

Knowledge Organiser

Subject: Design & Technology

Unit: Stable Structures

Overview		
Children will be learning about structures. They will be looking at what makes a structure strong, stable etc. Children will design and build their own structure. They will evaluate how successful they have been.		
What should I already know?	Vocabulary:	
Design <ul style="list-style-type: none"> Can identify the key features of an existing product Can make a plan of an existing product and label it Can generate ideas for different ways of strengthening models to make them sturdy Can say whether their models are strong or not. Can make a labelled plan of their design and list the tools and materials they need. Make <ul style="list-style-type: none"> Can cut out using scissors Can follow a design to make a piece of playground equipment Can join materials together to make a sturdy structure Working with tools <ul style="list-style-type: none"> Join two pieces of paper/card together with glue and tape Can select appropriate and tools and use them safely Evaluate <ul style="list-style-type: none"> Can identify what has gone well with their product. Can say how they could improve their work Say what they like and feel about their own work Can say what they like about others' work and give them positive feedback (I like.....about your product) Technical Knowledge <ul style="list-style-type: none"> Know that to make a structure more stable it needs reinforcing e.g., more tape to hold it together 	construct investigate design evaluate communicate man-made natural resource strengthen stability Stiffer	to build something to find out information about something a set of instructions to make a product to make a judgement to share thoughts and ideas using drawings, speech and words made by items that are not natural resources which are used from the planet, i.e. wood, coal, gas to make stronger to stand without being able to fall over not easily bent or changed in shape
What will I know by the end of the unit?		



<p>Design</p> <ul style="list-style-type: none"> • Can evaluate an existing product by saying <ul style="list-style-type: none"> ○ How it is useful ○ How it works ○ Whether they like it and why. • Can make a plan for a structure that is stable • Can investigate how materials can be made stronger e.g., folding, layering and rolling paper and card and testing them for strength • Can communicate their ideas and plan by describing them to someone else • Can state the purpose of their design • Can select the appropriate materials and explain their choices <p>Make</p> <ul style="list-style-type: none"> • Can join, fold or roll to make a structure stronger • Can follow a design plan • Can fold, roll and layer to make a sturdy structure • Can make a (toy) garage that is stable <p>Working with tools</p> <ul style="list-style-type: none"> • Can join card and paper using glue and selloptape. • Can use tools such as scissors, glue spreaders, tape dispensers accurately <p>Evaluate</p> <ul style="list-style-type: none"> • Can use like and dislike when evaluating their garage • Can recognise what they have done well and talk about what could be improved • Can assess how well their product works • Predict how changes will improve the finished product <p>Technical Knowledge</p> <ul style="list-style-type: none"> • Know that materials have different properties including rigidity, flexibility, length, width, thickness • Know that to make a structure more stable it can be reinforced through rolling, folding, layering, gluing and taping 	<p>properties</p>	<p>A thing or things that make up a specific product</p>
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Stable structures- by the end of the unit children: -

Construction

- Will know how they make a stable structure by following a set of instructions
- Will describe the materials they have used and why they have chosen them using different words
- Be able to use their knowledge to design a product according to a design brief
- Be able to make their product using their design and knowledge of materials and mechanism
- Will be able to say why they have chosen particular parts, explain their function and how they work together in their final product

Developing, Planning and Communicating Ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
<ul style="list-style-type: none"> • Can they generate ideas through comparing existing products? • Can they plan a product? • Can they choose the most appropriate tools and materials and explain their choices? • Can they describe their design by using pictures, diagrams, and words? 	<ul style="list-style-type: none"> • Can they join materials/ components together in different ways? • Can they measure materials to use in a model or structure? • Can they use joining, folding or rolling to make it stronger? 	<ul style="list-style-type: none"> • Can they assess how well their product works? • If they did it again, can they explain what they would improve?
DESIGN AND DEVELOP	MAKING	PRODUCT AND EVALUATION
<ul style="list-style-type: none"> • Generate ideas, and plan what to do next, using their experience of materials and components • Use their knowledge of some working characteristics of materials when designing • Use wheels, slides and levers in plans • Use plans to show how to put their ideas into practice • Say how the product will be useful to the user • Draw pictures with labels, with some text 	<ul style="list-style-type: none"> • Begin to select tools for folding, joining, rolling • Measure out and cut fabric • Use a simple template for cutting out • Practise skills before using them • Use simple finishing techniques • Select tools and techniques appropriate to the job • Follow basic safety rules 	<ul style="list-style-type: none"> • Talk about how moving objects work • Describe how a commercial product works • Use like and dislike when evaluating or describing • Explain why some products are useful • Use digital photography to present design or finished work • Recognise what they have done well and talk about what could be improved • Seek out the views and judgements of others • Predict how changes will improve the finished product
Children are still learning this information and vocabulary. (working below the expected standard)	Children know this information and vocabulary (at the expected standard)	Children know this information and vocabulary and more (working above the expected standard.)

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