

KS3 Long Term Curriculum Plan: Design and Technology Year 9 2022-23

<p>Curriculum Aim: The national curriculum for design and technology aims to ensure that all pupils: develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users critique, evaluate and test their ideas and products and the work of others understand and apply the principles of nutrition and learn how to cook.</p>
<p>Link to prior learning: At the end of year 8 students opt for two materials areas to study in greater depth in year 9. The year group is split into four bands by the school (E, F, G and H). These are sub- divided into six mixed ability Technology sets and are timetabled for two fifty minute periods per week. The subjects in the rota are Computing, Electronic Engineering, Food Preparation and Nutrition, Graphics, Resistant Materials and Textiles Technology. Each unit is a term and a half in length to build on their learning in Year 7/8 and allow them to develop their skills in depth for KS4.</p>
<p>Rationale of sequencing: We teach a curriculum that ensures that we consistently revisit the key strands of the design process in order to consolidate and develop students' skills in designing, making, evaluating, technical knowledge as well as cooking and nutrition. The design tasks become more challenging and content is developed further as the curriculum progresses.</p>

	Focus / Topic	Knowledge & Skills	Assessment
Food Preparation and Nutrition	Principles of nutrition and healthy eating applied in multicultural cuisines and adapting for special dietary requirements.	<ul style="list-style-type: none"> ● Iterative design process ● Food Preparation Skills: Knife skills, weighing and measuring, testing for readiness, use of the cooker, use of equipment, sauce making, dough making, raising agents, combing and shaping mixtures, marinating, cooking methods ● Food Nutrition and Health, macro-nutrients and micro-nutrients, nutritional analysis ● Food Science, gelatinization, coagulation, maillard reaction ● Food Safety, food hygiene ● Food Choice, types of cuisine and cultural and religious influences, special diets, costing ● Food Provenance 	<ul style="list-style-type: none"> ● Self-assessment booklet - completed for all practical tasks ● Food Preparation Skills - verbal feedback, self-assessment, project dish ● Food Nutrition and Health - project ● Food Science- practical work and self-assessment ● Food Safety- practical work ● Food Choice- project ● Assessment week: w/b 16th November 2022) ● Assessment week (w/b 21st February 2023) <p>(During assessment week students will sit a written exam.)</p>
Graphics	<p>Design Brief: Design the corporate identity for a retail company using various graphic techniques including CAD and apply this to the interior and exterior of a scale shop prototype model.</p>	<ul style="list-style-type: none"> ● Develop and communicate design ideas using annotated sketches, detailed plans, 3-D ● Understanding and developing a corporate identity ● Mathematical modelling, oral and digital presentations and computer-based tools ● Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations ● Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture ● Select from and use a wider, more complex range of materials and 	<p>Year 9: These topics will be assessed in a written assessment during assessment week.</p> <ul style="list-style-type: none"> ● Production of specifications ● Corporate design and development ● Evaluation techniques ● Prototyping ● Properties and uses of paper, card and modelling materials ● CAD techniques ● Graphic prototyping tools and techniques ● Technical Drawings

		<p>components taking into account their properties</p> <ul style="list-style-type: none"> ● Manufacture products using various types of paper, card and modelling boards. ● Technical Drawing techniques. ● Iterative Design Process 	<ul style="list-style-type: none"> ● Iterative Design Process. <ul style="list-style-type: none"> ● Assessment week: w/b 16th November 2022) ● Assessment week (w/b 21st February 2023) <p>(During assessment week students will sit a written exam.)</p>
Resistant Materials	<p>Design Briefs:</p> <p>Design and make a scale model MINI car for a chosen stakeholder, incorporating both wood/polymer forming skills and electronics.</p> <p>Design, develop and manufacture a timber/polymer storage product using a range of tools, machines and joining techniques.</p>	<ul style="list-style-type: none"> ● Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations ● Practical Skills Manufacturing (Timber joints) ● Fundamentals of Product Design ● Vacuum Forming ● Practical Skills Manufacturing (Polymers) ● Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture ● Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions ● Electronics ● Automotive Design and Mechanics ● Iterative Design Process 	<p>Year 9: These topics will be assessed in a written assessment during assessment week</p> <ul style="list-style-type: none"> ● Tools and Machinery processes ● Electronic Components and processes ● Aesthetics and Ergonomics ● Properties and uses of polymers ● Properties and uses of timbers ● Timber Joints ● Adhesives ● Responding to Specifications ● Prototyping ● Producing Design Ideas from a Specification. ● Quality Control and Quality Assurance ● Iterative Design Process <ul style="list-style-type: none"> ● Assessment week: w/b 16th November 2022) ● Assessment week (w/b 21st February 2023) <p>(During assessment week students will sit a written exam.)</p>

Textiles	<p>Design Brief: Design and make a cushion cover that incorporates two methods of fabric embellishment and reflects the needs of a chosen client/culture of a chosen country.</p>	<ul style="list-style-type: none"> ● Understand the health & safety procedures within the textile industry ● Analyse the work of the work of past and present professionals and others to develop their understanding. ● Methods of fabric embellishment – tie-dye, batik, quilting, applique, patchwork, etc ● Explore and study different types of people, culture and society ● Fibre Classification. Natural and manufactured fibres ● Understand and use the properties of fabric ● Investigate new and emerging technology ● Become familiar with Pattern making and symbols ● Develop an awareness of different wash code symbols ● Understand sustainability issues within the textile industry ● Understand the scales of production 	<ul style="list-style-type: none"> ● Health and safety in the textiles industry ● Methods of fabric embellishment ● People, culture and society ● Fabric Classification: Natural & manufactured fibres ● Fabric properties ● Pattern marking and symbols ● Wash codes ● Sustainability ● New and emerging technologies ● Scale of production ● Maths in technology <p>Iterative design process: Research, Specification, Logo design and Evaluation</p> <ul style="list-style-type: none"> ● Assessment week: w/b 16th November 2022) ● Assessment week (w/b 21st February 2023) <p>(During assessment week students will sit a written exam.)</p>
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Further Information

Each group rotates between four different subjects over two years forming a carousel. At the end of year 8 students opt for two materials areas to study in greater depth in year 9. The year group is split into four bands by the school (E, F, G and H). These are sub- divided into six mixed ability Technology sets and are timetabled for two fifty minute periods per week. The subjects in the rota are Food Preparation and Nutrition, Graphics, Resistant Materials and Textiles Technology. Each unit is a term and a half in length.

website: <https://www.chace.enfield.sch.uk/curriculum-technology/>

In Design and Technology, students will develop the skills to:

- use research and exploration, such as the study of different cultures, to identify and understand user needs and the **iterative design process**
- develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations
- develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and CAD (computer aided design) tools
- Make select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture
- select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties
- test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other stakeholders
- cook a range of savoury dishes using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes so that they are able to feed themselves and others a healthy and varied diet

DFE Subject content: [National Curriculum - Design and technology key stages 3 and 4](#)