

"I am a designer".





Design and Technology

At King's Oak Academy, it is our intention that when children study Design and Technology they will have a practical, creative and joy-filled experience of design technology. Designing, innovating, making and evaluating products for purpose and solve real and relevant problems will enable the children to develop a critical understanding of its impact on their own daily lives and the wider world.

Lower school curriculum

We aim to teach the children a broad range of knowledge and skills and to apply learning from other subjects such as maths, science, computing and art. Children at KOA learn to, and are encouraged to become risk-takers and innovators.

"I am a Designer" CLF 1-6 curriculum link [CLF Primary Curriculum Designers July 2023.pdf](#)

Reception	Year 1	Year 2	Year 3	Year 4
<p>All Year Design is taught from the EYFS framework across the year.</p> <p>High quality opportunities for Expressive Arts and Design and fine motor skills using tools within the Physical Development strand.</p>	<p>Term 1 - Structures Exploring domestic and industrial structures and what makes a rigid and strong structure. Designing a new house for The Three Little Pigs.</p> <p>Term 6 - Textiles Wrapping, knotting, and weaving. Discovering and exploring new textiles and materials. Designing and creating a dream catcher.</p>	<p>Term 3 - Structures and Mechanisms Exploring the different classes of levers, hinges and pivots, linking with History and Isambard Kingdom Brunel.</p> <p>Term 6 - Textiles Matching and sorting fabrics with different properties and investigating dip and tie dye to create a whole class blanket.</p>	<p>Term 2 – Mechanisms Exploring different mechanisms for example levers, pulleys, axles and gears. Designing and making a moving card with pivots and levers.</p> <p>Term 6 – Textiles Discovering how materials overlap and different joining techniques by learning basic sewing stitches to create a pencil case or coin purse.</p>	<p>Term 2 - Structures Building and innovating stable structures, including:</p> <ul style="list-style-type: none">  Cantilevers  Arches  Rafts  Braces <p>Linking with History learning to design and build a Viking building.</p> <p>Term 4 - Electrical Systems Linking with Science, exploring and designing electrical circuits to make a torch.</p>

Middle school curriculum

Our curriculum will enable students to build on the foundations of knowledge and skills. The breadth of subjects studied within DT provides opportunities for students to question and justify decisions within both to their daily lives as well as applying it to global and/or industrial situations. Students will show an awareness of how their choices influence the world they live in. This enables students to develop from learners to creators, problem solvers, project managers and designers through discovery of sense of self and place. The DT curriculum contributes to student's sense of achievement, teamwork, organisation skills, development of independence and self-agency. Students will be able to apply their evaluative and inquisitive skills to the wider world.

Course overview

Year 5	Year 6	Year 7	Year 8
<p>Term 1 – Textiles Sewing a designed picture.</p> <p>Term 2 - Textiles Learning how to Tie Dye.</p> <p>Term 3 – Mechanisms Cams and gears.</p> <p>Term 4 – Mechanisms Screws and propellers.</p> <p>Term 5 – Textiles Link to an artist. Introducing applique.</p> <p>Term 6 – Textiles Continue to practise applying decoration to fabric.</p>	<p>Term 2 - Mechanisms Cams and gears.</p> <p>Term 4 - Electrical systems</p>	<p>Introduction to the workshop Students design and make a simple bird feeder.</p> <p>They learn the key aspects of the design process, analysing a design brief, product analysis and design development. They learn some basic theory of wood and wood types and structure.</p> <p>Using new skills students learn about woodworking skills in the workshops, including health and safety and using basic hand tools. Students also look at making quality products using assembling and finishing techniques.</p>	<p>Design for a client - Acoustic phone speaker. Students will learn 3D techniques and practise isometric drawing.</p> <p>Theory covered will be how to design for a specific client, aspects of a specification, testing and importance of quality control. The students will then design their own acoustic phone speaker. This will be in a geometric theme for a company.</p> <p>They will research existing products and incorporate these into their designs and be taught how to develop concepts into finished ideas. All students will evaluate their ideas to recognise further development and modifications.</p>

Upper school curriculum

The Year 9 curriculum enables students to build on the foundations of knowledge and skills which will make them successful at GCSE. The WJEC Eduqas GCSE in Design and Technology offers a unique opportunity in the curriculum for learners to identify and solve real problems through the application of scientific, mathematical, and material knowledge in order to design and make quality products or systems. Learners will be prepared to develop a consideration towards users' needs wants and values in an ever-evolving technological world, encouraging risk taking and ability to test and refine practical solutions toward the development of innovative outcomes. The development of practical skills to solve problems in a variety of contexts aims to instill an awareness of wider influences on society, including social, moral, and environmental issues in order to inspire a more sustainable future.

Course overview

Year 9	Year 10	Year 11
<p>Design movements - Memphis inspiration.</p> <p>Students will design and make a designer clock. This includes researching the design movement 'Memphis', before analysing products and writing their own specification. Students will follow the complete design process and learn CAD/CAM to assist manufacture.</p> <p>Students will learn about different materials – timbers, plastics, metals, and their uses. The core of the project will be based around client need with a focus on research and their creative annotated design ideas.</p> <p>Time will be given in the workshop to manufacture their ideas with an emphasis on workshop health and safety and finishing skills.</p>	<p style="text-align: center;">Design Technology (EDUQAS) Link to exam specification</p> <p>Design Technology Students study: Industry and enterprise, energy generation/systems, materials & properties, emerging technologies, and environmental and social contexts.</p> <p>Students will also learn theory through completing a series of mini practical projects, following the research, design, develop and manufacture cycle.</p> <p>A mini project will be built around a selected theme and the students will learn how to create ideas around client needs.</p> <p>An emphasis will be on initial research, client profiles, specifications, model making and building 2D and 3D design computer skills.</p>	<p>Design Technology Students work towards the completion of their individual NEA issued at the end of Year 10.</p> <p>This is a design and make task that student's study from July in Y10 until April in Y11. It includes creating a portfolio of work that includes:</p> <ul style="list-style-type: none"> 🔧 Research 🔧 Analysis 🔧 Specifications 🔧 Design brief 🔧 Client profile 🔧 Design ideas and development 🔧 Model making and manufacturing and finishing techniques.