Structures

Progression of Knowledge Cycle A

Year R	Year 1	Year 2/3	Year 4/5	Year 6
Junk Modelling *Children will know:* -There are a range to different materials that can be used to make a model and that they are all slightly different. - How to make simple suggestions to fix their junk model.	**Constructing a Windmill** *Children will know:* -Cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses). -Axles are used in structures and mechanisms to make parts turn in a circle. -Different structures are used for different purposes. -A structure is something that has been made and put together. -The sails or blades of a windmill are moved by the wind. - A structure is something built for a reason.	**Constructing a Castle** *Children will know:* -Wide and flat based objects are more stable. -To understand the importance of strength and stiffness in structures. - A façade is the front of a structure. - A paper net is a flat 2D shape that can become a 3D shape once assembled. - A design specification is a list of success criteria for a product.	**Bridges** *Children will know:* - Some different ways to reinforce structures. - How triangles can be used to reinforce bridges. - Properties are words that describe the form and function of materials. - Why material selection is important based on properties. - To understand the material (functional and aesthetic) properties of wood. - The difference between arch, beam, truss and suspension bridges. -How to carry and use a saw safely.	**Playground** *Children will know:* -Structures can be strengthened by manipulating materials and shapes. -What a 'footprint plan' is. - In the real world, design, can impact users in positive and negative ways. - That a prototype is a cheap model to test a design idea.

	- Stable structures do not topple. -Adding weight to the base of a structure can make it more stable. - The three main parts of a windmill are the turbine, axle and structure.			

Structures Progression of Knowledge Cycle B				
Year R	Year 1	Year 2/3	Year 4/5	Year 6
As above	As above	Baby Bear's Chair <u>*Children will know:*</u> -That shapes and structures with wide, flat bases or legs are the most stable. -The shape of a structure affects its strength. - Materials can be manipulated to improve strength and stiffness. - A structure is something which has	Pavilions <u>*Children will know:*</u> -What a frame structure is. -A free-standing' structure is one which can stand on its own. -A pavilion is a decorative building or structure for leisure activities. -Cladding can be applied to structures for different effects.	As above

		been formed or made from parts. - A 'stable' structure is one which is firmly fixed and unlikely to change or move. -A 'strong' structure is one which does not break easily. - A 'stiff' structure or material is one which does not bend easily.	-That aesthetics are how a product looks. -A product's function means its purpose. The target audience means the person or group of people a product is designed for. -That architects consider light, shadow and patterns when designing.	