



The High School  
**Leckhampton**

# Year 7 DESIGN TECHNOLOGY

## Topic Titles

PRODUCT DESIGN: Block Bot  
PRODUCT DESIGN: Trick Deck  
PRODUCT DESIGN: Keyring  
TEXTILES: Bunting  
FOOD & NUTRITION: Healthy Eating

## Intent

Design and technology prepares students to participate in tomorrow's rapidly changing world. They learn to think and intervene creatively to solve problems and become increasingly autonomous as well as collaborative team members. Students must look for needs, wants and opportunities and respond to them by developing a range of ideas and solutions. They combine practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. As they do so, they reflect on and evaluate present and past design and technology, its uses and effects. Through design and technology, all students can become discriminating and informed users of products and innovators. The DT department aims to be a stimulating and inviting place where all students feel capable, supported, and challenged, whilst enjoying their learning.

## Links with other subjects

**Art** – Design process, drawing rendering, annotation, aesthetics  
**Science** – Properties of materials, electronics, safety and risk  
**English** – Literacy skills, analysis and annotation  
**PSHE** – Self-care (cooking)  
**Maths** – Measurement, units, scale, ratio, area, volume, numeracy

## How will knowledge and skills be taught?

During each academic year, students complete four different projects of varying length across all DT areas of product design, textiles and food and nutrition. Whilst specific knowledge and processes underpin each topic, the key skills of designing, making, evaluation and technical knowledge are consistent throughout the programme of study, and link to formative assessment objectives. Students work in booklets designed specifically for each project to record all aspects of their creative journey, including designs, CAD/CAM, digital research and evaluation of products as well as understanding and evidence of health and safety. We are proud to offer a range of DT opportunities to all students and enable them to develop personal and meaningful responses to a range of briefs.

## How can parents help?

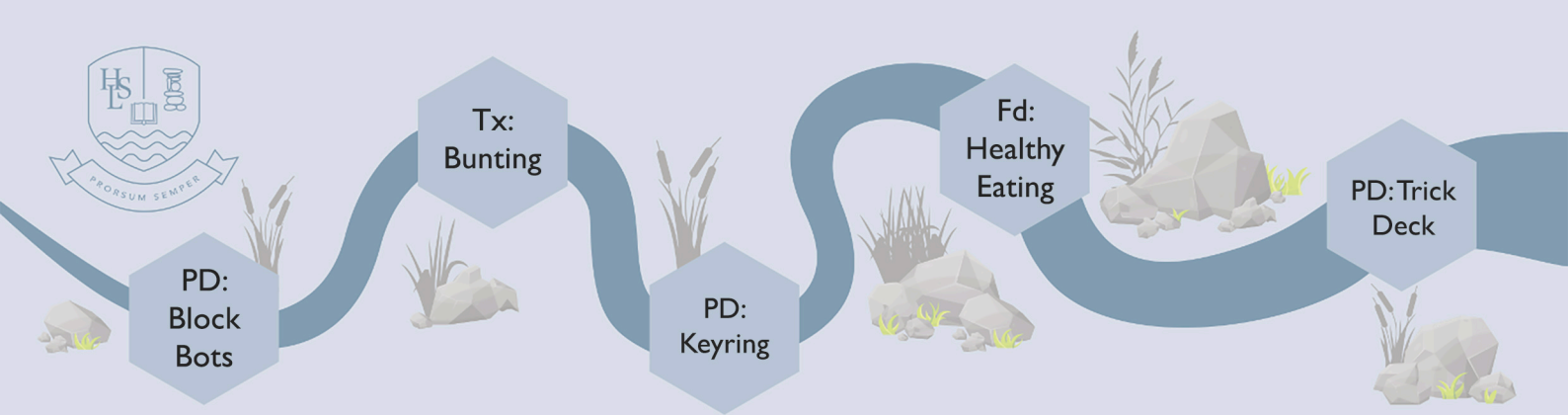
By encouraging positive engagement with the subject and a familiarity with the resources provided on the VLE. Students complete all tasks, including homework, in their project booklets so engagement with this resource at home and support with development of their ideas and evaluation of their concepts and products would be very beneficial. Support too with organisation of ingredients ensuring these are brought in on the correct days is essential and very much appreciated. Watching relevant television programmes such as *The Repair Shop*, *Grand Designs*, *Great British Sewing Bee* and *Bake Off* can give the subject real-world context. Students should be encouraged to undertake thorough and independent research, draft and edit written work which should always be personal, not copied and pasted and use subject specific vocabulary, appropriately.

## Recommended Reading and Preparation for Learning

Making It: Manufacturing Techniques for Product Design – Chris Lefter  
The Complete Baking Book for Young Chefs – America's Test Kitchen Kids  
The Complete Cooking Book for Young Chefs – America's Test Kitchen Kids  
Process: 50 Product Designs from Concept to Manufacture – Jennifer Hudson  
Contemporary Design, Classics of Modern Design – Catherine McDermott  
50 Fantastic Ideas for Exploring Food – Judith Horvath  
The Eco-Design Handbook – Alistair Faud-Luke  
Design of Everyday Things – Don Norman

### Websites:

foodafactoflife.org.uk  
technologystudent.com  
The Design Museum  
The V&A Museum



