Design and Technology at Samuel Whitbread Academy

Intent

In Design and Technology, we encourage students to combine practical and technological skills with creative thinking to design and make real and useful products and systems that meet human needs. Ingenuity as at the core of what we do - within design we want students to take risks and learn from their mistakes. We aim to teach students to solve problems in different ways by experimenting and trying something new. Asking questions and thinking outside of the box. We want student to have empathy for their users needs when designing ensuring they have a deeper understanding of other people's views and putting themselves in someone else's shoes. It is well known that Elon Musk, James Dyson and Zaha Hadid had many hundreds over prototypes before their designs were successful – they failed a lot! We aim to teach students the value of determination so that they have the resilience to continue making an effort despite difficulties and be flexible and adapt when things aren't working. To try something new - even if it seems a challenge.

We aim to:

● Foster an interest and enjoyment in the understanding and use of Design & Technology.

● Stimulate each student's curiosity about the world around her/him and about everyday objects, how they are made and function.

● Encourage students to confront and discuss design and technological issues – both new and existing – as well as to consider ethical, moral and

environmental aspects.

● Equip students to be confident citizens in an increasingly technological world and look to the future with creativity and innovation.

● Develop confidence in practical and problem-solving activities with real life contexts.

● Develop an enterprising attitude and to take risks where appropriate.

● See opportunities and make things happen.

● Provide a sound basis for further technological study and entry to Design & Technology based professions.

Implementation

We aim for lessons to be both enjoyable and educational with practical work being the keystone in what we do. If students need to learn about wood joints, students will of have a theory lesson based around this but what better way to enhance this learning then make them? Students will learn to use current technologies and consider the impact of future technological developments. They are taught how to think creatively, and use their design thinking to improve quality of life. Our students learn how to solve problems as individuals and as members of a team by working in stimulating contexts that provide a range of opportunities and draw on the local ethos, community and wider world. They are given the skills to respond with ideas, products and systems, challenging expectations where appropriate by combining both practical and intellectual skills with an understanding of a variety of other external and emotional factors.

Key Stage 3: Year 9

Students will be given a brief insight into the design process, creating two products to experience and enhance their practical skills. They would be introduced to our fully equipped workshops learning how to use a wide variety of both machine and hand tools in order to build the two functional products over the course of the year.

They will learn the importance of design briefs and specifications to guide them during the designing and making process while building on their knowledge of materials, health and safety and drawing skills. Students will be provided booklet to contain all of their written work to ensure they can manage and structure their school work while. They will also receive a test half way during the year so to give them an insight and understanding of the subject content they would need to know at this point of their education.

Key Stage 4: Year 10 & 11

This course is based around the AQA Design & Technology specification which covers a range of materials areas. There is a good balance between theory and practical lessons, which deliver a relevant curriculum that is up to date, stimulating and interesting. We aim to produce good quality well made products which students show pride in. We encourage students to express themselves creatively and work autonomously, actively seeking solutions to design problems using their own ingenuity.

During year 10, the students will undertake a range of projects to build up their knowledge and understanding of the subject so to meet the exam boards specifications. From learning to follow the design process when designing products, how products are manufactured in industry, to how products have evolved through the years thanks to improvements and discovers in new materials and technologies. Of course, any future designer will need to learn the impact that products have on our planet and therefore will also learn how products can affect our environment. Students will also build on their practical skills and would be again have the opportunity to design and make a fully functional product using a variety of materials and hand tools and machinery.

The year 11 course starts towards the end of Year 10 when students are given 3 design areas to base their coursework on. Students will then spend the rest of Year 10 and the majority of Year 11 focused on their design and make coursework which represents 50% of their final grade. Student will go through the design process from initial research to concept design through to the manufacture of a finished project. The remainder of Year 11 is focused on preparation for the end of year exam.

Impact

We hope that students experience in technology is both enjoyable and educational. At whichever point students leave the subject we want students to come away with an understanding of the design world around them and are able to ask WHY? and more importantly WHY NOT?

Students are assessed in a variety of ways throughout the course this includes direct teacher feedback as well as peer and self-assessment. End of unit tests occur throughout the course with mock examinations in Year 10 and 11.

The main areas of assessment in technology are: Subject Theory - Through homework, end of module tests and mock exams

Practical – Through student manufactured projects

Graphical Skill – Through drawing assessments

One of the key ways we measure our success as a Technology department in Year 9 and is through the number of practical projects taken home at the end of the project and the uptake of our subject at GCSE. At GCSE it is through our results and the uptake to A-Level. Post A level we look at those progressing to university and apprenticeship schemes in technology related careers.

The number of students taking GCSE and A Level Design and Technology at Samuel Whitbread Academy continues to grow every year, with a healthy number progressing onto University courses and apprenticeships.

AQA GCSE Design and Technology (8552)

GCSE Design and Technology will prepare students to participate confidently and successfully in an increasingly technological world. Students will gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise.

Our GCSE allows students to study core technical and designing and making principles, including a broad range of design processes, materials techniques and equipment. They will also have the opportunity to study specialist technical principles in greater depth.

You can find out about the Design and Technology qualifications on the exam board's website, at aqa.org.uk/designandtechnology