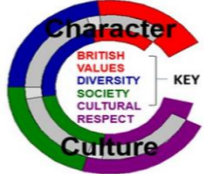


# DESIGN AND TECHNOLOGY

[LINK:](#)

YEAR 8 – Electronics Unit – Steady Hand Game (KS3) – 8 weeks – 1 lesson per week									
INTENT:		The bigger picture:							Character & Culture
To play a part in developing knowledge and understanding of the Design and Technology National Curriculum. <b>Students are to...</b> develop an understanding of how to work safely with tools, equipment, and materials within the electronics workshop.		This scheme plays an important role within the technology curriculum as it is essentially teaching skills from the National Curriculum and preparing students for the challenges of key stage 4.  <b>The Next Step:</b> This unit is preparation for the Engineering Design Course at Key stage 4. It focusses predominantly on Unit R108 / R040 which is based upon the manufacture of an engineered product.							 <p>* Link to C&amp;C</p>
Lesson	1	2	3	4	5	6	7	8	
Revise in 5:	How may you get hurt using a soldering iron and pillar drill? What precautions can be taken to reduce these from happening?	List the stages for soldering a component into a circuit.	Draw the 3d shape on the board? Why are we drawing this shape?	Identify each component on the circuit diagram. What does each component do?	List the tools used in the project. Explain what each tool does.	Spelling and definitions test.	Identify each stage of soldering. List the 4 main tools used in the project.	Explain what you'd do differently if you were to do the project again.	
Objective: I do, we do & you do...	Soldering Students learn how to solder components into their steady hand game circuits. Students mark out the hole positions for their backboards. N.C link <b>MAKE</b> - select from and use a range of tools and equipment to perform practical tasks.	Students continue with their circuit looking at how to solder the LED into it. They also learn how to attach fly-leads to the switch. N.C. link <b>DESIGN</b> - Develop and communicate design ideas using annotated sketches, detailed plans, 3D and mathematical modelling.	To understand how to communicate 3D ideas through Isometric drawing and rendering. To explain the purpose of the game through annotation. N.C. link <b>DESIGN</b> - Develop and communicate design ideas using annotated sketches, detailed plans, 3D and mathematical modelling.	To understand the purpose of a the components in the circuit. To make the handle for the game. To continue with the soldering of their circuit. N.C link <b>TECHNICAL KNOWLEDGE</b> - understand how more advanced electrical and electronic systems can be powered and used in their products. N.C link <b>MAKE</b> - select from and use a range of tools and equipment to perform practical tasks	To continue with the soldering of their circuit. N.C link <b>TECHNICAL KNOWLEDGE</b> – 1. understand how more advanced electrical and electronic systems can be powered and used in their products N.C link <b>MAKE</b> - select from and use a range of tools and equipment to perform practical tasks	To understand how to assemble and realise design ideas. (Assembly of PCB to MDF frame) (Designs drawn onto MDF and neatly presented using previous rendering techniques). N.C link <b>MAKE</b> - select from and use a range of tools and equipment to perform practical tasks	To understand sustainability within electrical products To understand the role that designers can play in improving sustainability. (6 Rs, Life cycle) (Single lesson) <b>EVALUATE</b> 2. understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists	To understand how to test the product and evaluate against the specification. N.C link - <b>EVALUATE</b> test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups	
	CROSS CURRICULAR LINKS:	<ul style="list-style-type: none"> <li>ART - Designing of the product links to art.</li> <li>SCIENCE - Learning about the electronic component's links to science</li> </ul>							
	LESSON STRUCTURE:								
	<ul style="list-style-type: none"> <li>ALL lessons will use the whole school strategy I DO, WE DO, YOU DO</li> <li>ALL lessons will have a retrieval task that engages learners immediately after arrival. In practical settings this may not use a PowerPoint.</li> <li>All lessons will have a period of SILENT STUDY.</li> <li>All lessons will have Learning objectives visible.</li> </ul>								
	(TOPIC SHEET INFORMATION)								
	WHAT SKILLS WILL BE DEVELOPED:								
	<ul style="list-style-type: none"> <li>Students are to... develop an understanding of how to work safely with tools, equipment and materials within the electronics workshop.</li> </ul>								
	WHY WE ARE LEARNING THIS:								
	<ul style="list-style-type: none"> <li>To further develop an understanding of health and safety within a workshop.</li> <li>To develop a range of practical skills which help us create an electronic product.</li> <li>To learn about a range of electronic components and tools.</li> </ul>								
	HOW TO BECOME AN EXPERT IN THIS TOPIC:								
	<ul style="list-style-type: none"> <li>Constructing an electronics kit at home.</li> </ul>								
Silent Study:	B M E	B M E	B M E	B M E	B M E	B M E	B M E	B M E	
Assessment							INPUT GRADES	FAR	
Homework		Spelling Test				Spelling Test			
<b>Literacy:</b> 2 for 2/3 for 3	2 for 2 and 3 for 3 – Within the unit of work teachers use educational and subject specific key literacy. Key Vocab words and key pictures – Each unit of work has a handout including all key terms, words, tools and materials. – (See whole year group mapping)								
Connected Knowledge	This is a unit designed to... prepare students for the future of design and technology at Bilton School as having electronics skills is a priority and can play a part of the future curriculum. Following this it supports the journey into KS4 and 6th form Art and Design. Across the school this supports the Science and Maths departments as these skills are transferable and are beneficial in their curriculum plans also. Beyond school, the world of work is becoming more increasingly automated, and we are in an area of the country with a huge amount of engineering companies and potential future jobs. CAD/CAM is a perfect steppingstone to further education, apprenticeships, and university.								
Cultural Capital	<b>Electronics in Local Industries:</b> Electronics projects fit within year 7,8 and 9, creating a lamp, a steady hand game and an amplifier. Understanding the application of electronics in local industries, such as motorsports, electrical engineering and automotive engineering, provides students with essential practical knowledge, enhancing their ability to connect classroom learning to real-world applications.								
IMPACT	Students measure progress using the department F.A.R tracking sheets which are in the Assessment Booklets, Teachers track the marks given using the department shared mark book and SIMS. This will show progress over time and prepare students for future learning at Bilton School.								