



FRAMEWORK FOR LEARNING



CREATIVE

An education where imagination, curiosity and resilience enable us to ignite our learning.

HAPPY

A shared belief that optimism, empathy and responsibility are the foundations for a respectful, safe and inclusive community.

SUCCESSFUL

Individuals who are ready to learn, practise being reflective, and are motivated to become champions.

SUBJECT

TECHNOLOGY – RESISTANT MATERIALS

TECHNOLOGY – TEXTILES

INTENT

"Design is everywhere. From the dress you're wearing to the smartphone you're holding. It's design" - Samadara Ginige

Design and technology aims to ensure that all students:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- Students will build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users, critique, evaluate and test their ideas and products and the work of others.

Design and technology aims to ensure that all students:

- Develop core skills and a strong technical understanding which aids their personal development and provides them opportunity to achieve whilst gaining life-long learning experiences.
- Students will acquire knowledge that gives them a strong understanding of the world around them and our heritage as a design and manufacturing nation. Students will not only obtain knowledge, but also develop understanding whilst practicing home skills that make them able to contribute and add value to our community at a local, national and global level.



YEAR GROUP

YEAR 11

RATIONAL / NARRATIVE

Studying GCSE Design and Technology allows Students to explore both their creative and practical skills as well as theoretical knowledge on all aspects of designing and making. In year 11 Students will demonstrate and develop their skills and knowledge learnt during year 10 to complete their NEA (Non Examined Assessment), choosing from a range of contexts and self-directing their project outcome. They will complete each of the 5 sections of the specification to the highest of their ability in terms of both presentation and creativity. They will ensure their designs are clearly linked to the wants and needs of a client and produce a final prototype of their product, along with a portfolio of development work. Theory continues to take them through the series of 7 UNITS in preparation for their GCSE written exam covering new and emerging technologies, making principles and further specialist material principles. There will be an emphasis on retrieval practice, revision techniques and exam strategies.

TERM KNOWLEDGE

AUTUMN 1

AUTUMN 2

SPRING 1

SPRING 2

SUMMER 1

SUMMER 2

NEA project

4.4.4.2 Section B:
Producing a design brief and specification

4.4.4.3 Section C:
Generating design ideas

THEORY UNIT 7 – Making Principles

3.3 Designing and making principles

4.4.4.2 Section B:
Producing a design brief and specification
4.4.4.3 Section C:
Generating design ideas

NEA project

4.4.4.4 Section D:
Developing design ideas

4.4.4.5 Section E:
Realising design ideas

THEORY UNIT 1 – New and Emerging Technologies

3.1 Core Technical Principles

4.4.4.4 Section D:
Developing design ideas
4.4.4.5 Section E:
Realising design ideas

NEA project

4.4.4.5 Section E:
Realising design ideas

4.4.4.6 Section F:
Analysing and evaluating

THEORY UNIT 5 – Specialist material properties

3.2 Specialist Technical Principles

4.4.4.5 Section E:
Realising design ideas
4.4.4.6 Section F:
Analysing and evaluating

NEA project – final submission

4.4.4.6 Section F:
Analysing and evaluating

Revision and exam preparation

4.4.4.6 Section F:
Analysing and evaluating

Revision and exam preparation

SKILLS

ACQUIRE, DEVELOP & APPLY

Decision making
Problem solving skills
Technical drawing skills
Iterative design process and creative thinking

