada Lovelace reference to debugging	Careers for girls in Computing.	Ada Lovelace reference to debugging. Example algorithms refer to female contexts as well as male.
Literacy/Numeracy	Literacy – writing for audience and purpose. SPAG identification of phishing e-mails Numeracy – spreadsheet calculations. Statistics.	Literacy – Describe/Explain tasks. Numeracy – calculations in statements.	Literacy – Describe/Explain tasks. Numeracy – binary conversions.	Literacy – Describe/Explain tasks. Numeracy – calculations in process and output boxes.

Subject	Food Technology Year 8 Foundation		
Unit/Topic	Using equipment safely	Food safety	Healthy eating
Skills	To select and appropriately use a range of equipment safely and efficiently.	To select and prepare a range of components safely and efficiently.	To be able to differentiate components into food groups and nutritional value.
Knowledge	Identifying and selecting appropriate tools/equipment Knife skills Personal health and safety Movement around the kitchen Organisation Time management Reading a method (sequencing) Oven safety	Keeping food safe Food storage Cross contamination Key food temperatures Weighing and measuring	The Eatwell guide Food diary Evaluation of nutritional intake and making improvements for future.
Recall/review from previous learning	Practical application of knowledge Applying knowledge from demonstrations where practical ability is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations where food safety is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations where nutrition and is the main focus. Consolidating previous knowledge from theory lessons and practical lessons
Assessment	Summative assessment – end of unit graded tests. Written assessment. In class questioning Literacy – extended writing tasks. Self and peer assessment.	Summative assessment – end of unit graded tests - Written assessment In class questioning Literacy – extended writing tasks. Self and peer assessment. Practical assessment	Summative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment.
Cultural Capital, Equality, Diversity Inclusion	Evolution of tools- specialist equipment, kitchen staples	Traceability of foods Origins of ingredients	Impact of diet on individuals/society
Literacy/Numeracy	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down

Subject	Product Design Year 8 Foundation		
Unit/Topic	Electronic Decoration: Flashing Sign	Materials: Clock	Metals: Tea light holder
Skills	Design and make.	Design and make.	Design and make.
Knowledge	1 Introduction to project LED flashing decoration. Task analysis 2 Existing product research and analysis 3 Design development 4 Design development and planning 5 Modelling design idea 6 Measuring and Marking Out Material 7 Production/construction of flashing message item. Shaping and drilling 8 Electronics production (soldering components) and theory 9 Production/construction of flashing message item. Shaping and drilling 10 Electronics production (soldering components) and theory 11 Assembly of final product 12 Electronic theory exercises 13 Testing and evaluation of final product	1 Introduction to Design Movement 2 Design Ideas Inspired by Design Movement. Wood theory 3 Measuring and Marking Out Material 4 Producing frame carcass – cutting and sanding 5 Frame construction – adhesives and fixings 6 Finishing Process – Appropriate wood finishing techniques 7 Preparation and application of finish 8 2D Design 9 CAD Digitally Designing Clock Design 10 CAM Laser Cutting Clock Design	1 Design ideas and development 2 Modelling 3 Making, marking and measuring 4 Cutting and shaping 5 Making, marking and measuring 6 Cutting and shaping 7 Forming and joining 8 Evaluation
Recall/review from previous learning	Electronics knowledge. Marking out. Soldering.	Design knowledge – ACCESS FM.	Metals knowledge. Marking out.
Assessment	Assessment questions. Practical assessment.	Assessment questions. Practical assessment.	Assessment questions. Practical assessment.
Cultural Capital, Equality, Diversity Inclusion	Links to H&S in industry, discussion regarding the consequences of not adhering to any health and safety policy in the workplace.	Links to H&S in industry, discussion regarding the consequences of not adhering to any health and safety policy in the workplace.	Links to H&S in industry, discussion regarding the consequences of not adhering to any health and safety policy in the workplace.
Literacy/Numeracy	Numeracy - marking out.	Numeracy - marking out.	Numeracy - marking out.

