

Year: 9 DT carousel

Subject: Design and Technology

Materials		
Overarching Topic:		
What has come before and what comes later:	<p>During Year 8, students gained experience in the use and application of woods, plastics and electronics by designing and manufacturing an LED desk light. They experienced working with hand tools (coping saw, Tenon saw, soldering irons, file), machinery/equipment (scroll saw, pillar drill/hand drill) and CAD/CAM (2D Design/laser cutter). Students will rotate half yearly (February) to experience materials and graphic materials.</p> <ul style="list-style-type: none"> Materials rotation – students develop knowledge of materials and processes and demonstrate skill producing a passive amplifier inspired by the work of others. Graphic materials - students develop knowledge of graphics design/make processes and demonstrate skill via the production of an automated movie display stand. 	
	Core	Extension
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	<ul style="list-style-type: none"> Name a specific designer and explain their design style Name a specific product that has been designed by your designer of choice and evaluate it considering form and function. What is the benefit of considering the work of other designers / manufacturers? Explain what methods of construction are best for your passive amplifier and why. Explain and demonstrate the application of a suitable finish on your passive amplifier. Explain the impact of your chosen materials on the environment. 	

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	<ul style="list-style-type: none"> • Demonstrate and explain how to mark out accurately in wood. • Demonstrate and explain how to produce a finger joint with precision. • Demonstrate and explain how to create a simple LED circuit. • Explain what lighting options are available and what would best suit certain environments. • Explain the environmental impact of single use batteries. • Why are LEDs becoming a popular alternative to traditional filament light bulbs? • Outline the advantages of designing using CAD. • Identify the best method of joining varying wooden products together. • Explain the importance of applying finishes to products. 	
	Skill/Technique	How students will develop and demonstrate this
Key skills	<p>Marking out and cutting out Butt, lap and finger joints using correct tools and equipment.</p> <p>Soldering a complete LED circuit that works and able to trouble shoot own problems.</p> <p>CAD -Designing own designs/vectorising images and using templates</p>	<ul style="list-style-type: none"> • Through the successful manufacture of an LED light.

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Graphic Materials		
Overarching Topic:		
What has come before and what comes later:	<p>Students will rotate half yearly (February) to experience materials and graphic materials.</p> <ul style="list-style-type: none"> Materials rotation – students develop knowledge of materials and processes and demonstrate skill producing a passive amplifier inspired by the work of others. Graphic materials - students develop knowledge of graphics design/make processes and demonstrate skill via the production of an automated movie display stand. 	
	Core	Extension
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	<ul style="list-style-type: none"> Demonstrate and explain how to create accurate designs using 2D design. Explain the importance of knowing your target user when designing. Explain the importance of product analysis when designing new products. Why and how are barcodes used? Explain how a QR code differs from a bar code. Explain the importance of brand identity. Explain and demonstrate how to design, cut and assemble nets with skill and accuracy. Explain what makes a good logo. Explain the importance of using a specification when designing. What impact does your board game have on the environment? How could you reduce the impact of your board game in the environment? 	<ul style="list-style-type: none"> What is sustainability and why is it important?

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	<ul style="list-style-type: none"> • Demonstrate skills in design and modelling out of card, woods and plastics • Experiment with mechanisms and levers • Know how cams and levers affect the movement of their movie display standees • Use computer software to design and manipulate images to create their movie display standees • Create final movie display standees with moving mechanisms from wood and plastic • Explain what tools and equipment they will need and why • Explain what adhesives they will use in their project • Explain how they could automate their movie display standees 	
	Skill/Technique	How students will develop and demonstrate this
Key skills	Using tools accurately and for the correct process Use of Desk Top Publishing Use of Illustrator	<ul style="list-style-type: none"> • By practicing a range of processes and producing a range of promotional products to reflect the skills taught. • Knowledge evidenced through Q&A and on worksheets