

Key Stage 3 Curriculum Progress Map: Year 7 Design Technology

Topic Titles	Project 1: Structures				Project 2: Key Skills				Project 3: Electronics				
	Bridge Design: Structures & Forces				Jigsaw and Keyring: Timbers & Plastics				Door Hanger: Circuits & Photoshop				
	Knowledge and Understanding	Skills	Literacy	Numeracy	Knowledge and Application	Skills	Literacy	Numeracy	Knowledge & Understanding	Skills	Literacy	Numeracy	
ASSESSMENT CRITERIA	1	<ul style="list-style-type: none"> Recognise and differentiate between the four bridge types: Suspension, Beam, Truss and Arch. Learn: 'A structure is something that will support an object or a load'. 	<ul style="list-style-type: none"> Work co-operatively in a group, developing communication and listening skills. You can plan and organise resources and materials effectively. 	Spelling, punctuation and grammar is used accurately to improve sentence structure.	To be able to measure accurately in both CM and MM.	<ul style="list-style-type: none"> Understand that materials are chosen and classified according to their properties and characteristics. Learn and identify a range of tools and understand their usage. 	<ul style="list-style-type: none"> Select the relevant personal protective equipment (PPE) for the task. Identify hazards in a practical classroom and assess the risks 	Spelling, punctuation and grammar is used accurately to improve sentence structure.	Use templates and patterns to accurately measure and mark out.	<ul style="list-style-type: none"> Understand and explain how a simple circuit works using current. Learn why universal symbols are used in circuit diagrams. 	<ul style="list-style-type: none"> Select the relevant personal protective equipment (PPE). Identify Hazards in a practical classroom and asses the risks. 	Spelling, punctuation and grammar is used accurately to improve sentence structure.	To be able to measure accurately in both CM and MM.
	2	<ul style="list-style-type: none"> Learn and understand that there are natural and manmade structures. Identify at least two. Describe and give examples of a shell structure. Describe and give examples of a frame structure. Describe and give examples of a mass structure. 	<ul style="list-style-type: none"> Apply knowledge learnt in lessons of bridge types to the design of your bridge. Design and create a bridge that meets the location needs. Work within a budget and keep a weekly costings sheet. Self-motivate, time management – set goals and targets. 	Use subject specific key words and language appropriate to both written and oracy tasks.	To be able to calculate totals and to work out the 'mean' average.	<ul style="list-style-type: none"> Describe the properties of thermoset plastics and understand how and where they are used. Learn the properties of softwoods and give examples. Learn the properties of hardwoods and give examples. Learn properties of manufactured boards and give examples. 	<ul style="list-style-type: none"> Identify and select the relevant tools for the task. Use a flat file accurately with precision and quality. Use a tri square to measure and mark out accurately. Use a coping saw accurately with precision and quality. 	Use subject specific key words and language appropriate to both written and oracy tasks	Use a combination of measuring and marking out skills using mm.	<ul style="list-style-type: none"> Learn and describe the function of a battery and identify its universal symbol Learn and describe the function of a switch and identify its universal symbol Learn and describe the function of a buzzer and identify its universal symbol 	<ul style="list-style-type: none"> Identify and select the relevant tools for the task. Understand impact of electronic waste to the world around them and suggest alternative sources. Work safely in a practical classroom, following the 'Passport to Safety' document. 	Use subject specific key words and language appropriate to both written and oracy tasks.	Understand the advantage of tessellating patterns in order to minimise waste of material.
	3	<ul style="list-style-type: none"> Identify and describe the tension and compression forces that act upon a structure. Identify and describe the torsion force that acts upon a structure. 	<ul style="list-style-type: none"> Work safely in a practical classroom, following the 'Passport to Safety' document. Able to select the relevant tool for the task required. 	Write coherent paragraphs using a range of discourse markers (linking words).	Be able to calculate quantities of materials, costs and sizes.	<ul style="list-style-type: none"> Describe the properties of thermoplastics and understand how and where they are used. Describe the properties of MDF. 	<ul style="list-style-type: none"> Identify areas for improvement during practical lessons. Quality control work as you go along. 	Write coherent paragraphs using a range of discourse markers (linking words).	Be able to draw accurately, following given dimensions.	<ul style="list-style-type: none"> Learn and describe the function of a resistor and identify its universal symbol. Learn and describe the function of an LED and identify its universal symbol. 	<ul style="list-style-type: none"> Learn and understand the process of sublimation printing and how it is used commercially. Draw an accurate circuit diagram on the back of your door hanger using universal symbols. 	Write coherent paragraphs using a range of discourse markers (linking words).	Understand the basics of computer control (input, process and output).
	4	<ul style="list-style-type: none"> Identify and describe shear and bending forces that act upon a structure. Understand the term triangulation and explain use in truss bridges. Apply knowledge of forces to the design of your bridge. 	<ul style="list-style-type: none"> Identify areas for improvement and suggest alternative methods, materials and designs. Apply knowledge of structures to the world around them. Identify problems in your design and suggest ways to improve it. 	<ul style="list-style-type: none"> Write in full sentences giving reasons and justifications for your answers (explaining why). Retrieve information and meaning from written texts to understand what is being read. 	Use a costing sheet to track income and expenditure of budget.	<ul style="list-style-type: none"> Describe the properties of acrylic. Learn a range of processes including drilling, cutting, filing sanding (wastage) and bending. Learn the environmental impact of using materials and the FSC. 	<ul style="list-style-type: none"> Apply your understanding of the properties of MDF and acrylic. Work independently during practical lessons, following the demonstration. 	<ul style="list-style-type: none"> Write in full sentences giving reasons and justifications for your answers (explaining why). Retrieve information and meaning from written texts to understand what is being read. 	Calculate areas of a square, rectangle and triangle.	<ul style="list-style-type: none"> Learn and identify tools and equipment used when soldering and describe what they do. Learn how to place, rasterize, free transform and crop in Photoshop. Learn how to work out the value of a resistor using the colour bands. 	<ul style="list-style-type: none"> Use Photoshop independently to blend four images together. Solder independently, following the demonstration in lessons. Identify problems in your design/circuit and suggest ways to improve it. 	<ul style="list-style-type: none"> Write in full sentences giving reasons and justifications for your answers (explaining why). Retrieve information and meaning from written texts to understand what is being read. 	Have an understanding of basic formula in electronics: Ohms Law.