

OCL Design Technology Curriculum: Statement of Intent

Purpose of study

Design technology is a subject which incorporates elements of Maths, Science, Art and Engineering into a practical context. It is a subject which gives our students the opportunity to apply their knowledge and understanding into a practical context learning how to design, plan, make and evaluate a range of products. Students will cultivate creativity and imagination whilst developing the skills and knowledge needed to solve real and relevant design problems. Students will do this whilst exploring a range of topics and contexts to develop a broad knowledge of the range of disciplines and potential subtopics of design technology. Our Design Technology curriculum enables our students to work independently and collaboratively, develop resilience, solve problems, manage resources and materials and encourages them to become logical thinkers, researchers, creators and makers.

We value **Character**, **competence** and **community** in our curriculum:

Character: Engaging all students in learning about design culture that develops personal creativity, resilience, the willingness to take appropriate risks and the confidence to express ideas: developing a sense of self expression. Confidently developing and refine ideas through evaluation and self-critique whilst being open to the collaborative ideas of others. Thoughtfully investigating ideas through thorough research and development to successfully solve problems with functional practical solutions that consider the intended audience.

Competence: Developing student's ability to use accurately and expressively a variety of designing planning, making and evaluative skills, techniques and concepts with confidence. Understanding materials and their properties enabling well-informed, positive choices that help to create creative solutions to problems. Students will refine their understanding and knowledge of form and function and how the two interact when designing and creating products.

Community: Inspiring students to develop a lifelong appreciation and understanding of a wide range of design styles, traditions, and contexts. Improving the quality of their own lives and the lives of others by applying creative problem solving into their everyday life. Contributing to their futures though actively working sustainably and considerately of and for others and their environment: promoting the ambition to have a positive impact on the world around them .



Curriculum Intent

Through our carefully sequenced and ambitious curriculum, we intend that our curriculum will achieve these aims/outcomes:

1. To equip all students with the knowledge, skills and understanding so that they will know how to design, make and evaluate a product by:

- Knowing how to create an accurate technical drawing using both traditional and digital methods.
- Understanding how the context and use of a product will help inform material choices.
- Knowing the properties of different materials
- Creating technical drawings to scale including measurements and part lists.
- Using technical drawings to create and make accurate real life products.
- Be able to cut and join a variety of materials using different tools.
- Create their own unique designs; devising, solutions to problems whilst considering both form and function.
- Understand the process of creating their own products
- Use research to develop and refine ideas and design solutions.
- Review and refine work independently

2. To solve problems with practical solutions by applying their knowledge and understanding of designing, making and evaluating:

- Understanding a design brief and the context it has been set in.
- Adapt designs and ideas to suite the context they are required for.
- Be able to articulate their reasons for choices and decisions they have made in relation to the design brief.
- Rigorously question, observe, identify, dissect, analyse, evaluate and use ideas from designs across the full range of historical periods, genres, cultures and traditions.
- Broaden and deepen essential world knowledge and use this to create purpose in their work.
- Use a wide range of materials, processes and techniques to create functional products.
- Give consideration to the impact of their material choices and manufacturing processes.
- Think in abstract ways to develop unique and individual solutions informed by research
- Work with professionals from a range of disciplines
- Have opportunities to study design and designers

3. To enable all students to develop their character, confidence and identity through practising design evidenced by being able to:

- Resilience to rehearse, improve, create, embrace success and the unplanned, give and take feedback and become reflective in their practice
- Empathy, sensitivity, understanding and openness to others and their needs
- Take appropriate risks and demonstrate good decision making skills with materials, resources, ideas and ways of working
- Problem solve with enthusiasm – think creatively around a situation or piece of work
- Demonstrate confidence, collaboration and leadership skills
- Engage in extra-curricular events and enrichment activities that allow them to develop their own interests and means to express themselves
- Take advantage of opportunities such as competitions or community events to demonstrate the ability to design and create
- Understand the role of design in shaping individuals, culture and community for good
- Develop their own values and sense of identity through their work



OCL Design Technology Curriculum: Long Term Plan

Year 7: Materials: energy storage and transfer – Learning the design process.

In Year 7, students arrive with a variety of design experience, skills, knowledge and understanding.

Year 7 is about giving all students a shared understanding of how a product can be designed, made, and evaluated. These 3 strands of learning will be repeated throughout the students learning journey and will help them to develop a wide range of tools and techniques to solve problems and create solutions. Students will begin this journey by designing, making and evaluating catapults. The purpose of this project is to help students to develop the foundation knowledge of what designing, making and evaluating involves, with a focus on how materials can store and transfer energy.

Students will complete this part of the learning journey as part of a half year rotation. This means that one half of the year group will study food preparation and nutrition for 3 half terms whilst the other half of the year group study Design Technology. After the 3 half terms each half of the year group will swap to study the other subject for the remaining 3 half terms.

	Autumn 1/Spring 2	Autumn 2/Summer 1	Spring 1/ Summer 2
Key Learning	<ul style="list-style-type: none"> - What is a catapult - What is tension and torsion - Historic designs of catapults and who first made them - What is designing - Types of technical drawing - What is isometric drawing - What is a set square and how do you use it - How to create an isometric drawing using a set square - What is orthographic drawing - How to create a to scale orthographic drawing 	<ul style="list-style-type: none"> - Materials and their properties - Selecting materials based on their qualities and the purpose those materials will serve - Measuring materials - Cutting materials - Joining materials 	<ul style="list-style-type: none"> - Testing product - Evaluating test performance - Calculating improvements to design - Refining the product - Re testing product
Design	<ul style="list-style-type: none"> - Using research to create a rough design - Isometric drawing - Orthographic drawing - Using measurements in technical drawing - Creating a parts list 	<ul style="list-style-type: none"> - Using a design as a plan for making - Measuring and cutting materials in accordance with a design plan 	<ul style="list-style-type: none"> - Changing designs based on test data
Make	N/A	<ul style="list-style-type: none"> - Material properties - Accurate measurements - Cutting techniques and tools - Joining techniques and tools - Stabilising a structure 	<ul style="list-style-type: none"> - Improving an existing product

Analyse and Evaluate	<ul style="list-style-type: none"> - Improving initial sketch design - Will the product function 	<ul style="list-style-type: none"> - What material works best for structures - What material works best for energy transfer - What cutting technique is best - What joining technique is best 	<ul style="list-style-type: none"> - Analysing the impacts of improvements
Assessing Progress	<p>Low stakes questioning to check for understanding.</p> <p>Formative assessment and feedback during each lesson to support progress.</p> <p>Summative assessment of work at end of project.</p>	<p>Low stakes questioning to check for understanding.</p> <p>Formative assessment and feedback during each lesson to support progress.</p> <p>Summative assessment of work at end of project.</p>	<p>Low stakes questioning to check for understanding.</p> <p>Formative assessment and feedback during each lesson to support progress.</p> <p>Summative assessment of work at end of project.</p>
Oasis Habits	<p>The 9 habits are embedded into the curriculum through teacher modelling and the expectations of students during the lesson. All students are expected to uphold the 9 habits and will be supported to do so through feedback, instruction, peer reviews and sharing ideas and opinions.</p>	<p>The 9 habits are embedded into the curriculum through teacher modelling and the expectations of students during the lesson. All students are expected to uphold the 9 habits and will be supported to do so through feedback, instruction, peer reviews and sharing ideas and opinions.</p>	<p>The 9 habits are embedded into the curriculum through teacher modelling and the expectations of students during the lesson. All students are expected to uphold the 9 habits and will be supported to do so through feedback, instruction, peer reviews and sharing ideas and opinions.</p>