

Design Technology

Curriculum Intent

At KS3 students follow schemes of learning in both Technology and Food with one lesson a week and swapping half way through the year. The Technology projects and activities are designed carefully with progression in mind so students build upon the knowledge and skills learned in each unit but also have opportunities to recap and develop learning from previous years. KS3 gives a broad and enriching introduction to the subject with many opportunities for creative thought and challenging the way we choose and use products in our everyday lives.

As students progress through the Technology schemes of learning we then aim to recognise the importance of design and technology in their daily lives and the decisions they make about the products they choose and environment they live in. They gain an understanding of traditional making skills using a wide range of hand and machine tools but also are introduced to CAD systems using our laser cutter and to modern flexible manufacturing approaches. In year 9 they take part in an industrial car manufacturing simulation project where they can see how this works for themselves.

At KS4 we offer the GCSE in Design Technology with AQA which covers a broad and exciting range of designing skills and working with different materials and processes. The course is assessed with a final exam and an NEA design and make task. This builds on the diverse skills and experiences that students have gained at KS3 through a carefully planned progression of 'key facts' theory units and practical projects. They gain the competence needed to achieve very successfully in their GCSE and develop technological life skills that will help them in the future either as careers or as they take on the responsibilities of adulthood.

Carnforth is located in a semi-rural area with many diverse opportunities for our students to develop careers in the building trade, specialist engineering or agriculture sectors. We believe our GCSE course give students a positive insight into future local and national vocational opportunities and the skill, ambition and qualifications to gain positions in further education or employment.

Implementation

Year 7	Students are introduced to the workshop with a short skills manufacturing project to make a pencil holder. They then go on to learn about designing for people and complete a further practical task to make a swivel lid box with a laser cut lid design. Further projects include a team mini gravity racer challenge and an investigative debate into the feasibility of a bamboo bicycle project in Ghana. Students work in booklets and get to take all projects home.
Year 8	Students develop their design and drawing skills including studying the work of others and creative design and colouring techniques. In a bird feeder project, they develop practical skills and an understanding of how products are batch produced using jigs and templates. They also learn about metals and their properties and how to cut and shape them in the workshop. Further design work extends their 3D drawing skills. Students work in booklets and get to take all projects home.
Year 9	Students refresh their design and making skills with a short quality manufacturing project linked to Memphis design. They then learn new making processes including the engineering lathe and strip heater as part of a teamwork industrial simulation project making model cars. Through this we examine modern manufacturing approaches and other influences on successful businesses. Students also develop an understanding of their own skills and consider career opportunities within the manufacturing sector. A final architecture and urban planning project develops drawing and modelling skills whilst also considering how we are making our buildings of the future greener.

Year 10	<p>Students begin their GCSE Design Technology course. They become familiar and skilful with a wide range of materials and processes in the workshop including wood, metal and plastics and where relevant more non-traditional materials. Each project is supported by a booklet to reinforce learning in a quick and accessible format.</p> <p>Students complete a series of projects of increasing complexity and skill requirement starting with a simple wooden turtle toy then progressing to modelling an adapted handle, a laser cut tealight holder, an LED lamp, a forged steel bracket, a cast alloy key ring and further projects.</p> <p>They build their subject knowledge through a series of key fact units which are largely completed in booklet form and build into an invaluable exam revision resource. Through Year 10 projects have an increasing emphasis on creative design and development and students learn about the work of established designers such as Dieter Rams and James Dyson.</p> <p>The GCSE context is issued by AQA at the end of year 10 and students begin developing ideas for their Yr 11 NEA project through the summer.</p>
Year 11	<p>Year 11 targets the NEA design and make project worth 50% of the marks. Students choose from one of three AQA contexts, then through research, drawing and modelling create a design for a functional product or prototype. These are constructed, tested and evaluated and their work is recorded in a detailed Power Point design folder for submission by February half term. Throughout the year there is a process of recap, revision and exam technique working towards mock exams in November and March and the final exam in June.</p>

Impact

Assessment

The NEA context is released by AQA in June of Year 10. Students complete a design portfolio of research, drawing and planning work together with a practical prototype outcome. NEA projects are completed for Feb half term in Year 11. The work is assessed in school and submitted to AQA for moderation.

Students prepare for the final exam through class revision activities and homework. Practice questions and other activities are set throughout KS4 including end of year assessments in Year 10 and two mock exams in Year 11. Written feedback is provided to learners with strengths and areas to improve identified in order to allow them to make further progress.

KS4

GCSE Design Technology (AQA 8552)	Weighting	Assessment	When
Non-exam assessment (NEA) (100mks)	50%	Design and make project (30-35 hours)	Year 11 (Feb half term deadline)
Final exam Core technical principles (20mks) Specialist technical principle (30 mks) Designing & making (50mks)	50%	External exam (2 hours)	Year 11 (June)

Department

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