

UST

University Schools Trust



**Royal Greenwich**

Trust School

the constellation

**Technology  
Curriculum Booklet  
2020-2021**

## Our Vision and Approach in Technology

At Key Stage 3 (KS3), both Food & Nutrition and Design and Technology are provided for students on a carousel system, where they will study each subject for two terms each year. Here there is a strong focus on design principles and practical techniques.

At Key Stage 4 (KS4), students can choose the Level 2 Tech Award in Engineering or the L2 BTEC First in Construction and the Built Environment. This provides a solid foundation for students to continue their studies at KS5 to the L3 BTECs in Engineering and Construction and the Built Environment.

Our specifications for Key Stage 4 and 5 are:

For Year 10:

- BTEC First L1 & 2 Award Construction and the Built Environment
- BTEC First L1 & 2 Tech Award in Engineering

For Year 12:

- BTEC National L1 & 2 Award Construction and the Built Environment
- BTEC First L1 & 2 Tech Award in Engineering

Our curriculum is sequenced to cover a series of topics across the academic year in order to give students a full experience of Design & Technology and Food & Nutrition.

	Technology		Food & Nutrition	
	Term 1	Term 2	Term 3	Term 4
Year 7	<b>Sketching:</b> Basic Techniques <b>Designing:</b> Contexts, basic specifications	<b>Technical Knowledge:</b> Metals <b>Making:</b> Practical Skills and Techniques, marking and hand tools; Trophy Project <b>Evaluating:</b> Against specification	Understand basic Nutrition and practical skills. To use a range of commodities and equipment to demonstrate safe cooking skills such as using a knife, small electrical appliances, hob and oven.	To carry out food investigations and nutritional analysis.  Understand the relationship between diet, nutrition and health, including the effects of poor diet and health.
Year 8	<b>Sketching:</b> Arcs, Oblique <b>Designing:</b> Specifications that involve a wide range of requirements	<b>Technical Knowledge:</b> Woods <b>Making:</b> Woodworking tools and processes; Mechanical Toy <b>Evaluating:</b> Testing, disassembly techniques	To understand the physiology, function, sources, deficiency effects of the nutrients.  Understand through practical and science investigation the reasons why foods are cooked and the different methods of heat transfer.	Plan, prepare, cook, modify and create recipes to meet different dietary groups and life stages.  Using sensory analysis to evaluate and judge a wide range of foods.

Year 9	<p><b>Sketching:</b> 3D Techniques; Isometric</p> <p><b>Designing:</b> Reformulating Design Problems</p>	<p><b>Technical Knowledge:</b> Polymers</p> <p><b>Making:</b> Practical Skills and Techniques, marking and hand tools, Speaker Project</p> <p><b>Evaluating:</b> Life Cycle Analysis</p>	<p>Exploring the five core topics which the Food preparation skills are integrated into;</p> <p>Food, Nutrition &amp; Health, Food Science, Food Safety, Food Choice and Food Provenance.</p>	<p>Plan, prepare and cook a range of dishes from different cultures using distinctive ingredients, specific preparation, equipment, cooking methods and presentation techniques.</p> <p>To investigate the working and chemical properties of food through scientific investigation. and practical tasks.</p>
Year 10	<p><b>Construction</b></p> <p>Unit 1 - Construction Technology</p> <p>Unit 2 - Scientific and Mathematical Applications for Construction</p> <p>Unit 3 - Construction and Design</p> <p>Unit 10 - Exploring Electrical Principles and Techniques</p>		<p><b>Engineering</b></p> <p>Component 1- Engineering Sectors and Design Applications</p> <p>Component 2 - Investigating an Engineering Product</p> <p>Component 3 - Responding to an Engineering Brief</p>	
Year 12	<p><b>Construction</b></p> <p>Unit 1 Construction Principles</p> <p>Unit 2 Construction Design</p> <p>Unit 4 Construction Technology</p> <p>Unit 5 Health and Safety in Construction</p> <p>Unit 6 Surveying in Construction</p> <p>Unit 7 Graphical Detailing in Construction</p> <p>Unit 14 Provision of Primary Services in Construction</p>		<p><b>Engineering</b></p> <p>Unit 1 Engineering Principles</p> <p>Unit 2 Delivery of Engineering Processes Safely as a Team</p> <p>Unit 3 Engineering Product Design and Manufacture</p> <p>Unit 4 Applied Commercial and Quality Principles in Engineering</p> <p>Unit 21 Electronic Measurement and Testing of Circuits</p> <p>Unit 22 Electronic Printed Circuit Board Design and Manufacture</p> <p>Unit 41 Manufacturing Secondary Machining Processes</p>	
Year 13	<p><b>Construction</b></p> <p>Unit 3 Tendering and Estimating</p> <p>Unit 8 Building Regulations and Control in Construction</p> <p>Unit 9 Management of a Construction Project</p> <p>Unit 11 Site Engineering in Construction</p> <p>Unit 12 Low Temperature Hot Water Systems</p> <p>Unit 17 Projects in Construction</p>		<p><b>Engineering</b></p> <p>Unit 5 A Specialist Engineering Project</p> <p>Unit 6 Microcontrollers</p> <p>Unit 7 Calculus to Solve Engineering Problems</p> <p>Unit 25 Mechanical Behaviour of Metallic Materials</p> <p>Unit 26 Mechanical Behaviours of non-metallic materials</p>	

	Unit 26 Conversion, Adaption, and Maintenance of Buildings Unit 33 Housing Design Project	Unit 40 Computer Aided Manufacturing and Planning Unit 42 Manufacturing Primary Forming Processes
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**How you can support your child’s learning in Technology and Food & Nutrition:**

- Supporting your child’s learning in Design and Technology may involve many different things to aid their theoretical and practical understanding of the subject.
- Activities which involve investigating and evaluating existing products is a key part of the course and even something that can be practised at home.
- Pupils helping out with cooking and evaluating how recipes can be improved can also help them practice some key skills.
- Similarly, designing and making activities in which children design and make 'something' for 'somebody' for 'some purpose'. The more a student considers these things, the easier it is to put it into practice in lesson.
- Sketching is an essential part of communicating ideas, so encouraging your child to sketch can help them externalise ideas

**Websites that you can visit:**

<https://technologystudent.com/>

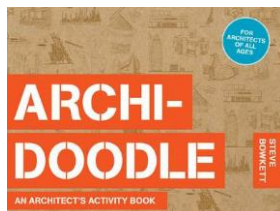
<http://www.focuselearning.co.uk/u/31331/tmupDirAxnrDgeyyFmiiEexovEsgEiwrv>

**Books that you may wish to purchase:**



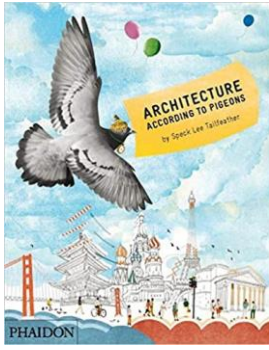
Futurekind: Design by and for the People:

<https://www.amazon.co.uk/Futurekind-Design-People-Robert-Phillips/dp/050051979X>



Archi-Doodle: An Architect's Activity Book

<https://www.amazon.co.uk/Archidoodle-City-Architects-Activity-Book/dp/1780676085>



Architecture According to Pigeons <https://www.amazon.co.uk/Architecture-According-Pigeons-Speck-Tailfeather/dp/071486353X>