Year 9 TECHNOLOGY

Overall Intent:

In Year 9, students participate in a variety of projects. In doing so, they build their understanding of CAD (Computer Aided Design), learn what it means to work to a client brief, problem solve through modelling, develop engineered drawings and work with traditional manufacturing methods. Students work with different materials and develop skills in preparing, cutting and shaping as well as discovering more about their working properties. Students also work with the laser cutter and use CAD software such as OnShape which is used in industry. Students will also learn about electrical theory, and use this to build an electronic product that solves a given problem. In addition to understanding circuit theory and control principles, students will also develop circuit building skills and packaging design. By looking at a range of designing and manufacturing techniques and developing their innovation, students establish their ability to be able to articulate their creative ideas confidently. Please note that students rotate through the projects and different groups complete the different projects at different times of the year.

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic/Area of study	Onshape		ARCHITECTURE PROJECT		KEY SKILLS PROJECT	ELECTRONICS
Key learning aims – knowledge and skills	Use of CAD in Industry: theory and history behind use of CAD in industry. Creating simple shapes in CAD: use of Onshape web based 3d programme Rendering: creating images to show clients. Engineering Drawings: creating drawings. Phone Amplifier: following instructions to create example product.		Working to a brief: consider needs and wants of client, shipping container constraints. Researching: using research of existing shipping container projects to inform design, understanding basic awareness of space/size in relation to furniture design. Researching space saving/foldaway furniture. Designing: plan and 3D drawing skills, perspective drawing. Practical: to draw out, cut and build using card. Evaluation: peer and self-reviewing finished product.		Practical skills: line bending, vac forming, sketch up, measure mark cutting, draw filing cross filling, wasting and preparing, centre punch, drilling metal, finishes, quality control, CAD/CAM, scales of production, wood bending, laminating, veneer steam bending, pop rivets.	Understand key elements of circuit theory including circuit symbol recognition and principles of circuit operation. Developing soldering skills in order to manufacture an electronic product which satisfies the brief given

Assessment	Focus on CAD designing	Focus on research and designing	Focus on researching	Practical circuit building skills and circuit theory