

<u>Timeline</u>	<u>Topic</u>	<u>Key concepts and knowledge</u>	<u>Skills development</u>	<u>Rationale</u>
YEAR 7 OVERVIEW – carousel so students may carry out activities in different order				
Y7 - half term 1	Design communication (all areas of DT and Engineering)	<ul style="list-style-type: none"> • Presentation of design work • Techniques to enhance creativity • Producing initial design ideas • Avoiding design fixation • Tonal range/rendering • One point perspective • Jack straws/scruffiti design development • Biomimicry • Annotation (ACCESSFM) 	Creativity Presentation skills Communication skills Confidence Self-management	Designing is a key part of design Technology and engineering. This unit is taught to introduce the basics of communicating hand drawn design ideas. Throughout KS3 and KS4 the design communication skills are revisited and built on to enable students to present their ideas effectively using graphic communication techniques
Y7 – half term 2	Structures, metals and forces (Design Technology)	<ul style="list-style-type: none"> • Types of metal • Working with metal • Working with plastic • Line bending • Joining plastic • Working with specialist tools/equip • Health and Safety in the workshop • 4 forces in structures • Types of structure • Computer simulation 	Literacy (technical vocabulary) Numeracy (explanation of practical application of numeracy) Use of specialist tools and equipment Team work Co-operation Sequencing Self-management Working with metals and plastics	Students need to have a working knowledge of material properties and how to use them in a practical context. This mini project is an introduction to the workshop environment (health and safety) using a pillar drill on plastic and metals, and shaping materials with files. This knowledge will be added to over the coming years. Students will learn about structures, forces and how they work in practical applications as well as in a computer simulation. Further knowledge of working with different materials in the workshop is covered in the following years

<p>Y7 – half term 3</p>	<p>Textiles (Design Technology)</p>	<ul style="list-style-type: none"> • Properties and working with textiles • Working with specialist tools/equipment • Safety in the workshop • Tie dying fabric (cultural) • Measuring and cutting out • Applying surface decoration techniques • Using a variety of hand sewing and machine skills • Creativity • Understanding how different Textiles machinery work in industry • The ability to evaluate and test a product 	<p>Literacy (technical vocabulary) Numeracy (explanation of practical application of numeracy Measuring problem solving)</p> <p>Use of specialist tools and equipment Creativity (tie dye) Team work Co-operation Problem solving Sequencing Self-management Independence Working with CAM textile machinery Product testing</p>	<p>This project is an introduction to basic sewing skills working with natural and man-made fabrics. Progressing from hand sewing techniques to machine skills. Students will manufacture a Bean bag for games. Learning how to apply colour, learn new types of sewing and construction skills, both in the classroom and industrial techniques. Further knowledge of textiles will be introduced over the coming years</p>
<p>Y7 – half term 4</p>	<p>Tangler project (Engineering design)</p>	<ul style="list-style-type: none"> • Analyse existing products • Properties and working with plastics • Working with specialist tools/equip • CAD and CAM • Creativity • Prototyping • Safety in the workshop <p>Design development</p> <ul style="list-style-type: none"> • Designing without fixation • Prototyping to meet users needs • Properties and molecular structure of plastics • Vacuum forming <p>Laser cutter</p>	<p>Use of specialist tools and equipment Literacy (technical vocabulary) Digital skills Problem solving Team work creativity Communication skills Co-operation Sequencing Self-management Working with CAD and CAM</p>	<p>This project is an introduction to design creativity to minimise design fixation and CAD/CAM. Students are given the opportunity to design by hand before learning the basics of 2D Computer Aided Design (CAD). Students will learn how CAD designs can be manufactured using a laser cutter and the different types of plastic (some suitable for laser cutting and others not) before learning about the plastic vacuum forming process. Further knowledge of CAD/CAM is built on over the coming years</p>

<p>Y7 – half term 5</p>	<p>Sustainability (Design Technology)</p>	<ul style="list-style-type: none"> • What is sustainability • Understanding the 6 R's and other key terms • The processing of the planets raw materials and impact on sustaining them and product life cycle • What we need to do to make the environment better • Food waste and seasonality • Creativity • Design • Thinking skills • Solving a problem 	<p>Literacy (technical vocabulary) Team work Co-operation Problem solving Self-management Responsibility Creativity Cross curriculum ART, Food Nutrition, Geography, Science</p>	<p>This project introduces students to technical vocabulary and the relevance of raw materials, their uses and end of life implications. Furthermore, the social, ethical responsibility of designers to create sustainable products. We look at the planets raw materials, how they are processed and their impact on the environment. The definition of sustainability, finite, 6R's and consider food waste before looking at students applying their knowledge to an upcycling design challenge. Sustainable design is a common thread through all areas of design technology and Food and nutrition</p>
<p>Y7 – half term 6</p>	<p>Technical drawing (all areas of DT and Engineering)</p>	<ul style="list-style-type: none"> • Presentation of design work using formal drawing styles • Techniques to enhance drawing presentation • Accuracy • Isometric drawing • Oblique • Two point perspective • Third angle orthographic projection • Thick and thin line technique 	<p>Presentation skills Graphic communication skills Formal drawing techniques Confidence Self management</p>	<p>This project builds on the hand drawing skills from year 7 and introduces more formal drawing styles. This will be students first step in using isometric, oblique, two point perspective and orthographic drawing styles to communicate their ideas. As part of the project they will need to convert one type of drawing into another form.</p>

<p>Y7 – half term 6</p>	<p>Food and Nutrition</p>	<ul style="list-style-type: none"> • Safe food preparation (hygiene & safety) • Safe use of the hob and oven. • Range of cooking skills including: <ul style="list-style-type: none"> ○ Bridge and claw technique. ○ Rubbing in method ○ Fry, sauté, boil, simmer & bake. • Eat well guide with a focus on:- <ul style="list-style-type: none"> ○ Fruits and vegetables ○ Cereals 	<p>Independent practical work Team work Co-operation Use of specialist equipment Literacy (technical vocabulary) Numeracy – weighing, measuring & timing Sequencing Testing ('doneness') Problem solving Self-management</p>	<p>This project is an introduction to the domestic kitchen environment and how to work safely in it. This module has a practical focus; the student will learn how to prepare and cook a range of sweet and savoury dishes. The students will learn about the importance of personal hygiene when working with food. They will also learn about safe food preparation and storage to prevent food spoilage and food poisoning.</p>
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