Subject	Computing Year 8 Foundation				
Unit/Topic	Microsoft office 365	Inside computers with Microbits	Algorithms - Flowol	Technology – laws and ethics	Programming with Edublocks
Skills	Information technology skill, specifically Microsoft office skills. Digital literacy skills, specifically e-safety skills.	Programming skills. Computational thinking skills.	Computational thinking skills.	Computer Science, information technology knowledge in society. Literacy skills.	Programming skills. Computational thinking skills.
Knowledge	Extending the understanding of how we use Microsoft 365 to further strengthen skills from Y7.	A mixture of theory lessons with some practical activities where students will use blocks to write programs for the Microbit and then download and test the programs.	Theory based unit with practical work on mimics covering computational thinking and flowcharts and how these are applied to real life contexts.	Theory based knowledge to extend the e-safety topic and understanding moral, ethical and legal issues to do with technology.	Practical based unit where students will start moving programming using blocks to text using python.
Recall/review from previous learning	Key terminology e.g. e-mail, attachment etc.	Key terminology and application e.g. what is a variable? How do you create a variable in the Microbit IDE and display the output in programming software?	Key terminology e.g. flowchart, symbols used to represent data flow.	Key terminology e.g. spam, scam, copyright, hacking etc.	Key terminology and application e.g. what is a variable? How do you create a variable in EdiBlocks and display the output in programming software?
Assessment	Skills assessment on OneNote	Skills assessment on OneNote.	MS forms assessment or OneNote assessment	Big write	Skills assessment on OneNote.
Cultural Capital, Equality, Diversity Inclusion	iDEA (Inspiring Digital Enterprise Award) – Bronze challenge – 'Citizenship' badges - students start to work towards earning some badges to understand digital creativity and know how to build and make in the digital world.	Inner workings of hardware to demonstrate the impact of technology use and e-waste impact on society.	Importance of algorithms applied to society and more specifically those involved in everyday use and technology involving AI.	Impact of laws on the use of Computers and data being shared between people.	iDEA (Inspiring Digital Enterprise Award) – Bronze challenge – 'Maker' badges - students continue to work to complete the Bronze award by completing badges.
Literacy/Numeracy	Literacy – writing for audience and purpose. Numeracy – spreadsheet calculations.	Literacy – Describe/Explain tasks. Numeracy – calculations in statements.	Literacy – Describe/Explain tasks. Numeracy – calculations in statements.	Literacy – writing for audience and purpose. Numeracy – N/A	Literacy – Describe/Explain tasks. Numeracy – calculations in statements.

KS3: Y7 Design and Technology Curriculum

Subject	Product Design Year 7			
Unit/Topic	Designing and Making Principles	Using and Working with Materials	Electronic and Mechanical Systems	New Developments in Technology
Skills	Design and marking out.	How to work with different materials.	Soldering and creating circuits.	CAD and CAM.
Knowledge	The Environment Design Brief and Specification Existing Product Analysis Evaluating Products	Health and Safety Polymers Timbers Metals Joining and Adhesives Surface Finishes	Electronic Systems Soldering Circuit Diagrams	Automation Computer Aided Design (2D Design) Computer Aided Manufacture
Recall/review from previous learning	How to design ideas.	Health and safety.	Health and safety.	Implementing design ideas.
Assessment	<u>Baseline Test</u> <u>Knowledge Check 1</u> Live marking feedback within the student books allowing the opportunity for instant improvements. Teacher verbal feedback and class discussion on misconceptions of identified areas. Assessment of student existing understanding of terminology through student explanation of key words.	<u>Knowledge Check 2</u> <u>Practical Assessment</u> Live marking feedback within the student books allowing the opportunity for instant improvements. Teacher verbal feedback and class discussion on misconceptions of identified areas. Assessment of student existing understanding of terminology through student explanation of key words. Self-assessment to consolidate understanding of the casting process.	<u>Practical Assessment</u> Live marking feedback within the student books allowing the opportunity for instant improvements. Teacher verbal feedback and class discussion on misconceptions of identified areas. Assessment of student existing understanding of terminology through student explanation of key words.	<u>End of Specialism Assessment</u> Live marking feedback within the student books allowing the opportunity for instant improvements. Teacher verbal feedback and class discussion on misconceptions of identified areas. Assessment of student existing understanding of terminology through student explanation of key words.
Cultural Capital, Equality, Diversity Inclusion	Links to H&S in industry, discussion regarding the consequences of not adhering to any health and safety policy in the workplace.	Students are made aware of the challenges that are facing industry currently due to a high volume of products being made from polymers.	The importance of accuracy in the wider world or manufacturing	Links to industrial practice.
Literacy/Numeracy	Numeracy - marking out.	Numeracy - marking out.	Numeracy - marking out.	Numeracy - marking out.

Subject	Textiles Year 7	
Unit/Topic	Designing	Making
Skills	Hand sewing, machine sewing, designing, pattern making.	Hand sewing, machine sewing, natural fibres, applique, adding materials. Measuring and marking.
Knowledge	Health and safety, how fabrics are made.	Health and safety, how to use a sewing machine, how natural fibres are formed.
Recall/review from previous learning	Drawing and applying colour.	Hand sewing and embroidery.
Assessment	Machine driving test.	Practical assessment Written assessment (fibres)
Cultural Capital, Equality, Diversity Inclusion	N/A	History of cotton, weaving, knitting.
Literacy/Numeracy	Literacy – book work. Numeracy – measuring and marking.	Literacy – book work. Numeracy – measuring and marking.

