

Curriculum Content Map

Subject: Design & Technology Year 10

Month		Term 1	Term 2	Term 3
	Units of Work	Design & Technology and our world Smart materials	Electronic systems and programmable components Mechanical components and devices	Materials Begin preparation for NEA – June 1st (Study sections from natural timbers & manufactured boards)
Cultural Transmission	Specification	Students start with an introduction to Design & Technology and the initial exploration of how this fits in to our world. Students will look at new and advancing technologies and gain an understanding of smart materials.	Students will learn how electronic systems provide functionality to products and processes, including sensors and control devices to respond to a variety of inputs, and devices to produce a range of outcomes. They will learn the functions of mechanical devices to produce movement, changing the magnitude and direction of forces.	Students will learn about papers and boards, natural and manufactured timber and its properties. (Below is from Specialist area for concentration) Stock forms, types and sizes in order to calculate and determine the quantity of materials or components required Alternative processes that can be used to manufacture
	Substantive Knowledge	In Year 10, we build the substantive knowledge of our students through encouraging them to become enquiring, confident and enthusiastic. They will define and solve problems and become knowledgeable about the resources need to help them create even better solutions. Our knowledge based curriculum builds upon material taught throughout KS3 on design, product development and manufacturing.		
	Disciplinary knowledge	In the first term we challenge students to think about: industrial developments and technological advancements; environmental and economic factors; the role of sustainability and ethics in user-centred design. In term 2 students will have opportunities to develop their technical skills that focus on visualisation and realisation of ideas and information. In term 3 students will design and create a final outcome for Year 10 which draws upon all of the skills and knowledge they have developed throughout the design and technology course.		
	Sequencing (Field Retrieval & Extension)	Links back to KS3 learning on prototypes, structures and forces. Recaps materials and design techniques.	Links to KS3 learning of skills of analysing and making and builds from term 1 using more robust analytical skills.	Links to learning about materials and there properties from KS3. Recaps manufacturing processes.
	Summative Assessment	End of Term 1 Assessment to help set realistic targets. An adapted paper. AP1 will be a reduced question paper from the content that has been taught so far.	AP2 will be a full exam paper now that all Year 1 content will have been taught.	AP3 will be an NEA mark (without evaluation)
	Personal Empowerment	Virtue Link to Virtue	The opportunity to reflect, think deeply and critically about an issue. Listening – Listening to organisations and industries ideas on technology of the past, present a future. Problem-Solving with Smart materials and eco-friendly solutions. The generosity of ideas that inventors give to organisations through the process of Intellectual Property.	Students will have the opportunity to practise good speech and speaking through talking about ideas and designs in this unit. We also look at how audiences and consumers show gratitude in the demand for the product and how product improvements show gratitude back to the audiences.
Preparation for Work	Skill Link to Skill	Transferable skills Creativity embedded throughout the designs. Looking at how we can be a friendly and civil society about the environment. Which companies have had the courage to change their approach despite cost and impact. What organisations and innovations lead the world of technology. Students having the courage to come up with new ideas in their own designs.	They will explain how innovators had to stay positive against costs, competition and environmental impacts. As students present their work and research (Good Speech and Speaking) there will be an opportunity to trial some of the machinery and a development of positivity and good humour as we know things do not always go to plan first time round.	There will be an opportunity to trial some of the machinery and a development of positivity and good humour as we know things do not always go to plan first time round. And they will be operating a high level of self-mastery over the term as they have to work independently to meet targets. Students will have compassion through evaluation of their own work and peer-assessment. Good Sense will be tested as they work towards the deadlines of the NEA.
Preparation for Citizenship	SMSC & British Values Link to SMSC & British Values	<i>Developing opinions on current issues</i> Social – viewing each other’s work and being inspired by others. Cultural –showing respect for equipment provided by the school Social – looking at the work of others Cultural – be tolerant of each other’s views and opinions	Social – understanding how to follow a process from start to finish Cultural – responsibility for quality of own work Social – viewing each other’s work and being inspired by each other. Cultural – responsibility for quality of own work	Social – viewing each other’s work and being inspired by each other and the work of others Cultural – responsibility for quality of own work and equipment provided by the school. Social – viewing and discussing the work of others Cultural – be tolerant of each other’s views and opinions and being respectful of their work.