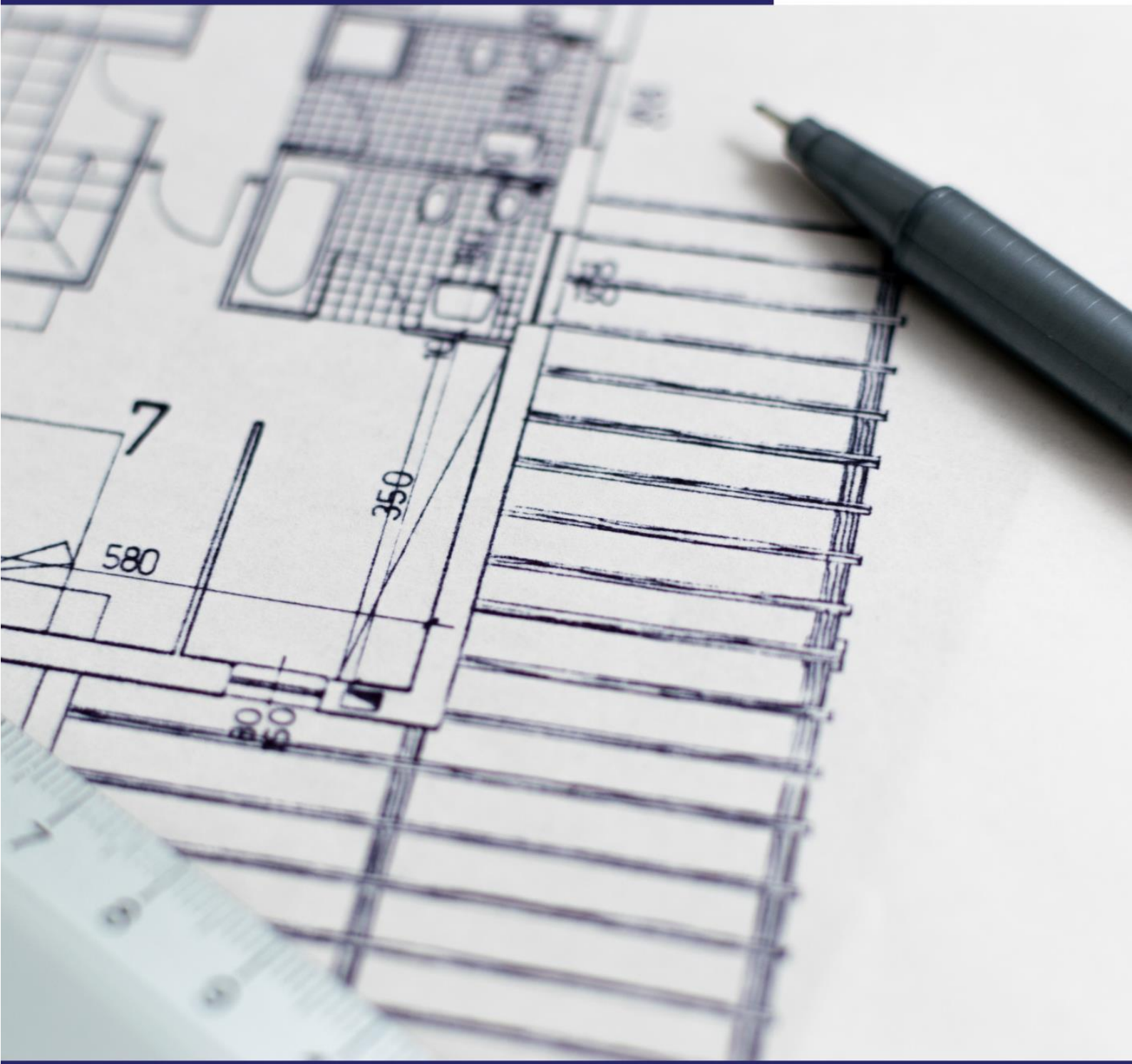
D&T

THE FOXTON CURRICULUM

Foxton Primary School

2023/24



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Good buildings come from good people, and all problems are solved by good design
– Stephen Gardiner

At Foxton Primary School, we are designers.

Our Design & Technology Curriculum

We use the Design and Technology Association's 'Projects on a Page' to form the basis of our design and technology curriculum. As they progress through school, children at Foxton take part in designing, making and evaluating a range of different projects whilst also learning about some of the great engineers of the past. Our scheme of work is based on the six essentials of good practice in D&T:

1. User

Children should have a clear idea of who they are designing and making products for, considering their needs, wants, interests or preferences. The user could be themselves, an imaginary character, another person, client, consumer or a specific target audience.