Subject	Food Technology Year 7		
Unit/Topic	Using equipment safely	Food safety	Healthy eating
Skills	To select and appropriately use a range of equipment safely and efficiently.	To select and prepare a range of components safely and efficiently.	To be able to differentiate components into food groups and nutritional value.
Knowledge	Identifying and selecting appropriate tools/equipment Knife skills Personal health and safety Movement around the kitchen Organisation Time management Reading a method (sequencing) Oven safety	Keeping food safe Food storage Cross contamination Key food temperatures Weighing and measuring	The Eatwell guide Food diary Evaluation of nutritional intake and making improvements for future.
Recall/review from previous learning	Practical application of knowledge Applying knowledge from demonstrations where practical ability is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations where food safety is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations where nutrition and is the main focus. Consolidating previous knowledge from theory lessons and practical lessons
Assessment	Formative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment.	Formative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment. The big write Practical assessment Written assessment	Formative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment.
Cultural Capital, Equality, Diversity Inclusion	Evolution of tools- specialist equipment, kitchen staples	Traceability of foods Origins of ingredients	Impact of diet on individuals/society
Literacy/Numeracy	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down

KS3: Y8 Design and Technology Curriculum

Subject	Product Design Year 8			
Unit/Topic	Designing and Making Principles	Using and Working with Materials	Electronic and Mechanical Systems	New Developments in Technology
Skills				
Knowledge	Design Brief and Specification Identifying client and user needs Communicating design ideas Isometric projection and rendering Communicating creative design ideas	Health and Safety Mechanical fixings Cutting threads in metals and polymers Polymers Vacuum Forming Timbers Metals Joining and Adhesives Surface Finishes	Types of Movement and Linkages Gears, pulleys and cams	Computer Aided Design (2D Design) Computer Aided Manufacture
Recall/review from previous learning	All H&S and Y7 design skills, ACCESS FM.	H&S procedures.	H&S procedures.	Previous CAD/CAM.
Assessment	<u>Knowledge Check 1</u> <u>Practical Assessment</u> Pupils will be observed on their practical work with verbal feedback provided. Assessment of the pupil booklets regarding how well they understood H/S, accuracy and final outcome needs and requirements with TECC feedback given. Feedback provided on the finished practical children's spinner product regarding accuracy and quality of finish.	<u>Practical Assessment</u> Teacher verbal feedback and class discussion on misconceptions of identified areas.	<u>Knowledge Check 2</u> <u>Practical Assessment</u> Assessment of pupil existing understanding of technology terminology through pupil explanation of key words. Live marking feedback within the pupil workbooks allowing the opportunity for instant improvements. Teacher verbal feedback and class discussion on misconceptions of identified areas.	<u>Practical Assessment</u> Teacher verbal feedback and class discussion on misconceptions of identified areas.
Cultural Capital, Equality, Diversity Inclusion	Reference to Mechanical/Production Engineering job roles.	Links to 'real world' designing and product development.	The importance of accuracy in the wider world or manufacturing.	Links to industrial practice.
Literacy/Numeracy	Literacy is evident throughout the course with use of key words in each lesson and a glossary of tier	Literacy is evident throughout the course with use of key words in each lesson and a glossary of tier	Literacy is evident throughout the course with use of key words in each lesson and a glossary of tier	Literacy is evident throughout the course with use of key words in each lesson and a glossary of

	3 words to advance their vocabulary	3 words to advance their vocabulary	3 words to advance their vocabulary	tier 3 words to advance their vocabulary

Subject	Food Technology Year 8		
Unit/Topic	Hygiene Nutrition Diet analysis Healthy alternatives	Cooking from scratch Nutritional needs of adolescents	Food allergies and intolerances Food labelling
Skills	To select and appropriately use a range of equipment safely and efficiently. To prepare a range of dishes that apply to the Eatwell guide. To understand what constitutes a balanced diet.	To select and prepare a range of components safely and efficiently. To select a range of ingredients to meet the needs of adolescents.	To be able to differentiate components of packaged food.
Knowledge	Identifying and selecting appropriate tools/equipment Identifying a range of components that make up a balanced meal/snack	To adapt a range of popular meals to increase the nutritional value. To know strategies to aid busy individuals to cook healthy meals from scratch.	To know how to interpret a food label To know how to identify key information to aid well-being and consumer choice.
Recall/review from previous learning	Practical application of knowledge Applying knowledge from demonstrations where practical ability is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying food safety and hygiene practices. Consolidating previous knowledge from theory lessons and practical lessons Build on nutritional knowledge (healthy eating guidelines)	Applying knowledge from demonstrations where nutrition/ingredients are the main focus. Consolidating previous knowledge from theory lessons and practical lessons
Assessment	Summative practical assessment	Summative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment. The big write Practical assessment	Summative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment.
Cultural Capital, Equality, Diversity Inclusion	Evolution of tools- specialist equipment, kitchen staples Ingredients choices and know how to adapt to meet the needs of families/individuals/society	Impact of diet on adolescents Long term impacts of diet on health and wellbeing.	Impact of food choices Traceability of foods Origins of ingredients
Literacy/Numeracy	Literacy – extended writing assessments, describe and explain	Literacy – extended writing assessments, describe and explain work. Interpreting	Literacy – extended writing assessments, describe and explain work. Interpreting

	work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	methods/instructions, numeracy – interpreting measurements – scaling up and down	methods/instructions, numeracy – interpreting measurements – scaling up and down

