

"Design is a funny word. Some people think design means how it looks. But of course, if you look deeper, it's really how it works." Steve Jobs

Design and Technology prepares children to deal with tomorrow's rapidly changing world. It encourages children to become independent, creative problem solvers and thinkers as individuals and part of a team. It enables them to identify needs and opportunities and to respond to them by developing a range of ideas and by making products and systems. Through the study of Design and Technology, they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industry. This allows them to reflect on, and evaluate, past and present technology, its uses and impacts.

Intent

It is the intent of Picknalls First School for Design Technology to be taught in all year groups through one topic per term, led by the National Curriculum and refined by the DT leader, which includes one topic relating to food. Design Technology projects are often linked with our Connected Curriculum and skills used in other subjects, such as Art and Maths.

Key objectives of intent within the Design Technology Curriculum based on the National Curriculum guidance:

-  Products are to be made for a purpose.
-  Individuality should be encouraged in children's design and construction of products.
-  Delivery of the two strands: Designing & Making and Cooking & Nutrition.
-  Teaching the importance of making on-going changes and improvements during the making stages.
-  Looking into seasonality of ingredients and how they are grown, caught or reared.
-  Researching key events and individual designers in the History of Technology in KS2.

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.

Implementation

The teaching of Design Technology across the school follows the National Curriculum. Food technology is implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet, and how to prepare this.

Design and Technology is a crucial part of school life and learning, and it is for this reason, that as a school, we aim to teach and deliver a high-quality Design and Technology curriculum; through well-planned and resourced projects and experiences.

Design and Technology also embeds positive learning behaviours. It is an inspiring, rigorous and practical subject, requiring creativity, resourcefulness and imagination. Pupils design and make products that solve real and relevant

problems within a variety of contexts. In our First School, Design and Technology draws upon subject knowledge and skills within Mathematics, Science, History and Art. Children learn to take risks, be reflective, innovative, enterprising and resilient. Through the evaluation of past and present technology they can reflect upon the impact of Design Technology on everyday life and the wider world.

Early Years Foundation Stage

Since 2021 D&T has been named in the 'Expressive Arts and Design' area of learning (Creating with materials) and Physical development within the statutory framework for Early Years Foundation Stage.

During the EYFS pupils explore and use a variety of media and materials through a combination of child-initiated and adult-directed activities. They have the opportunities to learn to:

-  Use different media and materials to express their own ideas.
-  Use what they have learnt about media and materials in original ways, thinking about form, function and purpose.
-  Make plans and construct with a purpose in mind using a variety of resources.
-  Develop skills to use simple tools and techniques appropriately, effectively and safely.
-  Select appropriate resources for a product and adapt their work where necessary.
-  Cook and prepare food, adhering to good health and hygiene routines.

National Curriculum requirements at 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.

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.

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.

National Curriculum requirements for food and Nutrition at KS1

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also 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.

Pupils should be taught to:

-  Use the basic principles of a healthy and varied diet to prepare dishes.
-  Understand where food comes from.

In Key Stage 2:

Within key stage 2 key events and individuals that have influenced the world of Design Technology are teaching focuses that are to be covered.

National Curriculum requirements at 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 and pattern pieces.

Make

Select from, and use, a wider range of tools and equipment to perform practical tasks, such as accurately cutting, shaping, joining and finishing.

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 as gears, pulleys, cams, levers and linkages.)

Understand and use electrical systems in their products (for example series circuits incorporating switches, bulbs, buzzers and motors.)

National Curriculum requirements for food and nutrition at KS2

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also 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.

Pupils should be taught to:

Understand and apply the principles of a healthy and varied diet.

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

Impact

This is currently an area of development.

The assessment of children's learning in Design Technology will be an ongoing monitoring of children's understanding, knowledge and skills by the class teacher, throughout lessons. This assessment will then be used to inform differentiation, support and challenge required by the children. On completion of each DT unit each child's record of work will be stored in their DT folder along with a photograph of their completed product.

Summative assessment will be conducted termly by class teachers across each year group of the school using the Year group objectives, to inform the subject leader of progress or skills and knowledge still to be embedded.

Design Technology will also be monitored by the subject leader throughout the year in the form of folder monitoring, looking at outcomes and pupil conversations to discuss their learning and understanding and establish the impact of the teaching taking place.

Next Steps

1. Subject leader to research joining the D&T Association to
2. Subject leader to research purchasing the Projects on a Page scheme.
3. Subject leader to carry out folder monitoring and pupil conversations.

Written by Mrs E Price

Design and Technology Lead



Appendix

Year 1	Making simple levers and sliders	Strong and stable structures	Food tech Design and make with fruit
Year 2	Puppets	Moving vehicles	Food tech Details to be confirmed
Year 3	Moving monsters	Food tech Design and making sandwiches	Roman shields
Year 4	Food tech Seasonal food	Light up signs	Money containers