Design and Technology

At Brookside Primary School and across OAK Trust, we use the National Curriculum to shape the content and expectations of our Design and Technology curriculum. Our OAK curriculum has been informed by the principles and progression of the Oak National Academy curriculum, ensuring pupils progressively develop the knowledge, technical understanding and practical expertise needed to develop design capability and become confident, creative problem-solvers from the Early Years through to the end of Key Stage 2. Across OAK, key design and technology threads are woven throughout the curriculum, enabling pupils to think and work like designers whilst applying their learning in purposeful, real-world contexts.

Design and Technology is an inspiring and practical subject that develops pupils' design capability through the designing and making of prototypes. Pupils solve authentic problems in meaningful contexts, designing products for real users and purposeful outcomes. Through designing, making, testing and evaluating, they apply technical knowledge, communicate ideas effectively and refine solutions through an iterative design process. As they explore how design and technology influences society, the environment and everyday life, pupils become creative problem-solvers, responsible designers, informed citizens and thoughtful consumers.

Intent

- **To develop pupils as creative and purposeful designers:** We inspire pupils to design innovative solutions that respond to the needs of users, communicating and refining ideas through an iterative design process.
- **To build secure technical knowledge and practical expertise:** Our curriculum develops pupils' understanding of materials, structures, mechanisms, textiles, food and nutrition, and electrical systems, enabling them to confidently apply technical knowledge when designing and making.

- **To foster creativity, resilience and innovation:** We encourage pupils to generate ideas, take informed risks, solve problems and learn from testing, refinement and evaluation.
- **To develop confident makers and critical evaluators:** Pupils learn to safely select and use appropriate tools, materials and techniques whilst evaluating their own work, the work of others, and the contribution of design and technology to the wider world.
- **To promote responsible and sustainable innovation:** Our curriculum encourages pupils to consider sustainability, new and emerging technologies, and the social, moral, ethical and environmental impact of design decisions.

This intent ensures that pupils develop the knowledge, skills and confidence to think and work like designers, applying creativity, technical understanding and critical thinking to solve real-world problems. We ensure that we draw upon both substantive concepts, which we refer to as our **Design and Technology threads**, and disciplinary concepts to deliver high-quality lessons that enable pupils to think and work like designers.

Implementation

We use core substantive and disciplinary concepts, informed by the Oak National Academy curriculum, providing a thematic framework that emphasises the key ideas and ways of thinking in Design and Technology. This ensures pupils progressively develop both the knowledge of the subject and the habits of successful designers.

Across OAK, we refer to the following substantive concepts as our **Design and Technology threads**, ensuring pupils revisit and deepen the knowledge that underpins the subject:

- **Critique and Evaluate:** Analysing products and ideas, justifying design decisions and using evaluation to refine and improve outcomes.
- **Design:** Generating, communicating and developing ideas that respond creatively to authentic design briefs and user needs.

- **Make:** Selecting and applying appropriate materials, tools, techniques and processes to manufacture high-quality prototypes and products.
- **Materials:** Developing an understanding of the properties, selection and appropriate use of materials and components.
- **Sustainability:** Considering environmental impact, responsible use of resources and designing for a more sustainable future.
- **Systems:** Understanding how structures, mechanisms and electrical systems function and work together to solve practical problems.
- **User-centred Design:** Designing products that respond to the needs, experiences and preferences of intended users.

Within our design and technology threads (substantive concepts), we ensure disciplinary concepts are explicitly taught and progressively developed throughout the curriculum. These focus on how Design and Technology is understood and applied through four key subject principles:

- **Design** by understanding contexts and users, communicating ideas effectively, applying iterative design strategies and avoiding fixation on first ideas.
- **Make** by developing practical expertise through the safe and accurate use of tools, equipment, materials, components and manufacturing processes.
- **Evaluate** by critiquing ideas and products, considering the work of past and present designers, and understanding the influence of new and emerging technologies.
- **Develop Technical Knowledge** by applying understanding of structures, properties of materials, mechanical systems and electrical systems to increasingly complex design challenges.

Technical knowledge is progressively developed through the study of **structures, mechanisms, textiles, food and nutrition, electrical systems and materials**, ensuring pupils build the confidence, capability and creativity to apply their learning to solve real-world problems.

Impact

The impact of our Design and Technology curriculum is that pupils leave primary school with the knowledge, technical understanding and practical

expertise to confidently design, make and evaluate products that solve real-world problems. They communicate ideas effectively, apply technical knowledge with increasing confidence and use evaluation to refine and improve their work.

As pupils progress through the curriculum, they become increasingly independent, reflective and innovative designers who understand the importance of user-centred design, sustainability and the impact of technology on everyday life.

We assess pupils' progress in Design and Technology through ongoing observation during making activities, evaluation of design portfolios and sketchbooks, and assessment of finished products against design criteria. Teachers use formative assessment to identify next steps and adapt teaching to meet pupils' needs.

By the end of Key Stage 2, pupils are well prepared for the next stage of their Design and Technology education, equipped with the confidence, curiosity and technical capability to apply their learning as responsible designers, informed citizens and thoughtful consumers.