Subject	Textiles Year 8		
Marble Maze Project	Marble Maze Project	Designing	Decorative Techniques
Skills	To select and use a range of equipment safely with accuracy and precision. • Using and threading up a sewing machine. • Safe use of Textiles specific machinery. • How to so with accuracy and precision.	Drawing techniques and presentation. • Sketching • Drawing • Shading • Applying colour - crayon • Texture • Layout	To produce a range of textiles samples using both hand and machine sewing skills. • Applique • Reverse Applique
Knowledge	Practical application of knowledge from demonstrations where practical ability is the main focus. Consolidating previous knowledge from theory and practical lessons • How to thread and use a sewing machine • Cutting • Pinning • Threading a needle • Hand sewing (tacking) • Ironing	How effectively to apply drawing techniques and how to effectively present work. Using skills from Y7 DT and from teacher led demonstrations.	Applying knowledge from demonstrations where machine safety, control and accuracy are the main focus of practical lessons. Theory work will be a combination of new concepts and consolidating knowledge from previous theory and practical lessons.
Recall/review from previous learning	New knowledge of using tools and equipment, safety. Consolidating knowledge from teacher led demonstrations from previous lessons. • Safe and correct handling of tools equipment • Sewing techniques	Consolidate knowledge from previous theory and practical lessons.	New knowledge of decorative techniques. Consolidating knowledge from teacher led demonstrations from current and previous lessons. Consolidating knowledge from earlier project. • Sewing techniques • Safe handling of tools and equipment
Assessment	Summative practical assessment based on the skills and overall outcome of the of the Marble Maze project. Self-assessment based on skills and overall outcome of the project.	Summative Design Assessment The Big write Self and peer assessment.	Formative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment.

Cultural Capital, Equality, Diversity Inclusion	Historical origins of mazes. Purpose of sensory activities/toys.	Researching themes of culture and diversity, which represent the demographic of minority within the school and society, e.g. LGBTQ+, Afro Caribbean culture, Asian culture, Polish culture. Producing designs based themes of culture and diversity. Theory work will include learning and then completing worksheets about Ethical Goods.	Origins and history of decorative techniques.
Literacy/Numeracy	Measuring and marking. Extended writing Literacy question and answer worksheets	Annotating design work. Evaluating Design work. Literacy question and answer worksheets	Literacy question and answer worksheets

KS3: Y9 Design and Technology Curriculum

Subject	Product Design Year 9				
Unit/Topic	Identifying consumer needs	Joining methods	Design proposals	Modelling	Manufacturing a Product
Skills	Analysis	Selecting appropriate tools for materials	Implementing design briefs	Prototyping with material	Creating a finished product
Knowledge	Designing context and task analysis.	How various materials respond to tool application	Appropriate tools and materials.	Appropriate tools and materials.	Appropriate tools and materials.
Recall/review from previous learning	Task analysis	Using and working with materials	CAD/CAM	Prototyping	H&S and using material.
Assessment	Knowledge Check 1	Practical assessment	Knowledge Check 2	Practical assessment	Practical assessment
Cultural Capital, Equality, Diversity Inclusion	Reference to Mechanical/Production Engineering job roles.	Reference to Mechanical/Production Engineering job roles.	Reference to Mechanical/Production Engineering job roles.	Reference to Mechanical/Production Engineering job roles.	Reference to Mechanical/Production Engineering job roles.
Literacy/Numeracy	Literacy is evident throughout the course with use of key words in each lesson and a glossary of tier 3 words to advance their vocabulary	Literacy is evident throughout the course with use of key words in each lesson and a glossary of tier 3 words to advance their vocabulary	Literacy is evident throughout the course with use of key words in each lesson and a glossary of tier 3 words to advance their vocabulary	Literacy is evident throughout the course with use of key words in each lesson and a glossary of tier 3 words to advance their vocabulary	Literacy is evident throughout the course with use of key words in each lesson and a glossary of tier 3 words to advance their vocabulary

