Aylsham High School – Design Technology Curriculum Map 2023 – 2024

Curriculum Intent

Intent

Our vision for Design Technology is of an inspiring, rigorous subject based around the teaching and learning of technical knowledge and practical competencies in support of the design and realisation of different products in a range of materials. Design Technology gives students the skills and abilities to engage positively with the designed and made world. Students learn how products and systems are designed and manufactured, how to be innovative and to make creative use of a variety of resources including traditional and digital technologies, to improve the world around them. Wherever possible, students address 'real life' design problems derived from contextual challenges. The curriculum also prepares the students for the world they live.

Implementation

At KS3, we operate a rotation system whereby groups complete projects that fall under the umbrella of timber and metal with different specialist teachers. In this way students experience the full range of Design Technology material areas. We aim to meet all the demands of the National Curriculum for Design Technology. Our curriculum is accessible to all through provision of a range of opportunities and challenges for students of diverse abilities, talents and backgrounds. Students learn to work independently and in groups. All are encouraged to be well motivated and confident learners and problem solvers. Projects are based around design and make activities, covering a range of contexts and materials. Each project also aims to build technical knowledge and develop students' ability to analyse and evaluate their own work. We aim to, wherever possible, make links to designs and designers throughout history, providing opportunities for students to critically reflect upon and evaluate their designs. At the centre of the subject is creativity and imagination. Design & Technology is a subject which draws, develops and implements a range of different disciplines including mathematics, science, engineering, computing, geography, business studies and art. The subject embeds high quality literacy skills through analysis and evaluation techniques.

As students' progress to KS4 they choose an area within Design & Technology to study. In the chosen area, the subject allows for deeper study of the world they live in, potential career opportunities and with the skills developed at KS3 the confidence to take risks, become resourceful, innovative, enterprising and capable citizens. The subjects encourage students to design and make products that solve real and relevant problems, within a variety of contexts, while considering their own and other's needs, wants and values.

Impact

We assess projects and monitor progress over time. We aim to ensure that by the end of each key stage, students have:

- Developed the creative, technical and practical expertise needed to perform everyday tasks confidently.
- The ability to apply a range of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users and analysis, evaluate and test their ideas and products and the work of others.
- Developed a critical understanding of the impact of Design Technology on daily life and the wider world.
- The ability to progress into a range of Design Technology specialist areas.

Year 7 (KS3)	Project Theme	Knowledge/Skills that are taught	Knowledge/Skills revisited	What does good look like?	Resources/Support at home
Metal	**Light Box**	**Design** Use research to support outcomes. Develop and communicate design ideas using detailed sketches. **Make** Select from and use specialist tools, techniques, processes, equipment and machinery precisely, following Health and Safety guidelines, including computer-aided manufacture. **Evaluate** Evaluate and refine their ideas and products against a specification, taking into account the views of others. **Technical Knowledge** Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.	Students arrive from Primary School with different experiences of DT. Few have significant experience using workshop tools and equipment. Designing, Making, Evaluating and Developing Technical Knowledge. Health and Safety.	Students become familiar with workshop rules, the concept of risk assessment and health and safety. Students build a repertoire of skills, using tools and equipment.	Google Classroom - Project Booklet and Homework tasks.
Timber	**Passive Amplifier**	**Design** Use research to support outcomes. Develop and communicate design ideas using detailed sketches. Develop specifications to inform the design process. **Make** Select from and use specialist tools, techniques, processes, equipment and machinery precisely, following Health and Safety guidelines, including computer-aided manufacture. **Evaluate**	Students arrive from Primary School with different experiences of DT. Few have significant experience using workshop tools and equipment. Designing, Making, Evaluating and Developing Technical Knowledge. Health and Safety.	Students become familiar with workshop rules, the concept of risk assessment and health and safety. Students build a repertoire of skills, using tools and equipment.	Google Classroom - Project Booklet and Homework tasks.

		Evaluate and refine their ideas and products against a specification, taking into account the views of others. **Technical Knowledge** Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.			

