



KING EDWARD VI
SCHOOL LICHFIELD

Design & Technology Department

In our department, we currently have three full time and one part time specialist Design & Technology teachers working alongside two part time technicians. We are flexible in our approach and staff teach across different disciplines being very well supported by our technicians, one of whom is a food technician, the other being a D&T technician.

There are two Food rooms, one Textiles room, two D&T workshops dedicated to the full range of D&T related materials. We are a well-resourced department with CAD/CAM machinery, Laser Cutter and Heat Treatment facilities as well as the more traditional materials processing tools and equipment.

Our Key Stage 3 Curriculum is constantly under review and all Key Stage 3 students work in Product Design, Textiles and Food. There is an extensive programme of practical work, which combined with coverage of technical knowledge and understanding, ensures that we efficiently and effectively cover the National Curriculum Programme of Study for D&T. This includes working with Food, Textiles, Timbers, Polymers and Metals as well as Graphic Materials. All Y9 students also complete a discrete STEM based project within their D&T timetable. We also have a room, which is equipped with computers, and all Key Stage 3 students carry out CAD work as part of their D&T studies.

The Key Stage 3 Curriculum provides the foundation for the Key Stage 4 AQA GCSE Design & Technology and Eduqas Food Preparation and Nutrition specifications. We also offer AQA Advanced Level Design & Technology. Students on both examination courses are very much encouraged to be ambitious with their design work and cover the whole range of materials areas in such a way as to allow them to express their creativity and innovative acumen.

Design & Technology at King Edward VI School

The notes below present our departmental attitudes and the approaches we take in realising the ambitions, and expectations, we have for our students as they grow and develop as young people emerging into an ever increasingly technological world.

Profile of a King Edwards Designer

What are the Design & Technology skills, knowledge, understanding, characteristics, and values we identify that we want our Design students to develop, maintain and learn to exploit.

[*designer*

noun: **designer**; plural noun: **designers**

a person who plans the look or workings of something prior to it being made, by preparing drawings or plans.

“a leading car designer”]

In no order of priority a King Edwards designer is:

Open-minded – try new things; be comfortable with, and receptive to advice from unexpected sources. Don't be afraid of being open and honest with your designs.

Resilient – be prepared to deal with criticism. Accept direction towards making improvements, which lead to a viable design solution.

Problem solving – think realistically, logically and critically. Take pride in producing efficient function, as well as, beautifully aesthetic design.

Questioning – of one's self, constantly reviewing your decision making processes and the solutions you generate. Challenge yourself, could you do better?

Communicative – Unless ideas are communicated effectively, they do not take shape and form, they do not become real. You need to express the ideas in your head in such a manner as to get them into someone else's head. How you do this is not that important. That it actually does happen is the important thing.

Curious – Explore the world around you, learn to love creativity and diversity in all its myriad forms. Historical, social, cultural, technological facets of design must be part of your make up. Look beyond the obvious. Shun shallow thinking.

Passionate – the creative industries are very rewarding but also extremely time and energy sapping. With sustained drive and enthusiasm, you will be successful and the sacrifices all successful designers have to make will be more than worth it.

Patient – rarely does a successful resolution arrive quickly, designs can take many iterations before the optimum design is found. Compromise only when it suits your design intentions.

Reliable – work to a deadline, plan and manage your time cleverly. Under promise, over deliver.

Modest – nobody knows it all. You must keep learning and seeking new sources of technological creativity upon which you will draw inspiration as a designer.

The above list of personal characteristics is not definitive, it is intended to be interpreted as individual circumstances dictate. However, they should be crystallised in our attitudes towards how we deliver Design & Technology provision for our young designers at King Edwards. This underpinning of what is taught (D&T Curriculum) is contextualised in the National Curriculum Design & Technology Programmes of Study: Key Stage 3.

Design & Technology Programmes of Study: Key Stage 3

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook

Key stage 3

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture] and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion].

When designing and making, pupils should be taught to:

Design

- use research and exploration, such as the study of different cultures, to identify and understand user needs
- identify and solve their own design problems and understand how to reformulate problems given to them
- develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations
- use a variety of approaches [for example, biomimicry and user-centred design] to generate creative ideas and avoid stereotypical responses
- develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations

Make

- select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture
- select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties

Evaluate

- analyse the work of past and present professionals and others to develop and broaden their understanding
- investigate new and emerging technologies
- test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups
- understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists

Technical knowledge

- understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
- understand how more advanced mechanical systems used in their products enable changes in movement and force
- understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs]
- apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors] and control outputs [for example, actuators] using programmable components [for example, microcontrollers]