





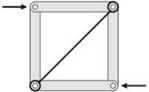

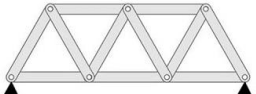

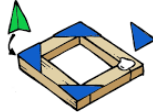
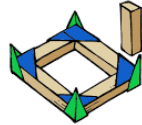
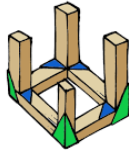





Year 6 – Spring – DT – Pupil Knowledge Organiser



What do I already know?		What am I learning now?	
<ul style="list-style-type: none"> 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. 		<ol style="list-style-type: none"> 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? 	
<p>Key Knowledge: Frame Structures</p> <p>Famous frame structures include:</p>  <p>The Eiffel Towers (designed by Stephen Sauvestre).</p>  <p>The Iron Bridge (designed by Thomas Farnolls Pritchard).</p>  <p>Frame structures support larger objects as they can bear weight well.</p>		<p>Design, Make, Evaluate</p> <p>In Design and Technology, we follow a process:</p>  <p>design</p> <p>Develop a design specification based on in-depth research.</p>  <p>make</p> <p>Accurately assemble, join and combine materials and components.</p>  <p>evaluate</p> <p>Learn from existing products.</p> <p>Critically assess the success of a product, based on the design specification and the views of others.</p>	
  <p>Diagonal beams (called struts) are added to square or rectangular structures to create triangles.</p>  <p>Triangulation strengthens a structure by distributing weight effectively and improving rigidity.</p>  <p>Triangulation reduces compression.</p>		<p>Key Vocabulary</p> <p>frame: A structure made of parts that are joined together and that supports a larger object.</p> <p>beams: A long, strong piece of wood or metal used to support floors, ceilings or roofs.</p> <p>compression: A force. The act of pressing down on or together.</p> <p>strut: A diagonal beam added to structures to improve stability and strength.</p> <p>triangulation: The process of adding struts/diagonal beams to structures, making triangles.</p> <p>joints: A place or point where two or more parts come together or are connected.</p> <p>strengthen: To make something stronger.</p> <p>rigidity: The ability to withstand forces and remain strong/stiff.</p>	
<p>It is important to ensure structures have stable joints, otherwise they may fall apart.</p>    <p>Gusset plates, triangle shapes which are connected to the beams, improves stability.</p>  <p>Wood or metal would be best suited to the construction of playground equipment.</p>			