

KS3 CURRICULUM: Design and Technology (YEAR 9)

Overview

In Technology you will learn about:

- 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

	Focus / Topic	Knowledge & Skills	Assessment
Computing	<ul style="list-style-type: none"> • Networks • Programming and development with the micro:bit • Programming and development with Python 	<ul style="list-style-type: none"> • Basic principles and architecture of local and wide area networks. Exploration of IP and MAC addressing schemes, client-server, P2P networks and encryption. • Planning skills and practice usage of programming vocabulary (Algorithmic thinking, decomposition, etc.). • Exploration of common programming pedagogy, with extensive use of subroutines to solve computational problems 	<ul style="list-style-type: none"> • Assessment week (w/b 11th November 2019) • Assessment week (w/b 14th March 2020)
Electronic Engineering	<p>Design Brief: Design and make an MP3 docking station for a chosen stakeholder, incorporating a speaker and circuit board.</p>	<ul style="list-style-type: none"> • Iterative design process • Orthographic drawing • Practical Skills building (metal) • Practical Skills building (building a circuit board) • Practical skills building (polymers) 	<ul style="list-style-type: none"> • Research • Specification • Design ideas • Evaluation • Maths in technology quiz (Google Classroom) • Assessment week (w/b 11th November 2019) • Assessment week (w/b 14th March 2020)
Food Preparation and Nutrition	Principles of nutrition and healthy eating.	<ul style="list-style-type: none"> • Iterative design process • Food Preparation Skills • Food Nutrition and Health • Food Science • Food Safety • Food Choice • Food Provenance 	<ul style="list-style-type: none"> • Self-assessment booklet • Assessment week (w/b 11th November 2019) • Assessment week (w/b 14th March 2020)

Graphics	<p>Design Brief: Design the corporate identity for a retail company and apply this to the interior and exterior of a shop. The shop will be based in Unit 3 of the Palace Xchange in Enfield. You will need to produce a logo, shop front design, floor plan and model to present to your target market.</p>	<ul style="list-style-type: none"> • Iterative design process • Technical drawing • Use of industrial processes • Theory of shop layout • Scale model making • Adobe Photoshop • Working properties of materials • Colour theory • New and emerging technology 	<ul style="list-style-type: none"> • Assessment week (w/b 11th November 2019) • Assessment week (w/b 14th March 2020) • Shop front analysis • Research • Specification • Logo design • Evaluation • Maths in technology quiz (Google Classroom)
Resistant Materials	<p>Design Brief: Design and make a scale model MINI car for a chosen stakeholder, incorporating both wood and polymer forming skills.</p>	<ul style="list-style-type: none"> • Iterative design process • Practical Skills building (Wood joints) • Quality controls • Questionnaires • Production plans • Vacuum forming • Practical Skills building (building a circuit board) 	<ul style="list-style-type: none"> • Research • Specification • Design ideas • Evaluation • Maths in technology quiz (Google Classroom) • Assessment week (w/b 11th November 2019) • Assessment week (w/b 14th March 2020)
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"> • Iterative design process • Health & Safety in the textile industry • Methods of fabric embellishment – tie-dye, batik, quilting, applique, patchwork, etc • People, culture and society • Fibre Classification. Natural and manufactured fibres • Fabric properties • Pattern making and symbols • Wash Codes • Sustainability • New and emerging technology • Scales of production 	<ul style="list-style-type: none"> • Research • Specification • Logo design • Evaluation • Maths in technology quiz (Google Classroom) • Assessment week (w/b 11th November 2019) • Assessment week (w/b 14th March 2020)

Further Information

The year groups are split into four bands by the school (E, F, G and H). Each band is divided into three forms but these are sub-divided into six mixed ability Technology sets and are timetabled for two double fifty minute periods per week. Each group rotates between six different subjects over two years forming a carousel. The subjects in the rota are Computing, Electronic Engineering, Food Preparation and Nutrition, Graphics, Resistant Materials and Textiles Technology. Each unit is one and a half term in length.