Year 8 (KS3)	Project Theme	Knowledge/Skills that are taught	Knowledge/Skills revisited	What does good look like?	Resources/Support at home
Metal	**Metal Bug**	**Design** Use research to support outcomes. Develop and communicate design ideas using detailed sketches. Develop specifications to inform the design process. **Make** Select from and use specialist tools, techniques, processes, equipment and machinery precisely, following Health and Safety guidelines, including computer-aided manufacture. **Evaluate** Evaluate and refine their ideas and products against a specification, taking into account the views of others. **Technical Knowledge** Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.	Designing, Making, Evaluating and Developing Technical Knowledge. Health and Safety.	**Knowledge and Understanding** Students have learnt the key words for this project. Students are able to write a specification for their metal bug project. Students will be able to use arrange of 2D and 3D techniques in their design development. Students will learn about the 3 different types of metals. Students know how to use a range of tools, equipment and processes to make a metal bug. **Skills** Students know how to use specialist tools,	Google Classroom - Project Booklet and Homework tasks.

				techniques, process and equipment precisely. Students understand how to evaluate work using given criteria.	
Timber	**Display Box**	**Design** Use research to support outcomes. Develop and communicate design ideas using detailed sketches. Develop specifications to inform the design process. **Make** Select from and use specialist tools, techniques, processes, equipment and machinery precisely, following Health and Safety guidelines, including computer-aided manufacture, 3D printing and laser cutting and use of associated software. **Evaluate** Evaluate and refine their ideas and products against a specification, taking into account the views of others. **Technical Knowledge** Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.	Designing, Making, Evaluating and Developing Technical Knowledge. Health and Safety.	**Knowledge and Understanding** Students have learnt the key words for this project. Students will be able to use arrange of 2D and 3D techniques in their design development. Students know how to use a range of tools, equipment and processes to make their product. **Skills** Students know how to use specialist tools, techniques, process and equipment precisely. Students understand how to evaluate work using given criteria.	Google Classroom - Project Booklet and Homework tasks.

GCSE (KS4)	Component	Knowledge/Skills that are taught
Metal/Timber	**Component 1 – Written examination: 50% of the qualification (20% Core including 10 marks of calculation questions and 30% Material Categories including 5 marks of calculation questions).**	To apply a breadth of technical knowledge and understanding of the characteristics, advantages and disadvantages in relation to new and emerging technologies. To recognise the importance of the evaluative process and respective criteria when considering the impact of new and emerging technologies to a range of scenarios. To recognise and apply knowledge and understanding of the working characteristics, applications, advantages and disadvantages. To apply knowledge and understanding of working properties, characteristics, applications, advantages and disadvantages of metal and timber, in order to be able to discriminate between them and select appropriately. Performance characteristics of a wide range of materials, components and manufacturing processes, in order to be able to discriminate between them and select appropriately. Implications for designers and manufacturers when developing designs and manufacturing products. Strategies, techniques and approaches employed when investigating and analysing the work of others and when generating design ideas.
Metal/Timber	**Component 2 – Non-examined assessment: 50% of the qualification (8% Investigate, 21% Design, 18% Make and 3% Evaluation).**	**Investigate** – this includes investigation of needs and research and a product specification (16 marks). **Design** – this includes producing different design ideas, review of initial ideas, developing of design ideas into a chosen design, communication of design ideas and review of the chosen design (42 marks). **Make** – this includes manufacture, quality and accuracy (36 mars). **Evaluate** – this includes testing and evaluation (6 marks). To apply knowledge and understanding of the advantages, disadvantages and applications of materials, in order to be able to discriminate between them and select appropriately. The influence of factors when selecting materials for a specific application. An awareness of the influence of forces and stresses that act on materials and the methods that can be employed to resist them. To apply knowledge and understanding of the advantages, disadvantages and applications of the forms/sizes of materials, of processes, scales of production and techniques when manufacturing products, of specialist techniques when manufacturing products and of finishing techniques and methods of preservation, in order to be able to discriminate between them and select appropriately for use.