

### NC Purpose of Study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

| Intent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Implementation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| At Broadway Junior School, Design and Technology inspires pupils to become creative, innovative and reflective problem-solvers. Through a progressive curriculum, children develop the knowledge, skills and confidence to design, make and evaluate purposeful products while considering the needs of others and the wider world. Pupils learn to take risks, think critically and apply technical knowledge across a range of contexts, including structures, mechanisms, textiles, electrical systems, the digital world and cooking and nutrition. We aim to foster resilience, resourcefulness and curiosity, enabling children to understand the impact of design and technology on everyday life and prepare them for future learning and careers. | Design and Technology is taught through the Kapow Primary scheme, which provides a carefully sequenced and progressive curriculum from Year 3 to Year 6. Learning follows the design process of design, make and evaluate, underpinned by the development of technical knowledge. Pupils revisit key areas throughout Key Stage 2, building on prior learning through a spiral curriculum approach. Lessons are taught over three half-terms each academic year and include practical, hands-on experiences, collaborative learning and opportunities for independent thinking. Knowledge organisers support vocabulary and knowledge retention, while differentiated activities ensure all pupils can access and achieve within the curriculum. Teachers are supported through high-quality planning and subject-specific professional development resources. | The impact of our Design and Technology curriculum is evident in pupils who are confident, creative and capable designers. Children develop a secure understanding of materials, tools, processes and healthy nutrition, applying their knowledge to create purposeful and innovative outcomes. They demonstrate increasing independence when designing, making and evaluating products and can reflect thoughtfully on how their work could be improved. Assessment is ongoing through observation, questioning and review of completed projects, enabling teachers to identify and address gaps in learning. By the end of Key Stage 2, pupils have the skills, knowledge and understanding required to meet National Curriculum expectations and succeed in the next stage of their education. |

### Key Vocabulary

2D 3D castle design key features net scoring shape stable stiff strong structure tab

| Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Skills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <ul style="list-style-type: none"> <li>To understand that wide and flat based objects are more stable.</li> <li>To understand the importance of strength and stiffness in structures.</li> <li>To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse – and their purpose.</li> <li>To know that a façade is the front of a structure.</li> <li>To understand that a castle needed to be strong and stable to withstand enemy attack.</li> </ul> | <p><u>Design</u></p> <ul style="list-style-type: none"> <li>Designing a castle with key features to appeal to a specific person/purpose.</li> <li>Drawing and labelling a castle design using 2D shapes.</li> </ul> <p><u>Make</u></p> <ul style="list-style-type: none"> <li>Constructing a range of 3D geometric shapes using nets.</li> <li>Creating special features for individual designs.</li> <li>Making facades from a range of recycled materials.</li> </ul> <p><u>Evaluate</u></p> <ul style="list-style-type: none"> <li>Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design.</li> <li>Suggesting points for modification of the individual designs.</li> </ul> |

| Learning Objectives/End Points                                                                   |                                              |                                               |                                             |
|--------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------|---------------------------------------------|
| <a href="#">Lesson 1: Features of a castle</a>                                                   | <a href="#">Lesson 2: Designing a castle</a> | <a href="#">Lesson 3: Nets and structures</a> | <a href="#">Lesson 4: Building a castle</a> |
| To recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure. | To design a castle.                          | To construct 3D nets.                         | To construct and evaluate my final product. |

| Materials                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Cautions                                                                                                                                                                                         |
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| <ul style="list-style-type: none"> <li>Rulers</li> <li>A4 paper</li> <li>A large selection of 2D shapes for the children to draw around</li> <li>Scissors / Glue sticks</li> <li>Blue tac Tape.</li> <li>Collected toilet/kitchen roll tubes, packaging etc.</li> <li>Materials for the structures and castle base</li> <li>Materials for the façades:</li> <li>A3 coloured card.</li> <li>Material textures printed, e.g. stone tiles, brickwork, etc.</li> </ul> | <ul style="list-style-type: none"> <li>Use the equipment only as instructed by the teacher</li> <li>Cut away from fingers</li> <li>Only use scissors at the table while sitting down.</li> </ul> |

| Cross-Curricular Links                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <p><b>History</b></p> <ul style="list-style-type: none"> <li>A study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066.</li> </ul> <p><b>Maths - Geometry – properties of shapes</b></p> <ul style="list-style-type: none"> <li>Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.</li> </ul> |

| Careers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <p><b>Linking Curriculum Learning to Careers</b></p> <p>Discuss how the skills developed in this unit are used in a range of careers, including:</p> <ul style="list-style-type: none"><li>• Architect</li><li>• Structural Engineer</li><li>• Civil Engineer</li><li>• Construction Designer</li><li>• Building Surveyor</li><li>• Model Maker</li><li>• Product Designer</li><li>• Set Designer</li></ul> <p>Transferable skills such as Designing for a purpose, Planning and communicating ideas through drawings, Understanding materials and their properties, Problem-solving and improving designs, Measuring, cutting and constructing accurately, Understanding strength, stability and structure, Evaluating and refining products, Working safely and collaboratively</p> | <p><b>Learning from Career and Labour Market Information</b></p> <ul style="list-style-type: none"><li>• Explore how designers, architects and engineers use creativity, planning and problem-solving to create strong and functional structures.</li><li>• Discuss how castles were designed with specific features to solve problems, such as defence, protection and access.</li><li>• Understand that modern designers continue to use similar principles when creating buildings, products and structures</li></ul> <p><b>Encounters with Employers and Employees</b></p> <ul style="list-style-type: none"><li>• Explore how architects and engineers design buildings by considering shape, structure, materials and purpose.</li><li>• Discuss how professionals create plans, models and prototypes before building real structures.</li></ul> <p><b>Experiences of Workplaces</b></p> <ul style="list-style-type: none"><li>• Explore local buildings, castles, historic structures or construction projects to investigate how they have been designed and built.</li><li>• Visit a historic building, museum or architectural site (or explore virtually) to understand how structures are planned and maintained.</li></ul> |