

Topic: Structure: Construct a castle

National Curriculum Objectives which are covered in this unit:

Design

Pupils should be taught to:

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Make

Pupils should be taught to:

- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients according to their characteristics.

Evaluate

Pupils should be taught to:

- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

Technical knowledge

Pupils should be taught to:

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Lesson sequence - include the key concept, L.O. and brief description of lesson

<p>WALT: recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure.</p> <p>Learning the features of a castle and designing one using 3D shapes.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can identify different features of castles. • I can design my own castle. • I can label the features of my castle. • I can explain why a castle needs to be strong and stable. <p>Pupils with secure understanding indicated by: drawing a simple castle that includes the most common features; labelling the drawing; recognising that a castle is made up of multiple 3D shapes.</p> <p>Pupils working at greater depth indicated by: drawing a comprehensive castle with all of the features of the castle included; labelling the drawing with keywords and definitions of each feature; suggesting and/or explaining how each of the features they have included help to make the castle strong and stable and why this is important.</p>	<p>WALT: design a castle.</p> <p>Following design specification to create a castle.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can recall the features of a castle. • I can add two design points to the design specification to appeal to the person/purpose of my castle. • I can draw the design of my castle using 2D shapes and labelling: <ul style="list-style-type: none"> ○ the 3D shapes that will create the features; ○ the materials I need; ○ the colours I will use. <p>Pupils with secure understanding indicated by: designing a castle with key features which appeal to a given person/purpose.</p> <p>Pupils working at greater depth indicated by: identifying specific details of their design, e.g. materials, colours; designing a castle in detail, incorporating basic features as well as other useful features specific to the person or purpose they're designing for.</p>	<p>WALT: construct 3D nets.</p> <p>Constructing nets to make 3D shapes to use in the construction of a castles.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I know that a net is what a 3D shape would look like if it were opened out flat. • I can construct a range of 3D geometric shapes using a net by: <ul style="list-style-type: none"> ○ Cutting along the bold lines. ○ Folding along the dotted lines. ○ Keeping the tabs the correct size. ○ Making crisply folded edges. ○ Constructing the net using glue to make a geometric shape. ○ <p>Pupils with secure understanding indicated by: cutting along solid lines; scoring along dashed lines; glueing securely to assemble geometric shapes.</p> <p>Pupils working at greater depth indicated by: working creatively and accurately to make the unique features found in their initial design through more complex structures; completing the above with accuracy; designing their own nets.</p>	<p>WALT: construct and evaluate my final product.</p> <p>Making and attaching the specific features of a castle designs and decorating by adding facades to complete the project.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can construct my castle to meet the requirements of my brief by: <ul style="list-style-type: none"> ○ Making neat 3D shapes using nets. ○ Stacking shapes and recyclable materials to make the structures of my castle. ○ Creating a castle base to secure my structures to. ○ Adorning my castle with facades and other decorative features. • I can evaluate my work and the work of others. <p>Pupils with secure understanding indicated by: utilising skills to build a complex structure from simple geometric shapes; evaluating their work by answering simple questions.</p> <p>Pupils working at greater depth indicated by: completing the above with accuracy and creativity; justifying design decisions and identify ways to improve their work; evaluating their work and/or the work of their peers based on the aesthetic of the finished product and in comparison to the original design.</p>
<p>Prior learning</p> <p><i>List year groups and topics with connected learning</i></p>	<p>Reception – Junk modelling Year 1 – construct a windmill Year 2 – Baby bear’s chair</p>		
<p>Future learning</p> <p><i>List year groups and topics with connected learning</i></p>	<p>Year 4 Mechanical systems: making a slingshot Year 5 Structures: Bridges Year 6 Mechanical systems: Automata toys</p>		
<p>Key vocabulary to be explicitly taught</p>	<p>2D 3D castle design shape stable stiff strong key features net scoring structure tab</p>		

<p><u>Cross-curricular links</u></p>	<p>History Pupils should be taught about:</p> <ul style="list-style-type: none"> • A study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066. <p>Maths Geometry – properties of shapes Pupils should be taught to:</p> <ul style="list-style-type: none"> • Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.
<p><u>Enrichment</u></p> <p><i>Give visit/visitor/first hand experience and focus</i></p>	
<p><u>Useful websites/resources</u></p>	<p><u>Knowledge organiser: DT - Y3 Constructing a castle</u> <u>Vocabulary display: Structures: Constructing a castle</u></p>