



# St Paul's Primary School, Newcastle. Glorifying Almighty God, and serving our community.

TO MASTER PRACTICAL SKILLS		TO DESIGN, MAKE, EVALUATE AND IMPROVE	TO TAKE INSPIRATION FROM DESIGN THROUGHOUT HISTORY
Class: 1/2 AUTUMN			Title: Materials
<p><b>Topic summary:</b> A solid structure is one that is made from either one solid object or lots of solid objects joined together. Stone and brick structures are joined together with mortar. Unlike shell structures, solid structures are not usually hollow; they can be very strong. Examine how a brick wall is built and arranged.</p> <p><b>Solid Structures – Strength.</b></p> <ul style="list-style-type: none"> <li>• Make brick walls using a stacked bond.</li> <li>• Remove bricks from the lower course and describe what happens.</li> <li>• Make brick walls using a running bond.</li> <li>• Remove bricks from the lower course and describe what happens.</li> <li>• Draw annotated diagrams of what happened to the walls.</li> <li>• Use construction sets to build solid structures.</li> </ul> <p><b>Solid structures – Stability</b></p> <ul style="list-style-type: none"> <li>• Define the word 'stable'.</li> <li>• Define the word 'balanced'.</li> <li>• What is an architect?</li> <li>• Make three towers: one with a narrow base, one with a wider base and another with a very wide base. Put the towers on a piece of paper and then move the Piece of paper, as if there was an earthquake, and describe what happens to the towers.</li> <li>• Draw annotated diagrams of what happens to each tower.</li> </ul> <p><b>Task</b> Apply your knowledge of solid structures to make stable models. Explain why the models are stable, using annotated diagrams. Experiment with a variety of different solid shapes in your structures.</p>			
DT Objectives			Unit of work end points
<ul style="list-style-type: none"> <li>• Cut materials safely using tools provided.</li> <li>• Measure and mark out to the nearest centimetre.</li> <li>• Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</li> <li>• Demonstrate a range of joining techniques (such as gluing, using hinges or combining materials to strengthen).</li> <li>• Design products that have a clear purpose and an intended user.</li> <li>• Make products, refining the design as work progresses.</li> <li>• Explore objects and designs to identify likes and dislikes of the designs.</li> <li>• Suggest improvements to existing designs.</li> </ul>			<ul style="list-style-type: none"> <li>• Define 'a solid structure'.</li> <li>• What does it mean if a structure is hollow?</li> <li>• List five examples of a natural solid structure.</li> <li>• List five examples of a manufactured solid structure.</li> <li>• What is mortar?</li> </ul>
Key vocabulary			Questions?
solid:	Made of objects that have little or no space inside them		What is an architect?
mortar:	Cement used to join bricks or stones together		What does it mean if a structure is hollow?
hollow:	Something that has space inside it		What is mortar?
dam:	A wall used to block a river		
bond	how bricks are arranged		



St Paul's Primary School, Newcastle. Glorifying Almighty God, and serving our community.