

SHS D&T Department Intent

Teaching Staff:

SHS D&T is taught by Mr J.Martindale (Head of Department with a degree in Architecture and almost thirty years experience) and part time by Mrs M.Wilkins (an experienced teacher of Art with over twenty years experience as well as having some experience as a non specialist D&T teacher). We are supported by Mr D. Doherty as part time technician.

We have outstanding accommodation in two purpose built rooms that allow both the pupils and teachers to flow between to use equipment and share ideas.

Intent:

SHS D&T Curriculum

We believe that

- one day our students will be in charge.
- our teaching of Design and Technology should reflect a fast changing flexible subject.
- D&T has a role to play in equipping all students with a unique skills set which benefit them personally and are crucial to our future economy.
- our subject is fascinating, adventurous and fun as well as being academically rigorous.
- the future is positively exciting when approached in a responsible and sustainable manner.
- just as businesses use Continuous Improvement that we can always develop further.

We aim to

- provide a positive, purposeful and safe atmosphere.
- cherish our built and natural environments and to inspire students to make a positive contribution in the improvement of them.
- promote the recognition and value of quality in the form and in function of products.
- encourage resilience in analytically overcoming challenging problems of increasing complexity.
- cultivate creativity, innovation and enterprise, recognising opportunities.
- enable students to develop practical skills by making quality products using a variety of mediums.
- foster controlled risk taking and develop their decision making, such that they can enjoy learning from mistakes.
- promote the subject as a precursor to a vast diversity of career opportunity from aeronautical engineering to virtual reality.

We intend to achieve these qualities through an effective combination of teaching methods which will include design and making activities, but also stand-alone design or making activities, and considering the ethics of technology development

Implementation:

please see additional document: Curriculum Map

Y7 & Y8

In Years 7 and 8 pupils learn Textiles, Food and Nutrition and “Design and Technology” rotating at Christmas and Easter. Pupils opt for two of the technologies to pursue in Y9 for more detailed preparation towards underpinning the GCSE. Y7 and Y8 therefore constitutes our opportunity to cover the National Curriculum within three 50 minute sessions over a fortnight. With that in mind there is a substantial amount to be covered in the two terms of D&T, (that which is not covered by either Food or Textiles).

In Y7 the rationale is that firstly pupils have a huge diversity of experience. We cover the sorts of practical activity that they might encounter at home, and the safety aspects that go with them; namely hand tools and

processes, sanding and drilling machines, we aim to highlight to pupils the modern world technology: electronics and plastic moulding processes.

In Y8 students use a wider range of materials and processes and have more autonomy in their designing and making. Students are introduced to CAD-CAM. This is to give pupils a taste of what they could hope to continue to study at GCSE but also to widen their understanding further of the engineered world around them.

Y9

Pupils in Y9 are concept designing and prototyping; reflecting an industrial approach, in which they will gain and show understanding of mass production techniques and constraints. Pupils develop their own briefs for a hand held communication interface (mobile of the future) exploring and experimenting with the functions and form of their idea. Design communication, modelling, 3D CAD and CAM including 3Dprinting will be implicit. Students study topics including ergonomics, user centred design, polymers and their sustainability.

A-Level and GCSE

We run D&T A-Level as we feel that it is the most appropriate course for our students in our setting. A-Levels constitute the majority of post 16 courses in the school, and it is vital that the subject is seen to be as rigorous. The AQA A-Level was chosen to allow students to study a diverse curriculum and allow them specialise towards their particular interests. Students begin with a group design and make project where all students can learn expectations. Students have the opportunity to use VR CAD in their designing.

We deliver GCSE through Edexcel. This particular exam board's specification requires pupils to study a core section and then specialise in a particular material area. We chose to run with the polymers section for a variety of reasons. It has the academic demand for our pupils in that the vast majority of processes that are appropriate are similar to metals; casting and forming etc, but require a lot less in terms of physical resources, expense and even brute strength to work with. Pupils have been attracted to the colours, optical effects, smart properties etc of the medium. Studying polymers therefore is a superb foundation for the other materials studied later in A-Level.

Impact:

Students who stay with us or join us for sixth form enjoy the availability and closeness of teachers and the department in general. In recent years students have gone on to study Architecture, landscape architecture, General Engineering, structural engineering, Product Design and Graphic Design at universities and apprenticeships. Students maintain friendly contact with the department and recognise the value of their education.

"D&T has without doubt been the subject that has stayed with me, proving to be highly applicable, relevant and useful in a surprising range of day-to-day endeavours." **Ex pupil Josie O: Oxford graduate in Human Sciences**

"D&T has put me one step ahead of most of the other students on my course" **Ex Pupil Lucy P: University student of Astronautics and Space Technology section**