PENTECOST TERM 2 DESIGN AND TECHNOLOGY – Year 5 - Medium Term Planning – Structure Design and build a functional building							
					LESSON 1	LESSON 2	LESSON 3
					STRUCTURES/MATERIALS	EVALUATE STRUCTURES/MATERIALS	STRUCTURES/MATERIALS
LEARNING INTENTION:		LEARNING INTENTION:					
To know that triangular shapes are used	LEARNING INTENTION:	To know that overlapping brickworks					
to create strong frameworks. (Y3 recap)	To know that architecture has developed over time.	creates greater stability.					
To know that columns support		Disciplinary Knowledge:					
frameworks. Disciplinary Knowledge:	<ul> <li>Disciplinary Knowledge:</li> <li>Talk about some key inventors, designers, engineers, chefs.</li> </ul>	<ul> <li>Begin to reinforce and strengthen a 3D frame.</li> </ul>					
<ul> <li>Begin to reinforce and strengthen a 3D frame.</li> </ul>	manufacturers of ground-breaking products.	<b>Aim:</b> Build and apply a repertoire of knowledge, understanding and skills in order to design					
Aim:	Aim:	and make high-quality prototypes and					
Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.	Develop the creative, technical, and practical expertise to perform everyday tasks confidently and to participate successfully in an increasingly technological world.	products for a wide range of users.					
Key Vocabulary: strengthen, stability, diagonal strut, triangular, framework, column, cross braces	Key Vocabulary: culture, architecture, influences, designs, inventions, society	Key Vocabulary: brickwork, layered, overlapped, pattern, interlinked, structural					
Recap & retrieval	Recap & retrieval	Recap & retrieval					

Key Knowledge:	Key Knowledge:	Key Knowledge:
<ul> <li>Child:</li> <li>Support, stiffness and stability can be created by using triangular shapes to create strong frameworks and columns to support roofs.</li> <li>Teacher: <ul> <li>Various methods can be used to support a framework.</li> <li>These include cross braces, guy ropes and diagonal struts.</li> <li>Frameworks can be built using lolly sticks, skewers and bamboo canes.</li> </ul> </li> </ul>	<ul> <li>Child:</li> <li>Culture is the language, inventions, ideas and art of a group of people.</li> <li>Culture affects the design of some products.</li> <li>Many new designs and inventions influenced society.</li> </ul> Teacher: <ul> <li>A society is all the people in a community or group.</li> <li>The ancient Greeks developed the Classical style of architecture.</li> <li>Their temples were made from limestone or marble, and column supported the roofs.</li> <li>The order of a building was determined by the style and design of the columns.</li> <li>Three types of columns were used in ancient Greece: Doric, lonic and Corinthian.</li> </ul>	<ul> <li>Child:</li> <li>Bricks are overlapped due to this pattern of bricks being more stable.</li> <li>Combining different structural methods can improve the strength and stability of a structure.</li> <li>Teacher:</li> <li>Bricks are overlapped due to this pattern of bricks being more stable.</li> <li>You see a brick sitting over the join of two bricks.</li> <li>This helps put weight on two bricks and this interlinking fashion throughout the wall creates a strong wall.</li> <li>Modern building use overlapping brickwork to strengthen the structures.</li> </ul>

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					LESSON 4	LESSON 5	LESSON 6
					DESIGN	ΜΑΚΕ	EVALUATE
STRUCTURES / MATERIALS	STRUCTURES / MATERIALS	STRUCTURES / MATERIALS					
<ul> <li>LEARNING INTENTION: To know that a computer-generated design needs to meet specific criteria for a usable product.</li> <li>Disciplinary Knowledge: <ul> <li>Use computer-aided designs.</li> <li>Begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose.</li> </ul> </li> </ul>	<ul> <li>LEARNING INTENTION: To know that design ideas need to be followed and amended when making a product.</li> <li>Disciplinary Knowledge: <ul> <li>Measure accurately enough to ensure precision.</li> <li>Ensure product is strong and fit for purpose.</li> </ul> </li> </ul>	<ul> <li>LEARNING INTENTION: To know that finished products can be compared with design criteria and can be improved.</li> <li>Disciplinary Knowledge:         <ul> <li>Evaluate ideas and finished product against specification, considering purpose and appearance.</li> <li>Test and evaluate final product.</li> </ul> </li> </ul>					
Aim: Develop the creative, technical, and practical expertise to perform everyday tasks confidently and to participate successfully in an increasingly technological world.	Build and apply a repertoire of knowledge understanding and skills in order to design and make high quality products for a wide range of users.	<ul> <li>Ensure product is strong and fit for purpose.</li> <li>Aim:</li> <li>Critique, evaluate and test their ideas and products and the work of others.</li> </ul>					
Key Vocabulary: Computer aided design (CAD), pattern, software,	Key Vocabulary: structure, build, design, criteria, edit, evaluate, modify, functionality, appearance, accurate, measure	Key Vocabulary: evaluate, positives, negatives, modify, edit, structurally sound.					

Recap & retrieval	Recap & retrieval	Recap & retrieval
Key Knowledge:	Key Knowledge:	Key Knowledge:
<ul> <li>Child:</li> <li>Computer-aided design (CAD) is the use of specialised computer software to design objects.</li> <li>CAD can help designers to create better quality, clearer designs and make changes easily.</li> </ul> Teacher: <ul> <li>A pattern piece is a drawing or shape used to guide how to make something.</li> <li>There are many different computer-aided design packages for designing products.</li> <li>CAD designs can also be made into objects using 3-D printers.</li> </ul>	<ul> <li>Child:</li> <li>Materials should be cut and combined with precision.</li> <li>Structures need to be measured accurately for them to be stable and structurally sound.</li> <li>The CAD should be followed accurately to create the physical stable structure.</li> <li>Teacher:</li> <li>Support, stiffness and stability can be created by using triangular shapes to create strong frameworks, columns to support roofs and overlapping brickwork patterns.</li> <li>You must continue to evaluate how the building process is going and how the design criteria fits with the actual structure.</li> </ul>	<ul> <li>Child:</li> <li>Testing a product against the design criteria will highlight anything that needs improvement or redesign.</li> <li>Changes are often made to a design during manufacture.</li> <li>Teacher:</li> <li>You can test a structure's stability through weight tests and force test such as shake test and hit test.</li> <li>Design criteria can be changed to make the design better and easier to follow.</li> </ul>