<b>Subject:</b> Design & Technology		<b>Year Group:</b> Year 7	<b>Duration:</b> 15-16 Lessons
<b>Module/Theme:</b> Product Design: Block Bots			
<b>Topic Outline &amp; Aims</b> (Intent) Year 7 D&T is focused on skill building to ensure students feel confident in using a range of tools and materials to design and make products. This project is designed to quickly develop a range of making skills including the use of hand tools and powered machinery. Students will design and make a wooden block bot with a USB powered LED and laser cut components. Correct health and safety and preventative measures are a key focus of this project. <ul style="list-style-type: none"> <li>o To develop a foundational knowledge of key pieces of workshop equipment and how to use them safely and effectively.</li> <li>o To generate creative design ideas to meet a brief and develop a successful outcome through discussion, annotation, modelling, and research.</li> </ul>			
<b>Key Skills and Knowledge taught through this topic:</b> (Intent) <ol style="list-style-type: none"> <li>1. Identify and solve design problems using a variety of approaches to generate creative solutions</li> <li>2. Select from a wide range of materials and processes and apply suitable techniques appropriate to needs</li> <li>3. Test, evaluate and refine ideas and products against a specification or brief to meet intentions</li> <li>4. Develop understanding and ability in using CAD software through guided tutorials</li> <li>5. Communicate ideas, intentions and insights using annotation, discussion, and visual planning</li> </ol>			
<b>Prior Learning:</b> (Context) <b>KS2:</b> <ul style="list-style-type: none"> <li>o Students have experience of drawing as part of the design and development process.</li> <li>o Students have experience of evaluating a range of existing products.</li> <li>o Students have knowledge of design, structures, mechanisms, electrical controls and a range of materials.</li> </ul>		<b>Future Learning:</b> (Context) <b>KS3:</b> Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. An understanding of materials, their uses and properties will be developed throughout KS3 in all Design and Technology areas. Annotation and evaluation tasks establishes an expectation of reflective design helps to develop critical and reflective thinkers with enquiring minds. <b>KS4:</b> <ul style="list-style-type: none"> <li>o AO1: Identify, investigate and outline design possibilities to address needs and wants.</li> <li>o AO2: Design and make prototypes that are fit for purpose.</li> <li>o AO3: Analyse and evaluate design decisions and outcomes, including for prototypes made by themselves and others and wider issues in design and technology.</li> <li>o AO4: Demonstrate and apply knowledge and understanding of technical, designing and making principles.</li> </ul>	
		<b>National Curriculum Links:</b> (Context) <ul style="list-style-type: none"> <li>o <b>Design</b>- Develop ideas to inform the design of innovative, functional, appealing products that respond to a set brief</li> <li>o <b>Make</b> – Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</li> <li>o <b>Evaluate</b> – Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users</li> <li>o <b>Technical Knowledge</b> - Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions</li> </ul>	
<b>RRSA Links:</b> 12 – Respect for Children's Views 13 – Sharing Thoughts Freely 17 – Access to Information 31 – Rest, Play, Culture and Arts		<b>Eco Schools Links:</b> <b>Waste</b> – Ensure all recyclable materials are disposed of correctly	

<p><b>British Values Links:</b></p> <p><b>Democracy –</b></p> <ul style="list-style-type: none"> <li>o Freedom to voice opinions during class feedback sessions</li> <li>o Votes on materials/techniques</li> </ul> <p><b>The Rule of Law –</b></p> <ul style="list-style-type: none"> <li>o The importance of health and safety in the workshop</li> <li>o The importance of routine for clearing materials at the end of a practical lesson</li> </ul> <p><b>Individual Liberty –</b></p> <ul style="list-style-type: none"> <li>o Importance of independent research and learning</li> <li>o Importance of reflection of ideas and processes</li> </ul> <p><b>Mutual Respect –</b></p> <ul style="list-style-type: none"> <li>o Taking part in clearing and tidying the studios</li> <li>o Sharing work and ideas through group feedback; respecting each other's strengths and weaknesses</li> </ul> <p><b>Tolerance -</b></p> <ul style="list-style-type: none"> <li>o Sharing of tools and equipment</li> </ul>		<p><b>Assessment of Learning:</b> (Impact)</p> <p>Students work on a series of sequential tasks in project booklets, which are monitored and marked regularly, for the duration of the project.</p> <p>Key pieces of work for assessment:</p> <ol style="list-style-type: none"> <li>1. Block Bot Designs</li> <li>2. Evaluation</li> <li>3. Block Bot Final Product</li> </ol> <ul style="list-style-type: none"> <li>o Opportunities for self and peer reflection and assessment</li> <li>o Skills tracker to monitor student progress in key areas</li> <li>o Individual target to link to next project / future learning</li> <li>o Overall grade given in line with assessment criteria</li> </ul>	
<p><b>Reading / Enrichment:</b></p> <p>Chilli Challenge Tasks (VLE)</p> <p><i>100 ideas that Changed Design –</i> Charlotte &amp; Peter Fiell</p> <p><i>The A-Z of Visual Ideas –</i> John Ingledew</p> <p>BBC Teach (YouTube Channel) Design and Technology</p> <p>jamesdysonfoundation.co.uk designcouncil.org.uk designmuseum.org</p>	<p><b>Key Vocabulary:</b> (Literacy)</p> <p>cube, tone, value, scale, laser, render, hammer, clamp, pillar drill, measure, goggles, tenon saw, bench vice, belt sander, machinery, soldering iron, isometric, oblique, projection, annotation</p>	<p><b>Numeracy Opportunities:</b></p> <ul style="list-style-type: none"> <li>o Measuring</li> <li>o Isometric Drawing</li> <li>o Shapes and Forms</li> </ul>	<p><b>Career Links:</b></p> <ul style="list-style-type: none"> <li>o Electronics</li> <li>o Carpentry</li> <li>o Model Making</li> <li>o Product / Graphic Design</li> </ul>