Buile Hill Academy

Enriching Lives, Inspiring Ambitions

Curriculum Guide For Parents:
Design & Technology

Consilium Academies

Our Vision and Approach in Design & Technology

Creativity and problem solving is at the heart of Design & Technology. Through a mixture of practical and academic studies, our students have the opportunity to engage with a range of projects that develop their creative thinking skills and inspire a curiosity for learning. Through designing and making, students can see a real application of subjects across school and develop invaluable life-skills. Students become autonomous and creative problem solvers, as individuals and as members of a team. By exploring real-world issues and contexts, students combine practical skills with an understanding of aesthetics, social and environmental issues, functional and industrial practices.

"Design and technology is a phenomenally important subject. Logical, creative and practical, it's the only opportunity students have to apply what they learn in maths and science - directly preparing them for a career in engineering"
James Dyson

What our students will learn

In Key Stage 3, students rotate from subject to subject within Technology, on a carousel. This allows students to experience all areas of Design Technology and Food & Nutrition. Each rotation is approximately 9 weeks long. The curriculum is sequenced to cover a series of topics across the academic year in order to give students a full experience of Design & Technology. Students can then pick GCSE Design & Technology as an option for study at Key Stage 4, where they will further develop their skills and knowledge within this hands-on and exciting subject. The breakdown of topics covered across the year groups is detailed in the grid below. Please note this is subject to change as we adapt our curriculum to meet the needs of our students – this includes practical sessions.

		General topics include:			Projects:		
Key Stage 3	**Year 7**	Workshop Health & Safety Material properties (Man-made boards). Computer Aided Design(CAD) /Computer Aided Manufacturing(CAM) Introduction to iterative design process. Designing for a client			**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 and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools		
	Year 8	Material properties (Thermoforming & Thermosetting polymers) Electronics Iterative design process Designers and Design movements			**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		
	Year 9	Material properties (Metals & Alloys) CAD/CAM Careers and job roles Iterative design process Non-exam assessment skills linking to KS4			**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		

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Stage 4	**Year 10**	**New and emerging technologies. Smart materials, composites and technical textiles.** Introduction to CAD/CAM Woodworking techniques, joints and finishes. Metalworking production techniques.		**Materials** In-depth knowledge and understanding **Non Exam Assessment (NEA) Mock** Identify, investigate and outline design possibilities. Analyse and evaluate design decisions		**Mechanical components and devices**	**Non Exam Assessment (NEA) Task** Released in June.
	Year 11	**NEA Task** Iterative design process	**NEA Task** Iterative design process	**NEA Task** Iterative design process	Exam skills & revision	Exam skills & revision	Written exam (2hrs)

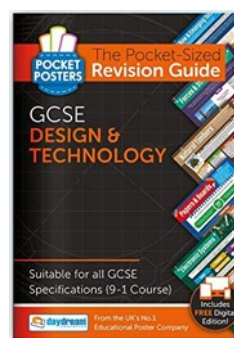**How you can support your child's learning in Design & Technology:**

- Encourage your child to be creative and curious at home.
- Students will have a knowledge organiser for each of their schemes of learning. Students can use these to test themselves on the core content throughout the term.
- Question your child on what they have learnt.
- Students can make the most of design software (free for education users) Fusion 360 & Google SketchUp!
- Seneca is a great resource that pupils can log into to continue learning. Find link below.

Websites you can visit:

- KS4 - https://www.bbc.co.uk/bitesize/examspecs/z4nfwty
- KS3 - https://www.bbc.co.uk/bitesize/subjects/zfr9wmn
- https://www.technologystudent.com
- https://www.eduqas.co.uk/qualifications/design-and-technology-gcse/#tab_overview
- https://app.senecalearning.com/sign-up (GCSE Design & Technology)
- Fusion 360 - https://www.autodesk.com/education/home
- Google SketchUp - https://www.sketchup.com/products/sketchup-for-schools

Books you can purchase:

- Hodder Education My Revision Notes: https://www.hoddereducation.co.uk/subjects/art-design-technology/products/general/my-revision-notes-wjec-eduqas-gcse-(9-1)-design-a
- Hodder Education GCSE Design & Technology Textbook: https://www.hoddereducation.co.uk/subjects/art-design-technology/products/general/wjec-eduqas-gcse-(9-1)-design-and-technology
- Pocket Posters Design & Technology Revision Guide https://www.daydreameducation.co.uk/gcse-design-technology-pocket-posters-the-pocket-sized-revision-guide