



## Progression for Design and Technology

### 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.

### 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.

Stage	Objectives	
<b>Pre School 30-50 mths</b>	<u>Exploring and using media</u> Uses various construction materials. Beginning to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. Joins construction pieces together to build and balance. Realises tools can be used for a purpose.	
<b>EYFS</b>	<u>Expressive Arts and Design</u> They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	
<b>Key Stage 1</b>	<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 [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to:</p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> </ul>	<p><b>Year 1 'I can' statements</b></p> <p>I can use my own ideas to make something.            I can describe how something works.            I can cut food safely.            I can make a product which moves.            I can make my model stronger.            I can explain to someone else how I want to make my product.            I can choose appropriate resources and tools.            I can make a simple plan before making.</p> <p><b>Year 2 'I can' statements</b></p> <p>I can think of an idea and plan what do next.            I can choose tools and materials and explain why I have chosen them.            I can join materials and components in different ways.            I can explain what went well with my work.            I can explain why I have chosen specific textiles.            I can measure materials to use in a model or structure.</p>

	<ul style="list-style-type: none"> <li>• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• explore and evaluate a range of existing products</li> <li>• evaluate their ideas and products against design criteria</li> </ul> <p><b>Technical knowledge</b></p> <ul style="list-style-type: none"> <li>• build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul> <p><b>Cooking and nutrition</b></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><b>Key stage 1</b></p> <ul style="list-style-type: none"> <li>• use the basic principles of a healthy and varied diet to prepare dishes</li> <li>• understand where food comes from.</li> </ul>	
<p><b>Key Stage 2</b></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><b>Year 3 ‘I can’ statements:</b></p> <ul style="list-style-type: none"> <li>• I can prove that my design meets some set criteria.</li> </ul>

[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**

- I can follow a step-by-step plan, choosing the right equipment and materials.
- I can design a product and make sure that it looks attractive.
- I can choose a textile for both its suitability and its appearance.
- I can select the most appropriate tools and techniques for a given task.
- I can make a product which uses both electrical and mechanical components.
- I can work accurately to measure, make cuts and make holes.
- I can describe how food ingredients come together.

### **Year 4 'I can' statements:**

- I can use ideas from other people when I am designing.
- I can produce a plan and explain it.
- I can evaluate and suggest improvements for my designs.
- I can evaluate products for both their purpose and appearance.
- I can explain how I have improved my original design.
- I can present a product in an interesting way.
- I can measure accurately.
- I can persevere and adapt my work when my original ideas do not work.
- I know how to be both hygienic and safe when using food.

### **Year 5 'I can' statements:**

- I can come up with a range of ideas after collecting information from different sources.
- I can produce a detailed, step-by-step plan.
- I can suggest alternative plans; outlining the positive features and draw backs.
- I can explain how a product will appeal to a specific audience.
- I can evaluate appearance and function against original criteria.
- I can use a range of tools and equipment competently.
- I can make a prototype before making a final version.

- 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.

### **Key stage 2**

- 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.

- I show that I can be both hygienic and safe in the kitchen.