

Design & Technology

Making a Photo Frame

Year Three

Bishop's Waltham Junior School

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	Learning Objectives	Key Skills	Concepts	Lesson Content
1	<ul style="list-style-type: none"> - To investigate a range of shell structures. 	<ul style="list-style-type: none"> - Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. 	<ul style="list-style-type: none"> - All 3D shapes have been constructed from nets of 2D shapes. - Different materials have different properties and uses. 	<p>What is a shell structure? Explore and evaluate a range of different shell structures. E.g. tetra packs and packaging boxes.</p> <p>How have the structures been constructed? How have the structures been strengthened? Evaluate materials used and methods of strengthening. Which materials do you think are strongest? Why are materials used for fluids different? Fluids are often heavier and the packaging should not leak.</p> <p>Are the materials recyclable or reusable? How has it been stiffened i.e. folded, corrugated, ribbed, laminated? What size/shape/colour is it? What information does it show and why? How attractive is the design?</p>
2	<ul style="list-style-type: none"> - To investigate how 3D shapes are constructed using nets. 	<ul style="list-style-type: none"> - Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas. 	<ul style="list-style-type: none"> - Develop a detailed understanding of 3D shapes and their nets. 	<p>Explore nets / 3d shell structure Link to maths – What are the different shapes called? What 2D faces are they made up from? Different activities for children to explore – creating nets from given templates from card.</p> <p>Demonstrate scoring and accurate cutting techniques. Children to them apply these when creating boxes from their simple nets. Use construction materials / pipe cleaners and art straws to create cuboids, cubes. Challenge some children to see if they can replicate the shape of a photo frame using the art straws and pipe cleaners in the joins.</p>
3	<ul style="list-style-type: none"> - To evaluate a range of existing photo frames. 	<ul style="list-style-type: none"> - To identify the materials, joining 	<ul style="list-style-type: none"> - All products are designed to be fit for purpose and 	<p>Introduce topic and audience. What are we making? Who are we making it for? (Mother's Day gift etc.) What does a photo frame need to have? Look at some existing frames as a whole class.</p>

		techniques and decoration styles of existing frames.	appeal to their user.	<p>How is the photo protected? How does the structure stand up? What materials have been used?</p> <p>Evaluate some different photo frames at tables. Fill in a simple table – listing what the frame is made from, how has it been strengthened?, what joining techniques have been used? How has it been made to look appealing? Encourage children to consider what they like in a photo frame. What will their intended user like in a photo frame?</p>
4	<ul style="list-style-type: none"> - To explore materials, strengthening and joining methods. 	<ul style="list-style-type: none"> - To use equipment sensibly and safely. - To develop skills of scoring, cutting, and joining. - To use more than one technique for each. - To understand how to strengthen, stiffen and reinforce 3D frameworks. 	<ul style="list-style-type: none"> - Different materials and methods of fixing achieve different results. - We need to behave sensibly and follow safety rules to keep ourselves and others safe. 	<p>Focused Task - Joining and strengthening techniques.</p> <p>Look at the materials we have available for use in school – square wood strips, strong card, card corners.</p> <p>How will we cut and join these materials? SAFETY – Explain and demonstrate safe working techniques when using sharp scissors, junior hacksaws etc. How will we protect ourselves and others? Explore safe fixing methods – Which methods are strongest?</p> <p>How can we strengthen the inside of our photo frame? Look at corrugating by folding materials.</p>
5	<ul style="list-style-type: none"> - To design and annotate a photo frame meeting the design brief 	<ul style="list-style-type: none"> • Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. • Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas. 	<ul style="list-style-type: none"> - To understand their design needs to meet the brief and appeal to the user. - Begin to formulate a clear plan – step by step of how they will approach the task. 	<p>Design photo frame</p> <p>Recap work done in previous weeks on strengthening and fixing materials. Read back through design brief – What qualities did we say our photo frame needed to have?</p> <p>Children to draw and annotate pictures of their photo frames.</p> <p>Consider – how have they made their frame appeal to their user / audience? What tools and materials will they need? Children to write a list of these. Are there any extra things they would like to bring in from home?</p>

6	<ul style="list-style-type: none"> - To select and use appropriate tools and materials to make a 3D photo frame. 	<ul style="list-style-type: none"> - Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. • Use finishing techniques suitable for the product they are creating. 	<ul style="list-style-type: none"> - Test and evaluate their own products against design criteria and the intended user and purpose and adapt where necessary when working. 	<p>Making</p> <p>Look at plans created in previous session. What was our design brief? What does the finished product need to be like?</p> <p>SAFETY – recap the safety rules and techniques for the tools being used. SUGGESTED one to one with teaching assistant in separate area when using saw and bench hooks.</p> <p>Order the main stages of making. Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. Explain their choice of materials according to functional properties and aesthetic qualities. Use finishing techniques suitable for the product they are creating.</p>
7	<ul style="list-style-type: none"> - To evaluate their finished product. 	<ul style="list-style-type: none"> - Test and evaluate their own products against design criteria and the intended user and purpose 	<ul style="list-style-type: none"> - To understand a product should be fit for purpose. 	<p>Evaluation</p> <p>Evaluate finished product. Do they feel pleased with it? Does it meet the design specification? Do they think the intended audience will like it? IS there anything they can do to improve it further? If practical, allow children time following their evaluation to make minor changes or adjustments/</p>