

Design and Technology Programme of Study

Key Stage 1 and 2

Purpose of Study

The national curriculum states that;

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#

Our school curriculum will ensure;

Children will learn about designs and technology around them and how they work. They will learn to design, make and evaluate functional products for particular purposes and users. They will also learn where food comes from and how to prepare healthy foods safely.

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.

Our school curriculum will ensure;

- All children (Y1 – Y6) will design, make and evaluate at least one product per year.
- All children (Y1 – Y6) will make at least one healthy snack/meal, learning about food safety and preparations.
- Children will learn the correct vocabulary for the different techniques they are learning within their year group.
- Children will study designs link to their own projects.

Design and Technology Programme of Study

Key Stage 1 and 2

KS1

Designing and making

The national curriculum states that;

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].

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.

Our school curriculum will ensure;

Children design, make and evaluate at least one product per year, building on their skills to ensure their independence in Year 6 when designing, making and evaluating.

Year 1

Design – Children will design a product for a given criteria. They will use **diagrams** and **discussions** to develop their ideas and create their designs. Children will be shown a variety of different items which meet the same or similar criteria and will be encouraged to build their ideas based on these products.

Make – Children will make their designs using easily manipulated materials such as paper, card and textiles. They will use a variety of equipment which allows them to develop their knowledge of different ways to **attach** these materials including; split pins, tape, thread etc. They will also investigate different methods to introduce, **levers** and **sliders**.

Evaluate – Children will evaluate their work saying what they have done well and what they could improve. They will look at the work of other designers and say why their design differs and how this has affected the final product.

Year 2

Design – Children will design a product for a given criteria. They will use diagrams and discussions as in year 1 but will also develop these skills to include **mock ups** and **templates** to help create and improve their ideas and designs. Children will be shown a variety of different items which meet the same or similar criteria and will be encouraged to build their ideas based on these products.

Make – Children will make their designs using materials such as paper, card and textiles as in Year 1; they will also be introduced to more sturdy equipment such as wood and more **robust** textiles. They will develop their designs to ensure they are stronger, stiffer and more **stable**, using tools and equipment to shape and finish their products. Where appropriate the children will investigate lever, sliders, **wheels and axles**.

Evaluate – Children will evaluate their work saying what they have done well and what they could improve. They will look at the work of other designers and say why their design differs and how this has affected the final product.

Key Vocabulary

Year 1

diagrams, discussion, attach, levers, sliders

Year 2

mock ups, templates, robust, stable, wheels and axles

Cooking and nutrition

The national curriculum states that;

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

Our school curriculum will ensure;

Year 1

Children will learn where food comes from including its journey from farm to fork. (Local sources)

Each child will learn basic culinary skills using knives safely to prepare simple healthy recipes such as different types of salads

All children will learn basic food hygiene including hand washing techniques

Year 2

Children will develop their knowledge of the journey of food, concentrating on imported goods such as bananas.

Children will build on their culinary skills using knives safely to prepare simple healthy recipes; they will also learn about the different utensils available to help prepare more complex recipes which need heat sources such as soup.

All children will learn basic food hygiene and safety when using kitchen appliances.

Key Vocabulary

Year 1

local, culinary, healthy, hygiene

Year 2

imported, recipes, utensils

KS2

Designing and making

The national curriculum states that;

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 circuit incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

Our school curriculum will ensure;

Children design, make and evaluate at least one product per year, building on their skills to ensure their independence in Year 6 when designing, making and evaluating.

Lower Key Stage 2**Year 3**

Design – Children will design a product based on a given criteria which is aimed at a specific group of people. They will use discussions, **annotated** sketches and computer-aided designs to develop their ideas and create their designs. Where appropriate they will create simple **surveys** to ask possible consumers design questions.

Make – Children will be given a variety of different materials with different and will be encouraged to use the most appropriate materials for their design.

Evaluate – Children will evaluate their work saying what they have done well and what they could improve. They will look at the work of other designers and say why their design differs and how this has affected the final product. They will use peer assessment to critique and improve their work.

Year 4

Design – Children will build on skills learnt in Y3. They will design a product based on a given criteria which is aimed at a specific group of people. They will use discussions, annotated sketches, **prototypes**, and computer-aided designs to develop their ideas and create their designs. Where appropriate they will create simple surveys to ask possible consumers design questions.