Subject	Food technology Year 9

Unit/Topic	Hygiene and safety Nutrition Food provenance Ethical consumer	Technical processes of cake making Culture	Food waste Technical processes of pastry making	Healthy eating guidelines Nutrients (macro and micronutrients)	Nutrients (macro and micronutrients)	Nutritional needs of individuals/groups
Skills	To select and appropriately use a range of equipment safely and efficiently. To prepare a range of dishes that apply to the Eatwell guide.	To select and prepare a range of components safely and efficiently. To select a range of ingredients to meet cultural needs.	To produce a range of pastry dishes using a range of technical processes. To produce a dish that considers food waste.	To produce a range of dishes using a range of technical processes. To produce a range of dishes that considers macro and micronutrients	To produce a range of dishes using a range of technical processes. To produce a range of dishes that considers macro and micronutrients	To produce a range of dishes using a range of technical processes. To produce a range of dishes that considers the needs of groups/individuals
Knowledge	Identifying and selecting appropriate tools/equipment Identifying a range of components that make up a balanced meal/snack To understand what constitutes a balanced diet. To understand ethical issues regarding food choice.	To know the technical processes of cake making. To know how culture and religion impact food choice.	To know how technical processes, produce different characteristics in products. To know the impact of food waste.	To know how to select a range of ingredients based on the nutritional value of components. To know the impact of food choices on health and wellbeing.	To know how to select a range of ingredients based on the nutritional value of components. To know the impact of food choices on health and wellbeing.	To know how to select a range of ingredients based on the nutritional value of components. To know the impact of food choices on health and wellbeing of individuals/groups.
Recall/review from previous learning	Practical application of knowledge Applying knowledge from demonstrations where practical ability is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying food safety and hygiene practices. Consolidating previous knowledge from theory lessons and practical lessons Build on nutritional knowledge	Applying knowledge from demonstrations where nutrition/ingredients are the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations/lessons/discussions where nutritional value is the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations/lessons/discussions where nutritional value is the main focus. Consolidating previous knowledge from	Applying knowledge from demonstrations/lessons/discussions where nutritional value is the main focus. Consolidating previous knowledge from theory lessons and practical lessons

					theory lessons and practical lessons	
Assessment	Summative practical assessment	Formative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment. The big write Practical assessment	Formative assessment – end of unit graded tests. In class questioning Literacy – extended writing tasks. Self and peer assessment.	Ongoing assessment of coursework and practical skills.	Ongoing assessment of coursework and practical skills.	Ongoing assessment of coursework and practical skills.
Cultural Capital, Equality, Diversity Inclusion	Ingredients choices and know how to adapt to meet the needs of families/individuals/so ciety	Impact of diet on adolescents Long term impacts of diet on health and wellbeing.	Impact of food choices Traceability of foods Origins of ingredients	Impact of food choices on health.	Impact of food choices on health.	Impact of food choices on individuals/groups.
Literacy/Numeracy	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructio ns, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down

Subject	Textiles Year 9		
Unit/Topic	Introduction to Textiles	Bum bag	Bucket hat
Skills	Design (digital) Hand sewing Machine Sewing	Designing Fastenings. Joining seems. Printing skills.	Designing Joining seems. Printing skills.
Knowledge	Hazards and equipment, sewing techniques.	Hazards and equipment, sewing techniques.	Hazards and equipment, sewing techniques.
Recall/review from previous learning	Product analysis – ACCESS FM Decorative Techniques Designing decorative panel Fibres	Applique Reverse Applique	Applique Reverse Applique
Assessment	Practical assessment. Self-assessment.	Design assessment. Practical assessment. Self-assessment.	Design assessment. Practical assessment. Self-assessment.
Cultural Capital, Equality, Diversity Inclusion	Reference to real world textiles techniques and manufacturing.	Reference to real world textiles techniques and manufacturing.	Reference to real world textiles techniques and manufacturing.
Literacy/Numeracy	Numeracy - Measuring, marking and costing. Literacy – decorative techniques explored through discussions.	Numeracy - Measuring, marking and costing. Literacy – decorative techniques explored through discussions.	Numeracy - Measuring, marking and costing. Literacy – decorative techniques explored through discussions.

KS4

Subject	Food technology Year 10					
Unit/Topic	Describe functions of nutrients in the human body Compare nutritional needs of specific groups	Explain characteristics of unsatisfactory nutritional intake Explain how cooking methods impact on nutritional value	Explain factors to consider when proposing dishes for menus	Explain how dishes on a menu address environmental issues Explain how menu dishes meet customer needs	Explain how menu dishes meet customer needs Plan production of dishes for a menu	Plan production of dishes for a menu
Skills	To select and appropriately use a range of equipment safely and efficiently. To prepare a range of dishes that reflect on nutritional value and needs of individuals/groups.	To select and prepare a range of components safely and efficiently. To select a range of ingredients that reflect on the nutritional impact.	To consider a range of factors that influence menu choices.	To consider how hospitality and catering establishments can make positive environmental impacts.	To produce a range of dishes that meet customer needs.	Menu sequencing.
Knowledge	Identifying and selecting appropriate tools/equipment Identifying a range of components that make up a balanced meal. To understand what constitutes a balanced diet.	To know how diet can impact health and wellbeing. To know how cooking methods can impact nutritional value.	To know how technical processes, produce different characteristics in products. To know the impact of food waste.	To know how to select a range of ingredients based on the nutritional value of components. To know the impact of food choices on health and wellbeing.	To know how to select a range of ingredients based on the nutritional value of components. To know the impact of food choices on health and wellbeing.	To know how to sequence a method which considers health, safety and timings.

