

Design and Technology: Shade and Shelter

<p>Vocabulary</p>	<p>absorbent plastic clay protection den shade design criteria shelter durable stone fabric strong flexible tarpaulin glass temporary material transparent metal warmth opaque waterproof permanent wood</p>	<p>Prior Learning</p>	<p><u>Investigation:</u> There are different ways to join materials together. <u>Evaluation:</u> Recognise that it is possible to change and alter their designs and ideas as they are making them. <u>Materials for purpose:</u> Different materials are suitable for different purposes, such as construction kits for modelling and ingredients for baking.</p>
<p>Know It: essential knowledge</p>	<ul style="list-style-type: none"> • Shade is created when sunlight is blocked by an object. • Humans and animals need shade for protection from strong sunlight. • Shelter is created by a structure when it protects a living thing from the weather or danger. • Humans and animals need shelter for warmth and safety. • There are many different types of human-made shelter. • Some shelters are permanent, such as a house or garage. • Other shelters are temporary, such as a tent. <p>Shelters must:</p> <ul style="list-style-type: none"> • be sturdy and strong, so they do not blow over • have a covering that protects people and animals from the weather or danger • have a way to get in and out 		
<p>Think It:</p>	<p>RUAH</p> <p>Working together as a team: respect and affection.</p>	<p>Oracy</p> <p>Pitch designs to staff - explanations. Evaluation: what went well and what could be improved?</p>	<p>Discernment</p> <p>What is the best way to build a den? What would happen if the den collapsed? What do you think life is like for people who have no den or home?</p>
<p>Prove It: (assessment)</p>	<p>Evaluating their design:</p> <p>Is your play den strong and stable? Does your play den protect children from the weather? Can a group of four children fit inside? Does your play den look inviting? <i>Our play den worked well because.....</i> <i>We could make our play den better by.....</i></p>		
<p>Beyond Year 2</p>	<ul style="list-style-type: none"> • Particular products are designed for specific tasks. For example designing a product to help grow plants will require certain materials. • Diagonal struts create triangular shapes within a frame structure. • Adding diagonal struts to a frame structure adds strength and stability. • A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthened by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to straighten and strengthen them). 		

OLC learners: know it, show it, think it and prove it

Lesson Sequence	Lesson 1	Engage	Investigating shelters
	Lesson 2	Develop	Properties of materials
	Lesson 3		Designing shelters
	Lesson 4		Building prototype shelters
	Lesson 5	Innovate	Designing a play den
	Lesson 6		Building a play den
	Lesson 7	Express	Evaluation

Show It: design skills and concepts	Topic specific skills	<p>Structures</p> <p>Year 1 Skill: Construct simple structures, models or other products using a range of materials.</p> <p>Year 2 Skill: Explore how a structure can be made stronger, stiffer and more stable.</p>	<p>Everyday products</p> <p>Name and explore a range of everyday products and describe how they are used.</p> <p><i>A shelter is a structure designed to give protection from weather or danger.</i></p>	<p>Materials for purpose</p> <p>Year 2 Skill: Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect.</p> <p><i>Select and use a range of materials, beginning to explain their choices.</i></p>	<p>Generation of ideas</p> <p>Create a design to meet simple design criteria.</p> <p><i>A product or project is usually guided by a set of design criteria.</i></p> <p><i>The project or product must meet the design criteria to be successful.</i></p> <p><i>Generate and communicate their ideas through a range of different methods.</i></p>
	Generic skills	<p>Compare and Contrast</p> <p>Year 1 skill: Describe the similarities and differences between two products.</p> <p>Year 2 Skill: Compare different or the same products from the same or different brands.</p>	<p>Investigation</p> <p>Year 3 Skill: Use tools safely for cutting and joining materials and components.</p> <p>Year 4 Skill: Select, name and use tools with adult supervision.</p>	<p>Staying Safe</p> <p>Year 1 Skill: Follow the rules to keep safe during a practical task.</p> <p>Year 2 Skill</p> <p>Work safely and hygienically in construction and cooking activities.</p> <p><i>Rules are made to keep people safe from danger.</i></p> <p><i>Safety rules include always listening carefully, following instructions and using equipment only when told to.</i></p>	<p>Evaluation</p> <p>Year 2 Skill: Explain how closely their finished products meet their design criteria and say what they could do better in the future.</p> <p><i>Talk about their own and each other's work, identifying strengths or weaknesses and offering support.</i></p> <p><i>A strength is something that is good about a piece of work.</i></p> <p><i>A weakness is an area that could be improved.</i></p>