

National Curriculum Expectations in Design and Technology

Purpose of Study	Aims
<p>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.</p> <p>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.</p> <p>High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.</p> <p>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.</p>	<p>The National Curriculum for Design and Technology aims to ensure that all pupils:</p> <ul style="list-style-type: none"> ♣ 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 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. <p style="text-align: center;">Attainment Targets</p> <p>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.</p>
KS1	KS2
<p>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.</p> <p>When designing and making, pupils should be taught to:</p> <p><u>Design</u></p>	<p>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.</p> <p>When designing and making, pupils should be taught to:</p> <p><u>Design</u></p>

- ♣ 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.

- ♣ 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 in their products.

Cooking and Nutrition

- ♣ Use the basic principles of a healthy and varied diet to prepare dishes

- ♣ Understand where food comes from.

- ♣ 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 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.

- ♣ Understand and use electrical systems in their products.

- ♣ Apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition

- ♣ 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.

The Early Years Statutory Framework

Expressive Arts and Design

The development of children’s artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.

Physical Development

Physical activity is vital in children’s all-round development, enabling them to pursue happy, healthy and active lives. Gross and fine motor experiences develop incrementally throughout early childhood, starting with sensory explorations and the development of a child’s strength, co-ordination and positional awareness through tummy time, crawling and play movement with both objects and adults. By creating games and providing opportunities for play both indoors and outdoors, adults can support children to develop their core strength, stability, balance, spatial awareness, co-ordination and agility. Gross motor skills provide the foundation for developing healthy bodies and social and emotional well-being. Fine motor control and precision helps with hand-eye co-ordination, which is later linked to early literacy. Repeated and varied opportunities to explore and play with small world activities, puzzles, arts and crafts and the practice of using small tools, with feedback and support from adults, allow children to develop proficiency, control and confidence.

Understanding the World

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension.

EYFS Early Learning Goals

Creating with Materials

Children at the expected level of development will:

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.

Fine Motor Skills

Children at the expected level of development will:

- Use a range of small tools, including scissors, paint brushes and cutlery.
- Begin to show accuracy and care when drawing

The Natural World

Children at the expected level of development will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

EYFS	KS1	KS2
<ul style="list-style-type: none"> • To safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • To share their designs, explaining the process they have used. • Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases. • Use a range of small tools, including scissors, paint brushes and cutlery. • Begin to show accuracy and care when drawing. • Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting 	<ul style="list-style-type: none"> • To 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. • Select from and use a range of tools and equipment to perform practical tasks. • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. • Explore and evaluate a range of existing products. 	<ul style="list-style-type: none"> • 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. • Select from and use a wider range of tools and equipment to perform practical tasks 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.

environments, drawing on their experiences and what has been read in class.

- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

- Evaluate their ideas and products against design criteria.
- Build structures, exploring how they can be made stronger, stiffer and more stable.
- Explore and use mechanisms in their products.
- Use the basic principles of a healthy and varied diet to prepare dishes
- Understand where food comes from.

- 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
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products.
- Understand and use electrical systems in their products.
- Apply their understanding of computing to program, monitor and control their products.
- 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.

Design and Technology LTP Overview

EYFS		Art: Drawing: Marvellous Marks Art: Autumn Craft DT: Hibernation Boxes	DT: Cooking & Nutrition Art: Winter Craft Art Christmas Craft DT: Sliding Santa Chimneys	Art: Sculpture & 3D Art: Spring Craft DT: Spring Flower Threading	DT: Textiles Art: Easter Craft DT: Easter Hanging Activity	DT: Structures Art: Summer Craft DT: Cooking & Nutrition	Art: Painting & Mixed Media
		DT: Structures: Junk Modelling			Art: Craft & Design: Let's get Crafty		
KS1	YRA	Art: Painting	DT: Food Technology	Art: Drawing	Art: Sculpture	DT: Structures	Art: Craft & Design
		DT: Food Technology		DT: Mechanisms			
KS1	YRB	Art: Sculpture	DT: Structures	Art: Craft: Woven Wonders	DT: Textiles: Puppets	DT: Mechanisms: Moving Story Book	Art: Painting: Life in Colour
		Art: Drawing		DT: Textiles		DT: Mechanisms: Moving Monster	
KS2	YRA	Art: Craft & Design: Photography	DT: Electrical Systems	DT: Textiles	Art: Sculpture & 3D	DT: Food Technology	Art: Drawing
		Art: Painting & Mixed Media				DT: Mechanical Systems	
KS2	YRB	Art: Painting & Mixed Media	DT: Food Technology	Art: Sculpture & 3D	DT: Structures	DT: Mechanical Systems	Art: Drawing
		Art: Painting & Mixed Media		Art: Craft & Design: Architecture			
KS2	YRC	Art: Drawing	DT: Digital Technology	Art: Craft & Design	DT: Textiles (Egyptians)	Art: Sculpture & 3D	DT: Structures
		DT: Electrical Systems		DT: Food Technology (adapt a recipe)		Art: Painting & Mixed Media	
KS2	YRD	DT: Structures: Castles	Art: Craft & Design	Art: Drawing	DT: Mechanical Systems	Art: Sculpture & 3D	DT: Digital Technology: Navigating World
		DT: Textiles: Fastenings		Art: Painting & Mixed Media: Prehistoric Art			