Recall/review from previous learning	Practical application of knowledge Consolidating previous knowledge from theory lessons and practical lessons	Consolidating previous knowledge from theory lessons and practical lessons Build on nutritional knowledge	Applying knowledge from demonstrations where nutrition/ingredients are the main focus. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations/lessons/discussions. Consolidating previous knowledge from theory lessons and practical lessons	Applying knowledge from demonstrations/lessons/discussion. Consolidating previous knowledge from theory lessons and practical lessons	Consolidating previous knowledge from theory lessons and practical lessons
Assessment	Ongoing assessment of coursework and practical skills.	Ongoing assessment of coursework and practical skills.	Ongoing assessment of coursework and practical skills.	Ongoing assessment of coursework and practical skills.	Ongoing assessment of coursework and practical skills.	Ongoing assessment of coursework and practical skills.
Cultural Capital, Equality, Diversity Inclusion	Ingredients choices and know how to adapt recipes to meet the needs of families/individuals/society	Impact of diet on different groups of society. Long term impacts of diet on health and wellbeing.	Impact of cost, time and skills.	Impact on how the hospitality and catering effects the environment.	Impact of food choices on needs of individuals/groups.	Impact of food choices on needs of individuals/groups.
Literacy/Numeracy	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements – scaling up and down

Subject	Food technology Year 11

Unit/Topic	Understand the environment in which hospitality and catering providers operate	Understand how hospitality and catering provision operates	Understand how hospitality and catering provision meets health and safety requirements	Know how food causes ill health	WHOLE UNIT REVISION
Skills	To apply knowledge learnt to exam-based questions and develop exam techniques.	To apply knowledge learnt to exam-based questions and develop exam techniques.	To apply knowledge learnt to exam-based questions and develop exam techniques.	To apply knowledge learnt to exam-based questions and develop exam techniques.	To apply knowledge learnt to exam-based questions and develop exam techniques.
Knowledge	Types of service Different sectors Accommodation types Kitchen brigade Job roles Employment rights Success factors	Kitchen workflow Kitchen equipment Stock control Safety of equipment Documentation Dress code Operations of the front of house Front of house equipment Materials used in front and back of house	Health and safety Food hygiene Food safety Legislations Bacteria growth HACCP Risk assessments	Bacteria Moulds and food poisoning Allergies Intolerances EHO Meeting different customer needs	The Hospitality and Catering industry
Recall/review from previous learning	Consolidating previous knowledge of success factors.	Applying developed knowledge and skills to the workflow of the kitchen/equipment/health and safety.	Applying developed knowledge and skills to food safety/hygiene and personal safety/hygiene.	Applying developed knowledge and skills to food safety/hygiene and personal safety/hygiene/food allergies and intolerances.	Applying developed knowledge and skills of the hospitality and catering industry.
Assessment	Ongoing assessment using exam-based questions.	Ongoing assessment using exam-based questions.	Ongoing assessment using exam-based questions.	Ongoing assessment using exam-based questions.	Ongoing assessment using exam-based questions.
Cultural Capital, Equality, Diversity Inclusion	Job contracts that meet the needs of different demographics. Skills/qualities required in the workplace Career options	Responsibilities of employees/employers.	Responsibilities of employees/employers.	Responsibilities of employees/employers.	Responsibilities of employees/employers.

Literacy/Numeracy	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements	Literacy – extended writing assessments, describe and explain work. Interpreting methods/instructions, numeracy – interpreting measurements

Subject	Design and Technology Year 10					
Unit/Topic	Energy generation and storage Forces and stresses Mechanical devices	Metals and processes The work of others Design communication and prototype development	The six R's Working with polymer-based materials Polymers – Recap and processes Timber based materials – Recap and processes	Electronic systems: selection on materials and components Tolerances and allowances Commercial manufacturing and quality control	Prototype development Production techniques and systems	SECTION A: NEA Investigation, primary and secondary data Design strategies The work of others
Skills	Develop the skills convert forms of motion	Develop the skill to interpret design elements into work	Apply knowledge to determine which plastic and process has been used for specific products	Create simple circuit using SMT technology	Develop more complex design communication skills, sketching and sketch modelling 2-point perspective	Apply prior learning to investigate a context (AQA)
Knowledge	To know how to convert forms of motion To understand ethical issues regarding material and process choice.	To know about a range of metals, their origins and properties and understand how they are processed for use To understand ethical issues	Develop comprehensive knowledge of timber and plastic manufacturing processes	To know the purpose of individual electronic components To know how electronic components and circuits work	To know the purpose of prototype development To know how and why production systems are used	To know how conduct independent primary and secondary research

