


## Knowledge Organiser

**Subject: Design & Technology      Unit: Photograph Frames**

Overview:		
Children will be learning about free standing structures and what makes them strong and stable. They will be experimenting with strengthening card and paper. They will design and make their own photo frame and evaluate whether it matches their design.		
What should I already know?	Vocabulary:	
<p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Can evaluate an existing product by saying               <ul style="list-style-type: none"> <li>○ How it is useful</li> <li>○ How it works</li> <li>○ Whether they like it and why.</li> </ul> </li> <li>• Can make a plan for a structure that is stable</li> <li>• Can investigate how materials can be made stronger e.g., folding, layering and rolling paper and card and testing them for strength</li> <li>• Can communicate their ideas and plan by describing them to someone else</li> <li>• Can state the purpose of their design</li> <li>• Can select the appropriate materials and explain their choices</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Can join, fold or roll to make a structure stronger</li> <li>• Can follow a design plan</li> <li>• Can fold, roll and layer to make a sturdy structure</li> <li>• Can make a (toy) garage that is stable</li> </ul> <p><b>Working with tools</b></p> <ul style="list-style-type: none"> <li>• Can join card and paper using glue and selloptape.</li> <li>• Can use tools such as scissors, glue spreaders, tape dispensers accurately</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Can use like and dislike when evaluating their garage</li> <li>• Can recognise what they have done well and talk about what could be improved</li> <li>• Can assess how well their product works</li> <li>• Predict how changes will improve the finished product</li> </ul> <p><b>Technical Knowledge</b></p> <ul style="list-style-type: none"> <li>• Know that materials have different properties including rigidity, flexibility, length, width, thickness</li> </ul>	<p>free-standing</p> <p>purpose</p> <p>wide-base</p> <p>stable</p> <p>sturdy</p> <p>evaluate</p> <p>join</p> <p>strengthen</p> <p>testing</p> <p>range</p> <p>identify</p> <p>compare</p> <p>features</p> <p>design</p> <p>suitable</p>	<p>to stand without any stabilisers or visible support</p> <p>a specific job or goal</p> <p>a base which is wide to enable a structure to be more supported (a pyramid)</p> <p>stands without moving</p> <p>strong</p> <p>to make a judgement</p> <p>to link two or more items together to create a new one.</p> <p>to make stronger to bare a larger load</p> <p>to try in order to modify</p> <p>more than one example</p> <p>to find</p> <p>to look at two things and look at similarities and differences</p> <p>things that make one thing unique or different to others</p> <p>a plan for a product</p> <p>the correct choice of resource</p>

<ul style="list-style-type: none"> <li>• Know that to make a structure more stable it can be reinforced through rolling, folding, layering, gluing and taping</li> </ul>	<p>construct</p>	<p>to build</p>
<p>What will I know by the end of the unit?</p>	<p>specific</p>	<p>targeted at one job or purpose only</p>
<p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Can identify the different components of a photograph frame: - <ul style="list-style-type: none"> <li>○ the frame - made of 4 sides</li> <li>○ glass front</li> <li>○ the backboard</li> <li>○ a stand</li> <li>○ the artwork or picture inside the frame</li> </ul> </li> <li>• Can compare photograph frames and talk about their features</li> <li>• Apply what they know about photograph frames to design a photograph frame that has a stable structure</li> <li>• Can create an accurate labelled diagrams</li> <li>• Identify areas that could be improved upon in their design</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Can follow a design to make a functional and decorative photo frame.</li> <li>• To create a stable structure with paper/card using strengthening techniques.</li> <li>• To create accurate joins using glue and tape.</li> </ul> <p><b>Working with tools</b></p> <ul style="list-style-type: none"> <li>• Can select the most appropriate materials, tools and techniques to use and can use them safely (card, paper, glue, tape, ruler)</li> <li>• Can measure accurately using cm and mm.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Be able to look at a range of existing photo frames and talk about what makes them successful – sturdy, decorative etc.</li> <li>• Recognise what has gone well, but suggest further improvements for the finished article</li> <li>• Suggest which elements they would do better in the future</li> <li>• Can assess how well their product works in relation to the purpose</li> </ul> <p><b>Technical Knowledge</b></p>	<p>exact measurement</p>	<p>using rulers to mark out the precise unit required to follow the design</p>
		

- A wide base makes free standing objects more stable.
- Paper and card can be strengthened by: -
  - Rolling to create poles. Short poles are stronger than long poles
  - Layering and gluing to the required thickness
  - Twisting into tight folds
  - Folding repeatedly to make a strip.