2. Purpose

Children should know what the products they design and make are for. Each product should perform a clearly defined task that can be evaluated in use.

3. Functionality

Children should design and make products that function in some way to be successful. Products often combine aesthetic qualities with functional characteristics. In D&T, it is insufficient for children to design and make products which are purely aesthetic.

4. Design Decisions

When designing and making, children need opportunities to make informed decisions such as selecting materials, components and techniques and deciding what form the products will take, how they will work, what task they will perform and who they are for.

5. Innovation

When designing and making, children need some scope to be original with their thinking. Projects that encourage innovation lead to a range of design ideas and products being developed, characterised by engaging, open-ended starting points for children's learning.

6. Authenticity

Children should design and make products that are believable, real and meaningful to themselves i.e. not replicas or reproductions or models which do not provide opportunities for children to make design decisions with clear users and purposes in mind.

In Fox Cubs, children begin to develop their understanding of design and technology. Through the safe use of scissors, paintbrushes, playdough modelling tools and construction, children learn 'the best tools for the job'. Throughout the year, children also have access to a well-resourced creative area where they design and make their own models. Other projects include designing Christmas decorations using natural materials as well as making junk modelled vehicles. In Key Stage 1 and 2, staff use a knowledge planner to map out in granular detail the key technical knowledge and understanding needed to deliver each 'Project on a Page' successfully. This document also helps teachers to understand what has been taught previously and how their lessons build on prior learning as well as create the foundations for what comes next.

Design & Technology Overview

Class 1			
Cycle A	**Mechanisms** Slides and levers	**Structures** Freestanding structures	**Food** Preparing fruit and vegetables (including cooking and nutrition requirements for KS1)
Cycle B	**Mechanisms** Wheels and axis	**Food** Preparing fruit and vegetables (including cooking and nutrition requirements for KS1)	**Textiles** Templates and joining techniques
Class 2			
Cycle A	**Structures** Shell structures (including computer-aided design)	**Food** Healthy and varied diet (including cooking and nutrition requirements for KS2)	**Textiles** 2D shape to 3D product
Cycle B	**Mechanical systems** Levers and linkages	**Electrical systems** Simple circuits and switches (including programming and control)	**Food** Healthy and varied diet (including cooking and nutrition requirements for KS2)
Class 3			
Cycle A	**Structures** Frame structures	**Food** Celebrating culture and seasonality (including cooking and nutrition requirements for KS2)	**Electrical systems** More complex switches and circuits (including programming, monitoring and control)

Cycle B	**Textiles** Combining different fabric shapes (including computer-aided design)	**Mechanical systems** Pulleys or gears	**Food** Celebrating culture and seasonality (including cooking and nutrition requirements for KS2

Knowing more and remembering more

Every DT lesson starts with retrieval practice in order to combat the forgetfulness curve. This retrieves the most recent learning and makes connections to previous concepts that recur e.g. textiles, structures and electrical systems. Through responsive teaching, staff continuously monitor pupils' progress against expected attainment for their age and provide in-lesson feedback in order to move the learning forward. Additional support and challenge is provided as required. Children record their DT work in the back of their art and design sketchbooks. This provides evidence of their progression of skills as well as a portfolio of work to be celebrated. Teachers use an end of unit assessment sheet to record outcomes against the key learning of the knowledge planner; these highlight cohort and individual strengths and weaknesses. Based on these, adjustments are then made to future planning in order to best meet the needs of all pupils.

A Global Curriculum

Embracing a global perspective, the primary design and technology curriculum at Foxton nurtures each child's innate innovator. Through the structured 'Project on a Page' approach, students engage in a comprehensive design process that mirrors the principles of the UN Sustainable Development Goals (SDGs). Beginning with goal identification and research, students progress to design, model creation, testing, and solution evaluation. This process seamlessly aligns with Goal 9: Industry, Innovation, and Infrastructure, fostering skills that empower students to address challenges such as clean water and sanitation, accessible and clean energy, the climate crisis, and other environmental concerns (SDGs 6, 7, 13, and 15). By honing these skills, we pave the way for our students to become future problem-solvers and contributors to a more sustainable world.

Appendix 1

National Curriculum

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.

Aims
The national curriculum for design and technology aims to ensure that all pupils: • develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world • build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users • critique, evaluate and test their ideas and products and the work of others • understand and apply the principles of nutrition and learn how to cook.

Subject content	
Key stage 1 Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: **Design** • design purposeful, functional, appealing products for themselves and other users based on design criteria • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	**Key stage 2** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: **Design** • 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 • 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** • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria **Technical knowledge** • build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	**Make** • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities **Evaluate** • investigate and analyse a range of existing products • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world **Technical knowledge** • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products.