

DESIGN & TECHNOLOGY – Connected Curriculum Key Learning – KS2 Overview

From The National Curriculum in England – framework document 2013

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.

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 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.

Cooking and nutrition

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.

KS2

- 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.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

	Autumn 1	Autumn 2	Spring 1 (D&T Focus)	Spring 2	Summer 1	Summer 2
Year 3	<p>How does electricity work? Design and make Three Little Pigs houses Incorporate electrical components, furniture and décor Design and make a magnet game</p>	<p>Who were the greatest builders...? Make Egyptian food</p>	<p>Let's go on an adventure. Would we like to visit Guatemala? Make a Mayan god puppet – design process Make a character puppet for a play Create and share/make and share a favourite sweet corn recipe</p>	<p>The Games Children Play</p>	<p>Are Bugs important? Design a set for video</p>	<p>How could we make living here better for everyone?</p>

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<p>Year 4</p>	<p>How do I see? How do I hear? Design and make ear muffs</p>	<p>Why do we speak English at school? Sail power</p>	<p>Should we eat chocolate? Conduct market research Design chocolate product Make the prototype chocolate product Adapt and improve product Make final chocolate product Analysis of wrapping papers Design of packaging Evaluation of final product</p>	<p>From a Railway Carriage</p>	<p>What happens inside us? Design and make a board game</p>	
<p>Year 5</p>	<p>Why would someone build a castle...? Design and make a template of a helmet for a child to make and wear at the castle</p>	<p>What's it made of? Make lolly containers</p>	<p>Fairgrounds Design and make a Shaky Hand Tester Research, design and make, and evaluate fairground ride</p>	<p>The Highwayman</p>	<p>Do we make the most of what is right on our doorstep? Design and make a bird scarer Design and make a trolley</p>	

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Year 6	What's out there? Design, make and launch an air powered rocket Design a home for an alien	Has there ever been a better time...? Investigate a designer who improved life for many from periods chosen by the children	Why do some creatures no longer exist?	The Lady of Shalott		How successful are we as entrepreneurs?
EYFS-Y 6	Also see Whole School learning Units – The Ancient Greeks and The Global Dimension – for use every 4 years Further opportunities to explore and provide experiences in this subject area					