KS4 Long Term Plan
Subject: Design and Technology
Exam Board: Edexcel

Curriculum Statement of Intent

The Design and Technology Department aims to allow students to exercise their creativity through designing, making and evaluating. Skills are taught and underpinned with theoretical knowledge of the subject to allow students to problem solve and take on design challenges. Skills are based on national curriculum guidance which are revisited and developed as students move through KS4 and KS5 exam specification. This approach is integral to both Product Design and Food Technology.

Problem solving, research, analysis, design, making, resilience, planning and innovation are all vital parts of the design, make and evaluate process and key skills students can bring with them to all aspects of their lives. Giving students the opportunity to apply knowledge and skills learnt across the curriculum helps to instil a love of the subject and bring their learning to life and provide aspirational future pathways.

Curriculum Statement of Implementation

KS3 Projects are designed to introduce students to the workshops and kitchen. Students are able to develop key skills and knowledge which will become the foundation for further study of the subject and prepare students for studying Design Technology and Food to GCSE and A-Level, as well as fostering enjoyment and developing skills, which they will use throughout life. Students are taught in a three part rotation with 2 50 minute lessons per week with the opportunity to attend enrichment clubs.

KS4 projects build on the skills and knowledge established at KS3 these projects are taught alongside 1 theory lesson a week. The initial focus KS4 projects is to prepare students for the NEA.

KS5 students are set their NEA which brings in all of the key elements of Design and Technology; Problem solving, Research, Analysis, design, make, resilience, planning and innovation. Once again this project based work is underpinned with theory lessons which take place two lessons a week for the entirety of the course.

To allow students to access all elements of Design and technology we have specific equipment over five classrooms including; two workshops, two computer rooms and a food room. Students are able to experience a range of workshop equipment alongside CAD software, laser cutting and 3D printing. The food rooms are equipped with all of the items needed for developing the skills within the subject. These skills encourage independent problem solving at KS4 and KS5.

All teaching of DT should follow the design, make and evaluate cycle. Each stage should be supported with technical knowledge. The design process should be rooted in real life, relevant contexts to give meaning to learning. While making, children should be given the knowledge to choose the right equipment to complete a task.

Term	**Topics Covered** (Date completed by and number of lessons)	**Skills/AOs/interleaved content**	**Assessment** (date and nature of assessment)
Yr 10	Project: Stool Project **AO4** Demonstrate and apply knowledge and understanding of: ● technical principles ● designing and making principles Theory Drawing; Isometric, orthographic, oblique, 1 point, 2 point	**Timber work skills** **Timber joints**	**Record of progress style pages** **Technical Drawing** **Evaluation NEA style page** **End of half term Theory Test**
Yr 10	Project: Children's play area **AO2** Design and make prototypes that are fit for purpose Theory New and emerging technology The internet of things Production methods Energy and electricity	**Brief analysis** **Development** **Designing** **Design for manufacture** **LCA**	**Brief analysis NEA style page** **Development NEA style page** **Idea Review** **End of half term Theory Test**
Yr 10	Project: Pewter Casting **AO4** Demonstrate and apply knowledge and understanding of: ● technical principles ● designing and making principles Theory Polymers Gears Linkages and levers Designers and companies	**Metal work skills** **Timber joints** **Casting** **Production methods** **Sustainability**	**Sketching NEA Style page** **Initial Ideas NEA Style Page** **Metal Practical** **Test in Year 10 written exam week**
Yr 10	Project: Small Animal Habitat **AO1** Identify, investigate and outline design possibilities to address needs and wants **AO2** Design and make prototypes that are fit for purpose	**Brief Analysis** **Research** **Designing/sketching** **Timber work skills** **Timber joints**	**Brief analysis NEA style page** **Designs NEA style page** **Development models** **End of half term Theory Test**

Yr 10 Yr 10	<u>Project: Garden Tool Project with joint box</u> **AO2** Design and make prototypes that are fit for purpose **AO4** Demonstrate and apply knowledge and understanding of: ● technical principles ● designing and making principles Joint Box for garden tool. **AO2** Design and make prototypes that are fit for purpose <u>Theory</u> Timbers; Types sustainability, fittings	**Metal work skills** **Wood lathe skills** **Metal lathe skills** **Designs** **Practical** **Mechanical/physical properties**	**Record of progress style pages** **Technical Drawing** **Evaluation NEA style page** **Brief analysis NEA style page** **Designs NEA style page** **Development models** **Technical Drawing** **End of half term Theory test**
Yr 10	<u>Project:</u> Contextual challenge AO1 Identify, investigate and outline design possibilities to address needs and wants <u>Theory</u> Mechanical and physical properties Design for manufacture LCA Isometric Drawing Papers and boards Polymers	**Brief Analysis** **Research** **Designing/sketching**	**Designs NEA style page** **Practical** **End of half term Theory Test**
Yr 11 Autumn 1	NEA	**NEA**	**Test in Year 11 Exam week**
Yr 11 Autumn 2	NEA	**NEA**	**NEA**
Yr 11 Spring 1	Revision	**Revision key areas picked up in exam week**	**PPE test?**
Yr 11 Spring 2	Revision	**Revision**	**In class revision test**
Yr 11 Summer 1	Revision	**Revision**	**In class revision test**