ACQUIRE, DEVELOP & APPLY

Development skills
CAD CAM knowledge
Prototyping/ testing techniques

ACQUIRE, DEVELOP & APPLY

CAD/CAM skills
Problem solving
Practical and quality control skills

APPLY, EXPLAIN EVALUATE

Analytical and evaluation knowledge
Third party opinions

UNDERSTAND, INTERPERET & UTILISE

Key terms and information from all units
Exam techniques
drawing techniques



ASSESSMENT

<p>UNDERSTAND, IDENTIFY, APPLY & EXPLAIN Material choices Equipment selection Quality assurance Range of finishes for materials</p>	<p>Practical and quality control skills UNDERSTAND, IDENTIFY & EXPLAIN Sociological sustainability issues Industrial manufacture techniques Use of CAD/CAM Consumer issues/ choice</p>	<p>Analytical/evaluation knowledge UNDERSTAND, IDENTIFY & DESCRIBE Sources and origins of specialist material areas Material manufacture methods</p>	<p>UNDERSTAND, INTERPERET & EXPLAIN Key exam terminology Links to maths/ science knowledge</p>	
<p>Key Assessment Piece: Classwork piece – NEA Section C: Producing Design Ideas (20 Marks) initial submission.</p> <p>Key Assessment Piece: classwork piece – NEA Section D: Developing Design Ideas (20 Marks) initial submission.</p>	<p>Key Assessment Piece: Year 11 Mock Exam Students will complete a full paper as part of their mock examinations. Home Study topics will be shared with their class teacher.</p> <p>Key Assessment Piece: Classwork piece – NEA Section D: Developing Design Ideas (20 Marks) developmental submission for feedback.</p> <p>Key Assessment Piece: Classwork piece – NEA Section E: Realizing Design Ideas (20 Marks) initial submission.</p>	<p>Key Assessment Piece: NEA Submission – Section F (Reflecting and Evaluating) Reviews of their NEA projects will form part of this assessment to ensure teacher feedback can be provided prior to final submission.</p> <p>Section B/C exam question: Industry, Enterprise and New Technologies</p> <p>Key Assessment Piece: Classwork piece – Section B/C exam question: Energy generation and storage</p>	<p>Key Assessment Piece: Year 11 Mock Exam Students will complete a full paper as part of their mock examinations. Home Study topics will be shared with their class teacher.</p> <p>Key Assessment Piece: Students will be submitting final NEA tasks during this half term, students will be assessed and graded based upon the criteria for the NEA tasks as outline in the specification.</p> <p>Classwork piece – Section B/C exam question: Ecological and social footprint, Sources and origins of materials</p> <p>Classwork piece – Section B/C exam question: Specialist techniques and processes</p>	<p>Marking Point: Externally moderated GCSE exam</p>
<p>Task 1: Revision topic, Materials and their Properties.</p>	<p>Task 1: Revision topic, Social and Environmental Factors</p>	<p>Task 2: Mixture of multiple-choice questions from Section A of the exam.</p>	<p>Home learning tasks will focus students on preparation for final examination.</p>	<p>Home learning tasks will focus students on preparation for final examination.</p>

HOME LEARNING



READING, WRITING, TALK, NUMERACY

<p>Supported by assessment questions to practice assessment.</p> <p>Task 2: Revision topic, Manufacturing Methods (various materials). Supported by assessment questions to practice assessment.</p> <p>Task 3: Human Factors, Ergonomics and Anthropometrics, Client and User data. Supported by assessment questions to practice assessment.</p>	<p>Supported by assessment questions to practice assessment.</p> <p>Task 2: Revision topic, Models and Prototypes Supported by assessment questions to practice assessment.</p> <p>Task 3: Revision Topic, Use of ICT and CAD/CAM. Supported by assessment questions to practice assessment.</p>	<p>Task 3: Mixture of multiple-choice questions from Section A of the exam.</p> <p>Exam questions will also be supported with teacher feedback to support student's growth and preparation for assessment.</p>	<p>Students will be encouraged to identify gaps in their knowledge and understanding based on the Design and Technology PLC. Students will be encouraged to use:</p> <ul style="list-style-type: none"> • www.technologystudent.com • GCSE Pod • SENECA • BBC Bite size • The pocket size revision guide GCSE Design Technology (available in school) • PG Online GCSE Design and Technology textbook. <p>All Learning materials are on Microsoft Teams for Home Study activities.</p>	<p>Students will be encouraged to identify gaps in their knowledge and understanding based on the Design and Technology PLC. Students will be encouraged to use:</p> <ul style="list-style-type: none"> • www.technologystudent.com • GCSE Pod • SENECA • BBC Bite size • The pocket size revision guide GCSE Design Technology PG Online GCSE Design and Technology textbook. <p>All Learning materials are on Microsoft Teams for Home Study activities.</p>
<p>Throughout the course of the NEA task there are several opportunities for students to develop their Reading, writing and talk skills.</p> <p>Reading: Students are completing an extended project activity which will require them to read through source materials and investigate topics. This information will need to be broken down, inferred and opinions formed based on the text.</p>	<p>Throughout the course of the NEA task there are several opportunities for students to develop their Reading, writing and talk skills.</p> <p>Reading: Students are will need to read through their NEA research they have completed and ensure it meets the brief set by AQA.</p> <p>Write: Students will be writing up their research they have carried out and summarizing each type of</p>	<p>Reading: students will be expected to revise using online research, revision guides and their own exercise books. Pupils will be expected to read through their NEA and ensure each page has been analysed.</p> <p>Write: Students will continue to analyse their research and final product. Evaluating their success and areas to improve on.</p>	<p>Reading: Within revision lessons students will develop skills relating to reading text and interpreting technical drawings. Students will be encouraged to read work in depth and highlight key pieces of information which is considered essential to their understanding. Students may be required to use skills in <u>inference</u>, <u>paraphrasing</u>, and <u>analysis</u>.</p>	<p>Reading: Within revision lessons students will develop skills relating to reading text and interpreting technical drawings. Students will be encouraged to read work in depth and highlight key pieces of information which is considered essential to their understanding. Students may be required to use skills in <u>inference</u>, <u>paraphrasing</u>, and <u>analysis</u></p>



