

Year Group: Years 3 & 4 : Design & Technology (Shell, solid and combination structures) Summer A2

Year group:	Years 3 & 4	Term:	SUMMER 2	Theme:	Investigating structures		
Prior learning					Cross-curricular and visits/visitors		
Children know the names of 3D shapes and their properties Children understand the term 'deconstruct' and how this process helps to understand the construction of an object Children know that for an object to be solid they are a solid material all the way through.					History: Romans		
					New Vocabulary		
					structure	An object constructed of several parts	
					Shell structure	Hollow structure with a thin, strong outer coating.	
					Corrugated	A material shaped into a series of ridges to give extra strength	
					Ribbed	Material shaped into a series of parallel ribs to strengthen it	
					Laminated	Overlay paper with a layer of plastic or protective material	
					Product analysis	Look at an existing product to find out more about it	
					User suitability	How well a product is designed for the intended user	
					annotations	comment added to a text or diagram	
					prototype	A first version of a device	
Knowledge							
- A shell structure is a hollow structure with a thin outer layer. - Know that cardboard is strengthened to become more rigid in three different ways: laminated, ribbed or corrugated. - Know the location of the following landmarks and their structural form; Eiffel Tower, Sydney Opera House Colosseum, Pyramids of Giza, Stonehenge and Golden Gate Bridge. - Know the meaning of the taught new vocabulary. - Understand the purpose of a tab on a 3D net construction. - Know that a design brief is a description of the product we will design. It states how a product will function to meet the needs of its user. - Know that annotations help to explain the purpose of the product. - Know that user suitability refers to how well a product is designed for the intended user.							
Skills					Revised Vocabulary		
- Be able to deconstruct a simple shell structure to explore and better understand how it has been made (identifying the net shapes these create). - Discuss the styles of designers and use this to inform their own work. - Investigate key events and individuals in design and technology. - Sketch ideas for a 3d structure using clear annotation relating to the product specifics. - Develop more than one design or adaptation of an initial design and decide which to develop. - Select materials according to their functional properties. - Create a prototype of a product.							
					shell	cylinder	strong
					solid	deconstruct	tab
					cuboid	net	product
					prism	rigid	function
					faces	design features	sketch
					evaluate	unique	

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| <ul style="list-style-type: none">• Select from a range of tools for cutting, shaping, joining and finishing a product.• Select from materials according to their functional properties.• Where appropriate strengthen frames with diagonal struts.• Use knowledge of 3D shape construction to create effective cuboid, cube, pyramid and prism nets.• Use prototypes to develop and share ideas.• Consider and explain how the finished product could be improved.• Discuss how well the finished product meets the user's design criteria.• Identify the strengths and weaknesses of their design ideas in relation to purpose / user.• Consider aesthetic qualities of materials chosen. | |
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