		regarding material and process choice. To know how about a range of designs and influences		To be able to calculate tolerances	for disparate products	
Recall/review from previous learning	Application of safe practice. Identify and select appropriate tools, equipment, timber for specific application	Application of safe practice. Identify and select appropriate tools, equipment, metal for specific application	Applying knowledge from demonstrations to develop safe, effective, and efficient practice Consolidating previous knowledge from theory lessons and practical lessons	Key terminology: Identify electronic components and functions Consolidating previous knowledge from theory lessons and practical lessons	Key terminology: Identify purpose of prototype development Consolidating previous knowledge from theory lessons and practical lessons	Key terminology: Identify influential designs and work of others Consolidating previous knowledge from theory lessons and practical lessons
Assessment	Formative practical and theoretical assessment Summative end of topic assessment	Formative practical and theoretical assessment Summative end of topic assessment Self and peer assessment.	Formative practical and theoretical assessment Summative end of topic assessment Self and peer assessment.	Formative practical and theoretical assessment Summative end of topic assessment	Ongoing assessment of practical skills	Ongoing assessment of practical skills Formative practical and theoretical assessment
Cultural Capital, Equality, Diversity Inclusion	Technological advances and the impact on employment Origins of materials	Impact of material and process choices Origins of materials and socio-economic impact	Impact of material and process choices on the environment Origins of materials and socio-economic impact	Impact on changing employment opportunities	Impact of material and process choices Origins of materials and socio-economic impact	Impact of material and process choices Origins of materials and socio-economic impact

Literacy/Numeracy	Literacy – extended writing assessments, describe and explain work. Interpreting methods and instructions, Numeracy – calculating moments and gear ratio	Literacy – extended writing assessments, describe and explain work. Numeracy – measuring accurately, develop relevant math skills, area and volume calculations	Literacy – extended writing assessments, describe and explain work. Numeracy – measuring accurately, develop relevant math skills, area and volume calculations	Literacy – extended writing assessments, describe and explain work. Numeracy – calculate tolerances for effective manufacture	Literacy – extended writing assessments, describe and explain work. Numeracy – measuring and net production	Literacy – extended writing assessments, describe and explain work. Numeracy – working with ratios

Subject	**Design and Technology Year 11**				
Unit/Topic	**SECTION B: Producing a design brief and specification** **Scales of production** **Working with paper-based materials** **Production techniques and systems** **The six R's** **People, culture and society**	**Y11 Mocks** **SECTION C & D** **Communication of design ideas and prototype development** **SECTION E: Plan for manufacture** **Improving functionality** **Informing design decisions** **Selection of materials and components**	**SECTION E: Manufacture** **Systems approach to designing** **Electronic systems processing** **Working with textile-based materials and fixings** **Maths in DT focus** **The work of others**	**NEA: Mark section E** **F: Analyse and evaluate** **Revision - Exam question practice**	**Revision - Exam question practice**
Skills	Writing skills Analytical skills	Design communication skills: sketching and modelling. Problem solving skills	Analytical skills Problem solving skills Planning and manufacturing skills	Analytical and evaluative skills	Problem solving skills
Knowledge	**Declarative** e.g. components of a design specification	**Declarative** e.g. the range of plastic manufacturing processes	**Declarative** e.g. the difference between smart and modern materials	**Declarative** e.g. what the function of a design specification is	**Declarative** e.g. What is the difference

	Procedural e.g. how to apply the 6R's	**Procedural** e.g. how each process functions in detail	**Procedural** e.g. how IP is applied to protect specific designs and products	**Procedural** e.g. analysing and evaluating the final prototype against a specification	between physical and mechanical properties **Procedural** e.g. analysing products in terms of mechanical and physical properties
Recall/review from previous learning	Key terminology and application e.g. mass production, batch production	Key terminology and application e.g. knock-down fittings	Key terminology and application e.g. Identification of electronic components	Key terminology and application e.g. listing the elements of ACCESSFM	Key terminology and application demonstrated against past exam questions.
Assessment	Assessment – paper-based materials scales of production & CAD/CAM	Practice exam questions Ongoing assessment of design and practical skills	Assessment – Maths: volumes, areas, Interpreting graphs, ratios	NEA: Mark final submission	Formative exam papers, review exemplar responses
Cultural Capital, Equality, Diversity Inclusion	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all
Literacy/Numeracy	Literacy – extended writing assessments, describe and explain work. Interpreting methods and instructions, Numeracy – measuring accurately, develop	Literacy – extended writing assessments, describe and explain work. Numeracy – measuring accurately, develop relevant math skills, area and volume calculations	Literacy – extended writing assessments, describe and explain work. Numeracy – measuring accurately, develop relevant math skills, area and volume calculations	Literacy – extended writing assessments, describe and explain work. Numeracy – working with 2d and 3d coordinates	Literacy – extended writing assessments, describe and explain work. Numeracy – measuring and net production