TIER 2 VOCABULARY

TIER 3 VOCABULARY

<p>Write: Written evidence for the NEA tasks will contribute to their final portfolios. A variety of writing styles will be included when completing the NEA tasks including analysing and writing to include statistics and data.</p> <p>Oracy: Students will focus on developing their clarity and summarising skills (Cognitive). They will also continue to develop their listening and responding skills by gaining their clients feedback.</p> <p>Numeracy: Students will analyse research and work out percentages to help generate graphs as part of their NEA.</p>	<p>research, explaining and summarising what they have found out. They will begin to annotate their initial design ideas. Thinking about what manufacturing techniques they will use, materials, components etc.</p> <p>Oracy: Students will continue to develop their researching, looking at the work of others and listening and responding skills (Social and Emotional). They will also focus in developing their reasoning skills (Cognitive)</p> <p>Numeracy: Use CAD CAM and the use of the dimension lines to accurately mark out.</p>	<p>Oracy: Students will focus on develop their use of appropriate vocabulary choice (Linguistic). They will also develop working with others (Social and Emotional)</p> <p>Numeracy: Students will need to calculate the impact their product will have on the environment.</p>	<p>Write: Students will develop skills in various writing styles in order to be able to answer examination questions.</p> <p>Oracy: Students will focus on develop their use of appropriate vocabulary choice (Linguistic). They will also develop working with others (Social and Emotional)</p> <p>Numeracy: Calculating waste, profits and costs of their final product.</p>	<p>Write: Students will develop skills in various writing styles in order to be able to answer examination questions.</p> <p>Oracy: Students will focus on develop their clarity and summarising skills (Cognitive). They will also continue to develop their listening and responding.</p> <p>Numeracy: Students will summarise their findings and display them and charts and graphs in their evaluation.</p>
<ul style="list-style-type: none"> • Design • Specify • Function • Environment • Identify 	<ul style="list-style-type: none"> • Compare • Research • Review • Require • Respond • Policy • Specific 	<ul style="list-style-type: none"> • Relate • Section • Method • Distribute • Economy • Describe • Environment • Evident • Explain 		
<ul style="list-style-type: none"> • Design Brief • Design Specification • Primary and secondary research • Customer profile • Design development • Annotation 	<ul style="list-style-type: none"> • Manufacturing techniques • Ecological • Product miles • Carbon emissions • Mining • Social factor 	<ul style="list-style-type: none"> • Sources and Origins • Stock forms • Shaping • Surface treatment • Printing • Modifications • Evaluation 		



PSPSMC, BRITISH VALUES AND DIVERSITY

- Quality control
- CAD CAM
- Prototype
- Ergonomics
- Finishes

- Deforestation
- footprint
- Social issues
- 6R's
- Laser cutter
- CAD CAM
- 2D design
- Prototype
- Sustainability

- Testing

Personal: During the first term of year 11 students will be establishing routines for work and expectations in the classrooms and workshops environment. Technology subjects will make effective use of employability skills throughout the methods of learning and application of learning. Students will build their confidence and resiliency both within theory and practical lessons.

Social: Links will be made through looking at the social impact of designs and working with materials and products.

Physical: Student's physical wellbeing will be utilised by engagement with practical activities. They will explore the implications of working with specific materials.

Moral: Students will be taught the moral implications of working with tools and equipment and materials, and the choices consumers and manufacturers make.

Cultural: Students will have access to cultural awareness in relation to the design, promotion and manufacturing of products.

British Values: Students will be able to explore the use of British standards and political correctness when designing and making products and the impact these designs and making controls have on society.

Diversity: Students learn about anthropometric data and will use it in their Non-Exam Assessment to inform their designs, they need to consider whether their sources accurately reflect the market for which they are designing ensuring that their product is inclusive and non-bias.