

Timeline	Topic	Key concepts and knowledge	Skills development	Rationale
YEAR 8 OVERVIEW – carousel so students may carry out activities in different order				
Y8 - half term 1	Technical drawing (all areas of DT and Engineering)	<ul style="list-style-type: none"> • Presentation of design work using formal drawing styles • Techniques to enhance drawing presentation • Accuracy • Isometric drawing • Two point perspective • Third angle orthographic projection 	Presentation skills Graphic communication skills Formal drawing techniques Confidence Self management	This project builds on the freehand sketching skills from year 7 and introduces more formal drawing styles. This will be students' first step in using isometric, two point perspective and orthographic drawing styles to communicate their ideas.
Y8 – half term 2	Food and Nutrition	<ul style="list-style-type: none"> • Building on skills from Y7 <ul style="list-style-type: none"> ○ Creaming method ○ Melting method. ○ Rubbing in method ○ Binding ○ Shaping and dividing ○ Handling meat • Macronutrients • Meat, fish and dairy 	Time management Independent working Team work Problem solving Literacy (technical vocabulary) Numeracy (Weighing, timing)	During year eight students will revise and develop the practical skills learnt in year 7. The main focus will be developing confidence and independence in practical cookery. Students will be given choices to demonstrate similarities in recipes and how skills are transferable. They will also learn about the macronutrients
Y8 – half term 3	Iterative (Design Technology)	<ul style="list-style-type: none"> • Creativity • Identifying users' needs • Prototyping • Evaluation • Working with specialist tools/equip • Safety in the workshop • Problem solving • Meeting needs of user (design solutions) • Co-operative working • Critical thinking skills 	Literacy (technical vocabulary) Numeracy (explanation of practical application of numeracy) Team work Co-operation Sequencing Problem solving Creativity Self-management Preparation for GCSE DT NEA style assessment	This project is the student's first opportunity to have total free rein to prototype a product to meet a user's needs. The project is to emphasise creativity and avoidance of design fixated results. Students are encouraged to give a receive feedback from "critical friends" to develop resilience and problem solving skills, creativity and self-management. These are key skill required in key stage 3 as well as key stage 4 where it will be developed further

<p>Y8 – half term 4</p>	<p>Mechanisms, motion, CAD, CAM (Design technology and Engineering Design)</p>	<ul style="list-style-type: none"> • Solidworks modelling (3D CAD) • Techsoft 2D Design (2D CAD) • Introduction to 3D printing • Advantages and disadvantages of CAD • Types of motion • Mechanisms • How motion and mechanisms make things work 	<p>Accuracy working in 3D and 3D CAD Literacy (technical vocabulary) Numeracy (drawing to scale) Digital skills Specialist CAD software Communication skills creativity Understanding how products work/move Self management</p>	<p>This project is an introduction into 3D cad modelling. Students will be familiarised with the 3D modelling environment before learning how to construct 3D models with levels of precision. 3D modelling is the starting point for 3D printing so students gain awareness of the 3D printing process and how it works. Finally the students will start to gain knowledge about types of motion and how this can be applied to a variety of mechanisms to make products move in different ways.</p>
<p>Y8 – half term 5</p>	<p>Lamp project (Textile application) DT – textiles and smart materials</p>	<ul style="list-style-type: none"> • Characteristics of a range of materials • Product manufacture and assembly sequence • Smart materials • Safe use of specialist tools and equipment (textiles) • Use of over locker, digital printing • create lamp shade cover • Work of others past and present designers/ diversity • Design development • Hand embellishment • Safe use of sewing machine • Characteristics of a range of smart materials 	<p>Use of specialist tools and equipment Literacy (technical vocabulary) Numeracy (hems and seams) Sequencing Accuracy Problem solving Communication skills (design) Digital skills Creativity Teamwork Self-management</p>	<p>This project works in harmony with the lamp base element to create a mixed material project. The focus of this section is to work with different fabric based materials to embellish the lampshade with surface decoration techniques, Students will base their lamp design on the designer they have researched. Students will recap basic sewing skills and develop new skills using various textile machinery creating applique, embroidery stitches and creating a hem. They will also develop knowledge of digital printing. These new skills learned will develop their knowledge further at KS4</p>

<p>Y8 – half term 6</p>	<p>Lamp project (part 2) DT – woodwork, electronics and programmable systems</p>	<ul style="list-style-type: none"> • Characteristics of a range of materials (timbers and paper/boards) • Marking out techniques/tools • Material removal • Product manufacture and assembly sequence • accuracy • Systems approach to design • Safe use of specialist tools and equipment • Electronic components and systems • soldering 	<p>Use of specialist tools and equipment Literacy (technical vocabulary) Numeracy (marking out and measuring) Sequencing Accuracy Problem solving Team work Self-management Quality control</p>	<p>This project works in harmony with the textiles element to create a mixed material project. The focus of this section is to work with timbers to create the structure of the lamp. Students will need to use a range of marking out and manufacturing techniques to manufacture the lamp base before moving on to study basic electronic systems and identify some electronic components. Students will join electronic components for their lamp by soldering and complete a workshop risk assessment for this task.</p>
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