Design Technology Curriculum

In teaching children Design and technology, our intent is that they develop a passion for the subject and the ability to work constructively and productively independently and with others. Children will use their initiative and ask questions to become **confident** researchers.

Threshold concepts and skills

Master practical Skills

Design, make, evaluate and improve

Take inspiration from design throughout history

EYFS

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. The most relevant statements for Design Technology are taken from Physical Development and Expressive Arts and Design.

Breadth of study

KS1

- 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 such as cutting, shaping, joining and finishing.
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients.
- explore and evaluate a range of existing products.
- 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.

Cooking and nutrition

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

KS2

- 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, such as cutting, shaping, joining and finishing, accurately.
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients.
- 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 programme, 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 dishes using a range of cooking techniques.
- understand seasonality and how a variety of ingredients are grown, reared, caught and processes

Birth to three Design Technology Skills

Physical Development
T1 Sit without support.
T2 Develop manipulation and control.
T3 Explore different materials and tools.

Understanding the World
T4 Repeat actions that have an effect.
T5 Explore materials with different properties.

Expressive Arts and Design
T6 Start to make marks intentionally.
T7 Express ideas and feelings through making marks, and sometimes give a meaning to the marks they make.
T8 Explore different materials, using all their senses to investigate them. Manipulate and play with different materials.
T9 Use their imagination as they consider what they can do with different materials.
T10 Make simple models which express their ideas.

Nursery Design Technology Skills

Personal, social, emotional development
T1 Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.

Physical Development
T2 Use large-muscle movements to wave flags and streamers, paint and make marks.
T3 Choose the right resources to carry out their own plan.
T4 Use one-handed tools and equipment, for example, making snips in paper with scissors.

Understanding the World
T5 Explore how things work.

Expressive Arts and Design
T5 Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.
T6 Explore different materials freely, in order to develop their ideas about how to use them and what to make.
T7 Develop their own ideas and then decide which materials to use to express them.
Create closed shapes with continuous lines, and begin to use these shapes to represent objects

Reception Design Technology Skills

Physical Development

T1 Progress towards a more fluent style of moving, with developing control and grace.
T2 Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
T3 Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.

ELG: Fine Motor Skills
Use a range of small tools, including scissors, paintbrushes and cutlery

Expressive Arts and Design

T4 Explore, use and refine a variety of artistic effects to express their ideas and feelings.
T5 Return to and build on their previous learning, refining ideas and developing their ability to represent them.
T6 Create collaboratively, sharing ideas, resources and skills.

ELG: Creating with Materials
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.

Year 1 Design Technology Skills

Healthy Lunch **Textiles puppets** **Design and make a castle**

T1- I can design useful, pleasing products for myself and other users based on a design brief.
T2- I can generate, model and explain my ideas through talking, drawing, templates, mock ups and IT.
T3- I can select from and use a range of tools and equipment to perform practical tasks. Example- cutting, shaping, cooking, joining and finishing.
T4- I can select from and use a wide range of materials and components including construction, textiles and ingredients.
T5- I can explore and assess a range of existing products.
T6- I can assess my ideas and products against a design brief.
T7- I can build structures exploring how they can be made stronger, stiffer and stable.
T9 – I can say where some foods come from and give examples of food that is grown.
T10 – I can talk about where healthy foods come from.
T9 – I can understand the need for a variety of food in a diet.
T10 – I can understand that food has to be farmed, grown or caught.

Year 2 Design Technology Skills

Musical instruments **Egyption Mask** **Moving Vehicles**

T1- I can design useful, pleasing products for myself and other users based on a design brief.
T2- I can generate, model and explain my ideas through talking, drawing, templates, mock ups and IT.
T3- I can select from and use a range of tools and equipment to perform practical tasks. Example- cutting, shaping, joining and finishing.
T4- I can select from and use a wide range of materials and components including construction, textiles and ingredients.
T5- I can explore and assess a range of existing products.
T6- I can assess my ideas and products against a design brief.
T7 – I can investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable.
T8- I can explore and use mechanisms such as levels, sliders, wheels and axles in products

Year 3 Design Technology Skills

Animal Shelter

T1- I can use knowledge of existing products to design my own product.
T2- I can generate, develop, model and communicate my ideas through discussion, annotated sketches, and pattern pieces.
T3- I can safely measure, mark out, cut, assemble, and join with some accuracy.

Packaging

T4 – I can name the different food groups and name food from each group.
T5 – I can use a variety of ingredients and combine them to prepare food safely.
T6 – I can make suitable choices from a wide range of tools and unfamiliar materials to plan out the main stages of my product.
T7 – I can investigate and analyse existing products and those made considering a wide range of factors.
T8 – I can strengthen frames using diagonal struts

Food around the world

T8 – I can understand what makes a healthy and balanced diet and that different foods and drinks make different substances.
T9 – I understand seasonality and the advantages of eating locally produced food.
T10 – I can read and follow recipes which involve several skills, processes and techniques.

Year 4 Design Technology Skills

Textiles(bookmark)
Torch Making

Ship Building

T1- I can use research and design into existing products to inform the design of my own innovative product.
T2- I can designs using diagrams
T3 – I can use techniques which require more accuracy to cut, shape, join and finish my work.
T4 – I can use my knowledge of techniques and the functional and aesthetic materials to plan how to sue them.
T5 – I can consider how existing products and my finished product might be improved and how well they meet the needs of the design brief.
T6 – I can apply techniques I have learnt to strengthen structures and explore my own ideas.
T7 – I can understand and use electrical systems in products.
T9 – I can understand how mechanical systems such as levers and linkages and pneumatic systems create movement.

Year 5 Design Technology Skills

Food(Bread Making) Mini enterprise

T1 – I can understand the main food groups and different nutrients that are important for health.
T2 – I understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable.
T3 – I can select appropriate ingredients and use a wide range of techniques to combine them.
T4 - I can create prototypes to show ideas.
T5 - I can make careful and precise measurements so that joins, holes and openings are in the right place.
T6 - I can produce step by step plans demonstrating knowledge of different materials, tools, and techniques.
T7 - I can make detailed evaluations of products considering the views of others to improve work.
T8 –I can build more complex 3D structures and apply knowledge of strengthening techniques to make them stronger or more stable.
T10 – I can research existing products to inform the design of his/her own innovative product.
T1- I can confidently plan a series of healthy meals based on the principles of a healthy and varied diet
T2 –I can use information on food labels to inform choices.
T3 – I can research, plan and prepare and cook a savoury dish applying my knowledge of ingredients and technical skills.

Constructing Shelters

Year 6 Design Technology Skills

Fairgrounds
Make a cushion

Alarms

T4 – I can use research into famous designers and inventors to inform the design of my own innovative products.
T5 - I can generate, develop, model and communicate my ideas through discussion, annotated sketched, diagrams, prototypes, pattern pieces and computer aided design.
T6 – I can apply knowledge of materials and techniques to refine and rework my product to improve its functional properties.
T7 – I can use technical knowledge and accurate skills to problem solve during the making process.
T8 – I can use my knowledge of famous designs to further explain the effectiveness of products.
T9 – I can use a wide range of methods to strengthen, stiffen and reinforce complex structures.
T10 – I can apply understanding of computing to program, monitor and control my product.
T9 - I can understand how to use more complex mechanical and electrical systems.