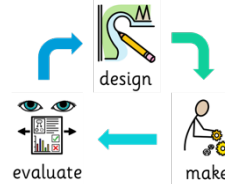
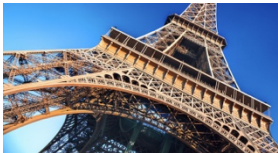
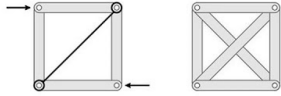
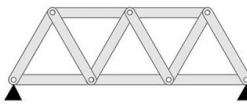
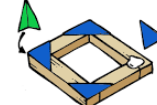
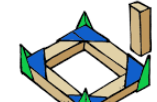
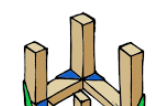




Year 6 – Autumn – Design & Technology – Pupil Knowledge Organiser

WHAT DO I ALREADY KNOW?		WHAT AM I LEARNING NOW?																	
- A freestanding structure is one that stands on its own foundation or base. - As a structure's centre of gravity rises it becomes less stable. - Increasing the base of a structure helps to spread the weight. - Buttresses prevent a structure from collapsing under its own weight. - Frame structures and shell structures can be freestanding.		- What are frame structures? - How are frame structures made? - What makes a successful playground? - Can I apply my knowledge to design a playground? - Can I bring my design to life? - How well did my product meet the design specification? 																	
KEY KNOWLEDGE: FRAME STRUCTURES		DESIGN, MAKE, EVALUATE	KEY VOCABULARY																
Famous frame structures include:  The Eiffel Towers (designed by Stephen Sauvestre).  The Iron Bridge (designed by Thomas Farnolls Pritchard).  Frame structures support larger objects as they can bear weight well.  Diagonal beams (called struts) to are added to square or rectangular structures to create triangles.  Triangulation strengthens a structure by distributing weight effectively and improving rigidity.  Triangulation reduces compression.  It is important to ensure structures have stable joints, otherwise they may fall apart.   Gusset plates, triangle shapes which are connected to the beams, improves stability.  Wood or metal would be best suited to the construction of playground equipment.		In Design and Technology, we follow a process:  design Develop a design specification based on in-depth research.  make Accurately assemble, join and combine materials and components.  evaluate Learn from existing products. Critically assess the success of a product, based on the design specification and the views of others.	<table><tr><td>frame</td><td>A structure made of parts that are joined together and that supports a larger object.</td></tr><tr><td>beams</td><td>A long, strong piece of wood or metal used to support floors, ceilings or roofs.</td></tr><tr><td>compression</td><td>A force. The act of pressing down on or together.</td></tr><tr><td>strut</td><td>A diagonal beam added to structures to improve stability and strength.</td></tr><tr><td>triangulation</td><td>The process of adding struts/diagonal beams to structures, making triangles.</td></tr><tr><td>joints</td><td>A place or point where two or more parts come together or are connected.</td></tr><tr><td>strengthen</td><td>To make something stronger.</td></tr><tr><td>rigidity</td><td>The ability to withstand forces and remain strong/stiff.</td></tr></table>	frame	A structure made of parts that are joined together and that supports a larger object.	beams	A long, strong piece of wood or metal used to support floors, ceilings or roofs.	compression	A force. The act of pressing down on or together.	strut	A diagonal beam added to structures to improve stability and strength.	triangulation	The process of adding struts/diagonal beams to structures, making triangles.	joints	A place or point where two or more parts come together or are connected.	strengthen	To make something stronger.	rigidity	The ability to withstand forces and remain strong/stiff.
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