Make – Children will look at a variety of different materials with different **functional properties** such as; semiconductors, magnetic materials, load bearing capacities Children will be encouraged to use the most appropriate materials for their design.

Evaluate – Children will evaluate their work saying what they have done well and what they could improve. They will look at the work of other designers and say why their design differs and how this has affected the final product. They will use peer assessment to critique and improve their work.

Key Vocabulary**Year 3**

annotated, surveys

Year 4

prototypes, functional properties

Our school curriculum will ensure;

Children design, make and evaluate at least one product per year, building on their skills to ensure their independence in Year 6 when designing, making and evaluating.

Upper Key Stage 2**Year 5**

Design – Children will build on skills learnt in Y4. They will design a product based on a given criteria which is aimed at a specific group of people. They will use discussions, annotated sketches, **cross-sectional** and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Where appropriate they will create **questionnaires** to ask possible consumers design questions. Where possible children will be encouraged to use electrical systems in their products [for example, series circuit incorporating switches, bulbs, buzzers and motors]

Make – Children will use variety of different materials with different functional properties such as; semiconductors, magnetic materials, load bearing capacities and will look at materials with different **aesthetic qualities** such as the colour, patterns and texture. Focussing on and enhancing the appearance of their finished project.

Evaluate – Children will evaluate their work saying what they have done well and what they could improve. They will look at the work of other designers and say why their design differs and how this has affected the final product. They will use peer assessment to **critique** and improve their work.

Year 6

Design and make – Children will build on skills learnt in former year groups. They will be encouraged to research the different materials available, thinking carefully about their products needs and appearance whilst being encouraged to make their own choices. They will also be encouraged to use a variety of different methods to design and make their product and will be encouraged to choose the method they feel most appropriate for their project.

Evaluate – Children will evaluate their work saying what they have done well and what they could improve. They will look at the work of other designers and say why their design differs and how this has affected the final product. They will use both self and peer assessment to critique and improve their work.

Key Vocabulary**Year 5**

critique, aesthetic qualities, questionnaires, cross-sectional

Year 6

vocabulary based on specific topic and recapping of previously learnt vocabulary

Cooking and nutrition

The national curriculum states that;

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.

Our school curriculum will ensure;

Throughout Key Stage 2 children will be taught how to use electrical equipment safely, learning how to turning a hob and oven on and off, using sharp knives and planning and preparing simple healthy meals including but not limited to; beans on toast, sandwiches and smoothies.

Year 3

Children will learn different food types; [fruit and vegetables](#), [dairy](#), [meats](#), [fats](#), [sugars and grains](#).

Each child will learn basic cooking methods; planning and preparing a healthy recipe which where possible will be linked to topics.

All children will learn basic food hygiene and safety.

Year 4

Children will build on skills learnt in Year 3

They will recap the different food types and their importance when applying the principles of [nutrition](#) and healthy eating.

Each child will learn basic cooking methods; planning and preparing a healthy recipe which where possible will be linked to topics.

All children will learn basic food hygiene and safety.

Year 5

Children will learn about [seasonable](#) ingredients available and how a variety of ingredients are grown, [reared](#), caught and processed.

Each child will learn basic cooking methods; planning and preparing a healthy recipe which where possible will be linked to topics.

Children will begin to learn about [affordability](#) when planning and preparing healthy meals.

Children will begin to learn about the importance of [presentation](#) when serving food.

All children will learn basic food hygiene and safety.

Year 6

Children will be given the opportunity to use the skills and knowledge they have been learning throughout KS2 to plan, prepare and serve a healthy meal. This meal will then be evaluated, both by their peers and themselves, concentrating on the affordability, presentation and taste of their meal.

Key Vocabulary

KS2

All children will learn the correct vocabulary for any cooking methods used which includes but is not limited to; boiling, frying, mixing, whisking, separating, toasting, weighing, measuring, prepping, peeling, poaching.

Year 3

fruit and vegetables, dairy, meats, fats, sugars and grains.

Year 4

nutrition

Year 5

seasonable, affordability, presentation

Year 6

vocabulary based on specific topic and recapping of previously learnt vocabulary