

PROGRESSION IN SKILLS AND KNOWLEDGE – DESIGN AND TECHNOLOGY: STRUCTURES



Year group	Early Years
Knowledge	<p>I am beginning to explore different techniques for joining materials, such as how to use adhesive tape and different sorts of glue</p> <p>I can make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.</p> <p>I can use various construction materials, e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces</p> <p>I can use tools for a purpose</p> <p>I can handle tools, objects, construction and malleable materials safely and with increasing control and intention</p>
Key vocabulary	Plan, ideas, design, make, build, construct, join, shape, tools, change

Year group	One
Knowledge	<p>I can discuss what a structure is.</p> <p>I can discuss stability of a structure and begin to think of ways to make one more stable.</p> <p>I can start to use simple adhesives to join materials together.</p>
Content	<p>Research existing playground equipment; discuss materials of existing products.</p> <p>Using market research, design own playground equipment, incorporating ways to increase stability.</p>
End of topic expectations	<p>Children can design and create a simple structure.</p> <p>Children can think of ways to make their structure more stable.</p>
Key vocabulary	Structure, join, stable, stability, stiffen.

Year group	Two
Knowledge	<p>I can mark out materials to be cut using a template.</p> <p>I can use research to aid my design.</p> <p>I can build upon my knowledge of adhesives to include a glue gun to join materials.</p> <p>I can use knowledge and research to create a stable structure.</p>
Content	<p>Research style of houses in the year 1666. Using this research, design and create a house traditional of the time when the Great Fire of London hit. Houses were uniform in this era so a template for the</p>

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	house's features e.g. windows, will need to be created using a template. The house structure must be free standing and stable.
End of topic expectations	Children will design and create a stable structure of a house from a previous era. Children will investigate using other methods to join materials together. Children will use a template to create uniformity in their structure.
Key vocabulary	Stability, structure, join, adhesive, template, uniformity.

Year group	Three
Knowledge	I can begin to discuss and explain how existing structures are stable and stay standing. I can investigate ways to make my structure more stable such as using diagonal struts/wide base.
Content	Research existing photograph frames which are free standing – how is this? Design and create a replica model structure of these existing products for Christmas, ensuring it is free standing and stable.
End of topic expectations	Children will study and research existing products of photograph frames and will be able to discuss how to keep it free standing. Children will create a model with a wide base and diagonal struts to ensure it will stay standing.
Key vocabulary	Structure, stable, stability, wide base, shell,

Year group	Four
Knowledge	I can measure and mark square section, strip and dowel accurately to 1cm. I can create a frame structure based on existing products. I can find ways to make a structure strong and stable using diagonal struts and explain why I have done this.
Content	Research frame structures and how they are created. Use this research to design and create a kite to be flown outside.
End of topic expectations	Children will be able to design and make a kite based on those found during research. Children will use appropriate materials such as dowel and join them to make a strong structure.

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Key vocabulary	Structure, stable, stability, frame, struts.
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Year group	Five
Knowledge	<p>I can use hand drill to drill tight and loose fit holes.</p> <p>I can cut, strip wood, dowel, square section wood accurately to 1mm.</p> <p>I can use a range of tools to make a structure with guidance.</p> <p>I can select appropriate methods to join materials together.</p> <p>I can create a framework to support the structure.</p>
Content	<p>Research the style of Anglo-Saxon boats. Using this, design and create a model of a boat from this era.</p> <p>Use wood to create the frame and base.</p>
End of topic expectations	<p>Children will create a structure of a boat based on research of past products.</p> <p>Children will use a wider range of tools and adhesives to join materials together.</p> <p>Children will be able to explain their reasons for using certain materials/joining methods to create their product.</p>
Key vocabulary	Structure, research, materials, purpose, join, bradawl, drill, reinforce.

Year group	Six
Knowledge	<p>I can continue to use a range of tools to create a structure with increasing confidence.</p> <p>I can create a structure which supports itself and a mechanism.</p> <p>I can confidently decide how to join materials together to create my structure.</p>
Content	<p>Research a range of coastal defences and environmental structures. With this, design a structure which will help look after the environment e.g. a wind turbine structure with a mechanism to make it move.</p>
End of topic expectations	<p>Children will research, design and create scenery for the end of year production.</p> <p>Children will create a stable structure which will support itself.</p> <p>Children will confidently select materials, join them together and be able to explain their reasons for these.</p>
Key vocabulary	Structure, stable, mechanism, strong, join, adhesive, bradawl, drill.