YEAR 10

	Project	What will I learn?
Term 1	*Project 1: 3D Paper and Board Modelling with Integrated Electronics*	In the first project, students embark on a journey into the world of 3D modelling, laying the foundation for their understanding of product design. They will learn how to conceptualise and design 3D products, honing their technical drawing skills as a fundamental tool. Through hands-on activities, students will translate their designs into physical models using paper and board modelling techniques. However, this project extends beyond mere modelling; students will also enhance their problem-solving skills by integrating working electronics into their cardboard models. This addition challenges students to think creatively and practically, bridging the gap between design and functionality. By combining traditional modelling techniques with modern electronic integration, students gain a holistic understanding of product design and innovation from conception to implementation.
	Project 2 Clock project	In the second project, students delve into the realm of laser cutting technology. They will explore the work of other designers and gain inspiration to develop their own unique clock design. Through this project, students will learn various design strategies to infuse creativity into their work while honing their skills in 2D design and laser cutting. This project encourages students to think critically about design choices and how to make their ideas stand out.
Term 2	Project 3: Wood Workshop Project	The third project immerses students in the world of woodworking. They will become familiar with a variety of techniques, tools, and machines used in a 3D workshop environment. From shaping wood to assembling intricate structures, students will gain hands-on experience while honing their craftsmanship. This project emphasises practical skills and encourages students to explore the versatility of wood as a medium for design.
	Project 4: Robotic Arm Design and Programming	In the fourth project, students delve into the world of robotics, focusing on electronic components, microcontrollers, and programming techniques, including basic AI applications. Throughout this project, students will gain hands-on experience with robotic electronic components, learning how

		to assemble and program microcontrollers to control the movements of a robotic arm. They will also explore the fundamentals of simulation, using software to model and test their designs before constructing a physical prototype. By the end of the project, students will have developed a foundational understanding of robotics, electronics, and programming, paving the way for further exploration in these exciting fields.
Term 3	Project 5: Bluetooth Speaker Design	**Project 5: Bluetooth Speaker Design** In the final project, students culminate their learning journey by designing and constructing a Bluetooth speaker, integrating the skills and knowledge acquired throughout the course. This project challenges students to synthesise their understanding of modelling, designing, and 3D product making into a fully functional product. As they design their Bluetooth speakers, students will not only refine their modelling and design abilities but also expand their repertoire of 3D making techniques. In addition to laser cutting, students will delve into other manufacturing processes such as vacuum forming and 3D printing. By exploring these diverse techniques, students gain a comprehensive understanding of manufacturing methods and materials, empowering them to make informed design decisions and produce high-quality prototypes. Through this multifaceted project, students demonstrate their creativity, technical proficiency, and innovation in designing a product that meets both aesthetic and functional criteria.
Term 3	GCSE Controlled Assessment	On June 1st, in term six, pupils will embark on a significant phase of their design and technology journey. They will be presented with three themes by the exam board, from which they will select one to guide their creative exploration. This pivotal moment marks the beginning of their portfolio development, where they will showcase a range of essential design skills. In this term they will be expected to show - Understanding of a brief

		- Researching and analysis of existing products - Design eras - Iconic designers and designs - Designing a questionnaire and recording results - Creating design requirements using analysis from research

- Year 11

	Project	What will I learn?
Term 1 & 2	GCSE Controlled Assessment	Throughout terms one and two of Year 11, students will remain engaged in their GCSE controlled assessment, advancing their chosen project theme. They will refine their initial ideas, employing an iterative design process to create a final prototype. Through continuous development and feedback, students will hone their designs, ensuring they meet criteria for functionality, aesthetics, and user experience. By the end of term two, students will complete their controlled assessment, presenting their finalised prototypes for assessment. This focused period allows students to demonstrate their design proficiency and produce high-quality outcomes aligned with key design principles.
Term 3	Final exam revision	