



## Year 4 Medium Term Planning for the Learning Challenge Curriculum

Term: Summer

DT Project: Kites

<u>Previous Learning</u>	<u>New Knowledge /Consolidation</u>	<u>End of Project Outcome</u>	<u>Environmental Links</u>	<u>Key Inventors/People</u>	<u>Project Vocabulary</u>
<p>Strengthening using cladding (+ introducing rendering) building on the use of tabs &amp; brackets to create a prototype (elf house, photo frame, lunch box). Use of cardboard nets &amp; templates.</p>	<p>Combining materials (Wood, paper, plastic) to create (joining) and strengthen a frame.</p> <p>Application of cladding and rendering.</p>	<p>To measure, cut and join materials with different properties to create a kite that flies.</p>	<p>What is the difference between upcycling and recycling? Discuss how products can be re-purposed Read somebody swallowed Stanley! By Sarah Roberts What else can a plastic bag be turned into? Create a mood board using MS Publisher.</p>	<p>When was the kite invented? Watch a history of kites: <a href="https://www.youtube.com/watch?v=oM2vSWuVGHg">https://www.youtube.com/watch?v=oM2vSWuVGHg</a></p>	<p>Investigate &amp; Compare Preparation CAD (Computer Aided Design) Assemble Components Properties Finish Precision Mark out Reinforce Functional Review &amp; Evaluate Reusable &amp; Recycle</p>

Section	Lesson	Key Skills	Learning Objective & Activity
Explore	1	<ul style="list-style-type: none"> <li>Appreciate how products have evolved over time &amp; some reasons for this.</li> <li>Evaluate existing products based on design, materials, and function</li> </ul>	<p><b><u>To investigate different shaped kites and why they fly.</u></b> Explore examples of different shaped kites. What do they have in common? Discuss how the sheet is slightly larger than the frame to allow air to get trapped. The science of kites: <a href="https://www.youtube.com/watch?v=NEv1HMX73N0">https://www.youtube.com/watch?v=NEv1HMX73N0</a> When was the kite invented? Watch a history of kites: <a href="https://www.youtube.com/watch?v=oM2vSWuVGHg">https://www.youtube.com/watch?v=oM2vSWuVGHg</a> Explore different types of shopping bag (bag for life, biodegradable and paper) – pass round and discuss the advantages of disadvantages of each (e.g. strength, ease of cutting, if it is waterproof).</p>
Plan	1 & 2	<ul style="list-style-type: none"> <li>Use sketches and CAD for clarity.</li> <li>Plan the making process and required materials.</li> <li>Develop a simple design criterion as a class.</li> </ul>	<p><b><u>To consider what materials to use as a frame for a kite and why they are suitable.</u></b> Consider as class what is needed to create a successful kite and create a design criterion. Decide between using straws or wooden skewers to create a frame for a kite.</p>

			<p>Explain why this material has been chosen.          Use PowerPoint template to indicate which materials will be used (straws or wood).          Alter the frame shape (moving cross bar) and use autoshapes to add a sheet.          Reiterate the need to make the sheet larger than the frame then add measurements to reflect this.</p>
<b>Make</b>	<b>3</b>	<ul style="list-style-type: none"> <li>• Test &amp; refine products to see if they work as intended.</li> <li>• Select and combine materials to meet design needs.</li> <li>• Reinforce structures with cladding and rendering.</li> <li>• Measure, mark, cut, and shape materials accurately.</li> </ul>	<p><b><u>To measure, cut and join materials with different properties to create a kite that flies.</u></b>          Use "How to" PowerPoint to follow steps to:          Cut sticks or straws to a chosen size and attach the create a cross frame.          Mark out and measure a carrier bag to create a sheet that is slightly larger than the frame.          Combine materials to attach/join the sheet to the frame – reinforce with cladding and/or rendering.          Attach string and create a handle.          Extension: Shape offcuts of the plastic bag to create a tail.</p> <p>Highlight the difference between our kites and mass produced machine-made examples – stress that variables such as size, weight and positioning will affect performance.</p> <p>Time to be given to test kite outside.</p>
<b>Evaluate</b>  <b>Explore</b>	<b>4</b>	<ul style="list-style-type: none"> <li>• Identify strengths and weaknesses in a product.</li> <li>• Explain what went well and what could be improved.</li> <li>• Apply design criteria to product evaluation.</li> <li>• Begin to appreciate the global impact of using sustainable &amp; recyclable materials.</li> </ul>	<p><b><u>To consider if the kite meets the design criteria, how materials can be upcycled.</u></b>          Revisit key vocab from the project (PPT slide)          How could we improve the kites? What changes did we make? – Mind map as a class          Revisit design criteria and tick off if you kite meets each point (Seesaw template).          Insert a photo of the completed Kite into the Seesaw template.          What is the difference between upcycling and recycling? Discuss how products can be re-purposed          Read somebody swallowed Stanley! By Sarah Roberts          Book or video (Bedtime Stories - <a href="https://www.bbc.co.uk/iplayer/episodes/b00jdlm2/cbeebies-bedtime-stories">https://www.bbc.co.uk/iplayer/episodes/b00jdlm2/cbeebies-bedtime-stories</a>)          What else can a plastic bag be turned into? Create a mood board using MS Publisher.</p>

<b>Substantive Knowledge</b>	<b>Disciplinary Knowledge</b>
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