


DESIGN AND TECHNOLOGY

[LINK](#)

YEAR 8 – Resistant Materials - Pinball (KS3) – 8 weeks									
INTENT: To play a part in developing knowledge and understanding of the Design and Technology National Curriculum. Students are to understand, apply and create a mechanical, authentic, and working pinball toy using woodworking skills.		The bigger picture: 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. The Next Step: This unit is preparation for the Engineering Design Course at Key stage 4. It focusses predominantly on Unit R107 / R039 which is based upon designing ideas using CAD Software.						 <p>* Link to C&C</p>	Character & Culture Character and Culture is embedded within the curriculum map and coded as shown.
Lesson	1	2	3	4	5	6	7		8
Retrieval Task:	Health and safety	PPE	Joining	Gluing	Designing strategies	Improvements	Sky blue thinking	Iterative design process	CROSS CURRICULAR LINKS: <ul style="list-style-type: none"> MATHS - Maths is one of the most important subjects to link with D&T. ART - Model making plays a key role in the art curriculum and if you link art with technology it leads to many careers. LESSON STRUCTURE: <ul style="list-style-type: none"> ALL lessons will use the whole school strategy I DO, WE DO, YOU DO ALL lessons will have a retrieval task that engages learners immediately after arrival. In practical settings this may not use a PowerPoint. All lessons will have a period of SILENT STUDY. All lessons will have Learning objectives visible. (TOPIC SHEET INFORMATION) WHAT SKILLS WILL BE DEVELOPED: <ul style="list-style-type: none"> Students are to... understand, apply and create using wood working skills. They will make a phone stand out of pine and acrylic. WHY WE ARE LEARNING THIS: <ul style="list-style-type: none"> To understand how to use tools and equipment safely. To become accurate and precise when working with the materials (wood and plastic) To create your own unique design when making a tablet stand. HOW TO BECOME AN EXPERT IN THIS TOPIC: <ul style="list-style-type: none"> Watch this YouTube clip to stretch yourself –Woodworking for Beginners 04 - Finger (Box) joints – YouTube Read this book from Amazon - All New Woodworking for Kids by Kevin McGuire. Practice marking and cutting out wood by finding a project/plans online to make a product such as a bird box
Objective: I do, we do & you do...	Health & Safety in the workshop. Introduction to the brief. Mark out comb joint.	Cutting out & Design ideas	Cutting out and gluing and filling.	Cutting out and gluing and filling.	Shaping acrylic	Personalisation, attach stand to base.	Finishing, quality finish.	Assembly & evaluate.	
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						FAR 1	INPUT GRADES	End of year ASSSSMENT	
Homework		Spelling Test				Spelling Test			
Literacy: 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)								
Cultural Capital	Regional Engineering Heritage: Exploring the contributions of the West Midlands to engineering, particularly in automotive and manufacturing sectors, equips students with essential historical and technical knowledge, aligning with the goal of expanding students' understanding beyond their everyday experiences. (Engineering is taught through a mechanical toy project that gives students an insight into a designing and engineering job. (Mr Marston is an ex-product designer and the project is an excellent showcase of this)								
Connected Knowledge	This is a unit designed to... prepare students for the future of design and technology at Bilton School as having CAD/CAM skills is a priority and plays a big 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 Maths, ICT and Art departments as these skills are transferable and are beneficial in their curriculum plans. 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.								
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.								