



Skills and Knowledge progression Design Technology Structures

Skills		Year 2	Year 3	Year 6
	Design	<p>Generating and communicating ideas using sketching and modelling.</p> <p>Learning about different types of structures, found in the natural world and in everyday objects.</p>	<p>Designing a castle with key features to appeal to a specific person/purpose.</p> <p>Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours.</p> <p>Designing and/or decorating a castle tower on CAD software.</p>	<p>Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs.</p>
	Make	<p>Making a structure according to design criteria.</p> <p>Creating joints and structures from paper/card and tape.</p> <p>Building a strong and stiff structure by folding paper.</p>	<p>Constructing a range of 3D geometric shapes using nets.</p> <p>Creating special features for individual designs.</p> <p>Making facades from a range of recycled materials.</p>	<p>Building a range of play apparatus structures drawing upon new and prior knowledge of structures.</p> <p>Measuring, marking and cutting wood to create a range of structures.</p> <p>Using a range of materials to reinforce and add decoration to structures.</p>



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	Evaluate	<p>Exploring the features of structures.</p> <p>Comparing the stability of different shapes.</p> <p>Testing the strength of own structures.</p> <p>Identifying the weakest part of a structure.</p> <p>Evaluating the strength, stiffness and stability of own structure.</p>	<p>Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design.</p> <p>Suggesting points for modification of the individual designs.</p>	<p>Improving a design plan based on peer evaluation.</p> <p>Testing and adapting a design to improve it as it is developed.</p> <p>Identifying what makes a successful structure.</p>
Knowledge	Technical	<p>To know that shapes and structures with wide, flat bases or legs are the most stable.</p> <p>To understand that the shape of a structure affects its strength.</p> <p>To know that materials can be manipulated to improve strength and stiffness.</p> <p>To know that a structure is something which has been formed or made from parts.</p> <p>To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.</p> <p>To know that a 'strong' structure is one which does not break easily.</p> <p>To know that a 'stiff' structure or material is one which does not bend easily.</p>	<p>To understand that wide and flat based objects are more stable.</p> <p>To understand the importance of strength and stiffness in structures.</p>	<p>To know that structures can be strengthened by manipulating materials and shapes.</p>



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	Additional	<p>To know that natural structures are those found in nature.</p> <p>To know that man-made structures are those made by people.</p>	<p>To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose.</p> <p>To know that a façade is the front of a structure.</p> <p>To understand that a castle needed to be strong and stable to withstand enemy attack.</p> <p>To know that a paper net is a flat 2D shape that can become a 3D shape once assembled.</p> <p>To know that a design specification is a list of success criteria for a product.</p>	<p>To understand what a 'footprint plan' is.</p> <p>To understand that in the real world, design, can impact users in positive and negative ways.</p> <p>To know that a prototype is a cheap model to test a design idea.</p>
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