

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
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

computer-aided design (CAD) feedback form function net shell structure tab three-dimensional (3D)

Knowledge	Skills
Make - To know: - That creating accurate shapes improves how they look and sometimes their function. Evaluate - To know: - Good suggestions help give better feedback. - That they can choose to use feedback or not. Technical knowledge - To know: - That a shell structure is a hollow shape with a thin outer layer. - That 3D shapes can form structures. - Structures can be strengthened by manipulating materials and shapes.	Design - Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences. - Beginning to use 2D CAD software to communicate their ideas. (sketchpad) Make - Creating accurate shapes from templates. - Choosing shapes to suit the function of a product. - Cutting out more complex shapes accurately. Evaluate - Explaining why they think certain aspects of a peer's design are effective or why they suggested specific improvements. - Reflecting on feedback to decide if and how it could be used to improve future iterations. - Investigating and analysing a range of existing products by looking at their functionality and appeal. Technical knowledge - Beginning to understand how different structures are built. - Strengthening structures by ribbing. - Constructing a range of 3D shapes.

Learning Objectives/End Points				
Lesson 1: Exploring product packaging	Lesson 2: Using nets	Lesson 3: Reviewing designs	Lesson 4: Making 3D packaging	Lesson 5: Decorating and evaluating
To evaluate how 3D shapes are used in product packaging.	To design nets for 3D product packaging.	To review and improve net designs for packaging.	To make 3D structures to package a healthy snack.	To use a design brief to finalise and evaluate packaging.

Materials	Cautions
- Scissors right- and left-handed options recommended. - A4 card - A4 coloured card - Laptops or tablets with access to Microsoft Office - Highlighters - PVA glue - Glue spreaders - Paper straws - Plain paper	- Use the equipment only as instructed by the teacher - Cut away from fingers - Only use scissors at the table while sitting down.

Cross-Curricular Links
Mathematics: - Geometry – properties of shapes. Computing. - English: Spoken language.

Careers	
Linking Curriculum Learning to Careers Discuss how the skills developed in this unit are used in a range of careers, including: • Product designer • Packaging designer • Graphic designer • Industrial designer • Branding designer • Illustrator • Digital designer • Fashion/product designer • CAD designer • 3D designer • Digital design technician • Product visualisation designer • UX/UI designer • Design technology technician 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	Learning from Career and Labour Market Information • Explore age-appropriate examples of careers such as product designer, packaging designer, graphic designer, engineer, architect, CAD designer, packaging technologist, manufacturer, marketing designer and quality control technician. Discuss how packaging is designed for different products, customers and purposes. Addressing the Needs of Each Pupil • Encourage pupils to recognise their individual strengths in designing, making, drawing, computing, problem-solving, precision, creativity and evaluating. Provide opportunities for pupils to choose different roles within design and making activities and to identify which aspects of DT they enjoy most. Encounters with Employers and Employees • Provide opportunities to meet or hear from a product designer, packaging designer, architect, engineer, CAD designer, graphic designer, manufacturer or marketing professional. Pupils can investigate how professionals turn ideas into real products. Experiences of Workplaces • Explore workplaces such as design studios, engineering companies, manufacturing sites, packaging factories, architectural practices, advertising agencies, supermarkets and product development companies. Where possible, provide virtual or physical workplace visits.