



Year:	5 and 6	Unit:	Structures
Overview: This unit develops children's understanding of secure structures and introduces them to measuring, sawing and joining wood accurately. After learning about different types of bridges and also exploring how the strength of structures can be affected by the shapes used. Children create their own wooden bridge and test its durability. Design Brief: The children will design a bridge.			

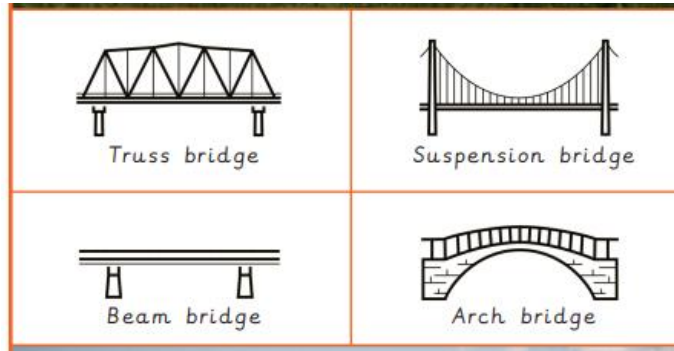
Key Vocabulary		Key skills		
		<i>Design</i>	<i>Make</i>	<i>Evaluate</i>
Accurate	Neat, correct shape, size and pattern with no mistakes	• Designing a stable structure that is able to support weight • Creating frame structure with focus on triangulation	• Making a range of different shaped beam bridges • Using triangles to create truss bridges that span a given distance and supports a load • Building a wooden bridge structure • Independently measuring and marking wood accurately • Selecting appropriate tools and equipment for particular tasks • Using the correct techniques to saws safely • Identifying where a structure needs reinforcement and using card corners for support	• Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary • Suggesting points for improvements for own bridges and those designed by others • Improving a design plan based on peer evaluation • Testing and adapting a design to improve it as it is developed • Identifying what makes a successful structure
Arch bridge	A bridge which is built with a curved edge			
Beam bridge	A bridge which is built with horizontal beams and vertical pillars			
Bench hook	A tool which hooks onto the edge of the workbench. It is used to hold woodwork still when sawing.			
Compression	A squashing force caused when parts of a structure are pushed together			
Coping saw	A saw with a narrow D-shaped metal blade, used for cutting curves in wood			
File	A too used to smooth down rough edges on wood or metal materials.			
Mark out	To measure and mark where a piece of material needs to be cut or shaped			
Reinforce	To make a structure or material stronger, especially by adding another material or element to it.			
Sand paper	Strong paper with sand on one side to smooth or polish woodwork,			

Set square or try square	A right-angel triangular plate, wood or metal took used for drawing lines at 90', 45', 60', or 30'			
Structure	Something which stands, usually on its own.			
Suspension bridge	A bridge which is supported by vertical cables and suspended by cables which run between pillars that are connected onto either end of the bridge.			
Tenon saw	A saw with a flats blade, used for cutting wood in straight lines or angles.			
Truss bridge	A bridge which is built from a series of triangular beams.			

Progression of knowledge and skills in structures

What should I already know? (LKS2)

- Generate and develop realistic ideas and design criteria collaboratively and through analysis of existing products.
- Order the stages of making; selecting tools and using with some accuracy.
- Investigate and evaluate shell structures, and construct strong, stiff shell structures.
- Test and evaluate own products against design criteria and intended user and purpose.



What will I learn in this unit? (UKS2)

- Research user needs and existing products and develop and model innovative ideas into a design specification.
- Formulate a plan with a step-by-step list of tasks and resources.
- Use tools to accurately measure, mark out, cut, shape and join materials to make frameworks.
- Use finishing techniques suitable for the product and critically evaluate their products against a range of criteria.
- Research key events and individuals relevant to frame structures.