

Design and Technology

Our Vision

Design and technology is an inspiring, rigorous and practical subject. At Summerville Primary School we plan interesting, creative and motivating projects within a range of contexts. Pupils identify, appreciate and develop an understanding of the contribution that innovative design and technological advancements have in the shaping of our world. We also apply the iterative process of design and making to food technology and cooking healthy meals.

Using creativity and imagination, Summerville pupils will 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 will acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, geography, computing and art. Pupils will learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they will 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.

Pupils will be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Design and Technology Curriculum Overview

Early Years

During the Early Years Foundation Stage, the essential building blocks of children's design and technology capability are established. Design and technology forms part of the learning children acquire under the 'Knowledge and Understanding of the World' branch of the Foundation Stage curriculum.

The children learn design and technology related skills through first-hand experiences. They are encouraged to explore, observe, solve problems, think critically, make decisions and to talk about why they have made their decisions.

They will learn to:

- construct with a purpose in mind, using a variety of resources
- build and construct structures with a wide range of objects, adapting their initial ideas when necessary
- select the tools and techniques they need to shape, assemble and join materials and use them competently and appropriately
- use a range of simple tools and techniques competently and appropriately
- use simple cooking techniques such as stirring, mixing and blending
- explore how everyday objects work by dismantling things
- discuss and record their decisions and explain what makes activities safe or unsafe

Key Stage 1

Our 20-21 scheme of work includes three projects for each year group. These include construction materials, textiles, food and mechanical components. The scheme of work is based on the six essentials of good practice in D&T. These ensure children's learning is genuinely design and technological in nature and are consistent with the National Curriculum requirements.

These six essentials components will be considered in each project:

- **user** – children will 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.
- **purpose** – children will know what the products they design and make are for. Each product should perform a clearly defined task that can be evaluated in use.
- **functionality** – children will 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.

- **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.
- **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.
- **authenticity**– children will 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.

	Y1	Y2
Autumn	<u>Structures</u> freestanding structures	<u>Food</u> preparing fruit and vegetables
Spring	<u>Mechanisms</u> sliders and levers	<u>Mechanisms</u> wheels and axles
Summer	<u>Food</u> preparing fruit and vegetables	<u>Textiles</u> templates and joining techniques

Key Stage 2

As pupils progress through Key Stage 2, key learning is revisited and pupils develop their skills, knowledge and understanding in a cumulative, progression. Pupils will continue to undertake three projects a year and where possible these will be linked thematically to other curriculum areas. The projects include construction materials, textiles, food, mechanical components and electrical components.

	Y3	Y4	Y5	Y6
Autumn	<u>Mechanical Systems</u> levers and linkages	<u>Structures</u> shell structures	<u>Food</u> celebrating culture	<u>Electrical Systems</u> more complex switches and circuits
Spring	<u>Textiles</u> 2D shape to a 3D shape	<u>Food</u> sandwiches/wraps	<u>Structures</u> frame structures	<u>Food</u> celebrating culture
Summer	<u>Mechanical Systems</u> pneumatics	<u>Electrical Systems</u> simple circuits and switches	<u>Textiles</u> combining different fabric shapes	<u>Mechanical Systems</u> pulleys or gears