	relevant math skills, area and volume calculations				

KS5

Subject	Product Design Year 12				
Unit/Topic	1 Materials and their applications 2 Classification of materials 3 Methods for investigating and testing materials 7 Industrial tests 4 performance characteristics of papers and boards 2 design influences, styles and movements 7 Performance characteristics of metals Metal processes	6 Performance characteristics of wood Iterative design process 13 Enhancement of materials 15 Polymer processes User centred design UCD 28 Design communication 8 performance characteristics of polymers 13 Polymer enhancement 9 Biodegradable polymers	NEA - Section A Polymer assessment 09 Modern materials 11 Smart materials 10 Composite materials NEA - Section B Maths - exam question practice	Assessment: Composite, Smart, and Modern materials 23 Health and safety H&S case study Ergonomics and anthropometrics NEA - Section A – MARK NEA - Section B - MARK NEA - Section C Maths - exam question practice	A level Mocks Production aids: Jigs, fixtures and fixings (practical) 5 Major developments in technology 20 modern industrial and commercial practice 13 Design for manufacture and project management NEA - Section C - Planning for manufacture
Skills	Design and manufacturing skills Answering exam question skills	Design and manufacturing skills Answering exam question skills	Design, production, and project management skills Answering exam question skills	Design, production, and project management skills Answering exam question skills	Design, production, and project management skills Answering exam question skills Revision skills
Knowledge	**Declarative** e.g. fundamental principles and concepts of design movements	**Declarative** e.g. the range of plastic manufacturing processes **Procedural** e.g. how each process functions in detail	**Declarative** e.g. the difference between smart and modern materials	**Declarative** e.g. what the function of a design specification is	**Declarative** e.g. What is the difference between physical and mechanical properties

	Procedural e.g. how to apply design principles to develop products		**Procedural** e.g. how IP is applied to protect specific designs and products	**Procedural** e.g. analysing and evaluating the final prototype against a specification	**Procedural** e.g. analysing products in terms of mechanical and physical properties
Recall/review from previous learning	Key terminology and application e.g. listing methods of metal forming processes	Key terminology and application e.g. characteristics of papers and boards	Key terminology and application e.g. four elements of IP	Key terminology and application e.g. How to enhance materials	Key terminology and application demonstrated against past exam questions.
Assessment	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support
Cultural Capital, Equality, Diversity Inclusion	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all

Literacy/Numeracy	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development

Subject	Product Design Year 13				
Unit/Topic	Section C - Development of Design Proposals) - Sketching and modelling NEA: SECTION C - Mark 23 Health and safety 5 Major developments in technology 7 product lifecycles Assessment Product lifecycle and developments in technology Maths 13 Design for manufacture and project management 21 digital design and manufacture	75 virtual modelling 20 modern industrial and commercial practice 21 electronic data interchange 21 Production, planning and control PPC networking Assessment – modern industrial manufacture 19 The uses of finishes 24 protecting designs and intellectual property A level NEA (Section C - Development of Design Proposals) Section C - Planning for manufacture NEA: SECTION Section D – Manufacture NEA: SECTION D – Mark	Y13 Mocks Review mock exams Section D – Manufacture NEA: SECTION D – Final Mark Exam question practice Case studies Section E – Testing, Analysing and Evaluating	Section E – Testing, Analysing and Evaluating NEA: SECTION E –Mark Exam question practice Case studies NEA submission	Exam period
Skills	Design, production, and project management skills Answering exam question skills	Design, production, and project management skills Answering exam question skills	Design, production, and project management skills Answering exam question skills	Design, production, and project management skills Answering exam question skills	Design, production, and project management skills Answering exam question skills

Knowledge • Declarative: 'Knowing that' – facts/concepts. • Procedural: 'Knowing how' – methods/processes	**Declarative** e.g. fundamental principles and concepts of designing and manufacture **Procedural** e.g. how to apply design principles to develop products	**Declarative** e.g. the elements of intellectual property **Procedural** e.g. how IP is applied to protect specific designs and products	**Declarative** e.g. the elements of intellectual property **Procedural** e.g. how IP is applied to protect specific designs and products	**Declarative** e.g. what the function of a design specification **Procedural** e.g. analysing and evaluating the final prototype against a specification	**Declarative** e.g. What is the difference between physical and mechanical properties **Procedural** e.g. analysing products in terms of mechanical and physical properties
Recall/review from previous learning	Key terminology and application e.g. major developments in plastics technology	Key terminology and application e.g. The stages of the product lifecycle	Key terminology and application e.g. four elements of IP	Key terminology and application e.g. How to write a risk assessment	Key terminology and application demonstrated against past exam questions.
Assessment	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support	Formative assessment: teacher questioning, peer assessment and self-assessment. Online low stakes questions used to support knowledge building. Summative assessment – end of unit test. NEA - on-going formative support	Formative assessment: teacher questioning, peer assessment and self-assessment. Exam question practice
Cultural Capital, Equality, Diversity Inclusion	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all	Socio-economic factors that influence and are influenced by design Impact of material and process choices on the environment Inclusive design – how it benefits all

Literacy/Numeracy	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development	Literacy – Reading and writing. Short and extended written responses Numeracy – Exam questions: Trigonometry, areas, volumes, ratios, graphs. Manufacturing calculations during prototype development