Dr Radcliffe's CE Primary School

Curriculum Information

Design and Technology

Intent

At Dr Radcliffe's school our intent is that all children will develop an understanding of how Design and technology is used in society. How it is an inspiring, rigorous and practical subject. How using creativity and imagination sparks design and technology allowing for products to be made that solve real and relevant problems within a variety of contexts.

We want our children to be able to consider their own and others' needs, wants and values. To acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art.

We want our children to learn how to take risks, become resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, our children will develop a critical understanding of its impact on daily life and the wider world.

Our intent is that all children understand how high-quality design and technology makes an essential contribution to the creativity, culture, wealth and well-being of everyone.

Implementation

At Dr Radcliffe's we will:

Design

In KS1 we will give all children the opportunity to design purposeful, functional, appealing products for themselves and others, based on design criteria. We will help the children generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

In KS2 the children will use research to help develop their designs. They will generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Make

In KS1 the children will select from and use a range of tools and equipment to perform practical tasks. They will select from and use a wide range of materials and components, including construction materials, textiles and ingredients.

In KS2 the children will select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They will 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

In KS1 children will investigate and analyse a range of existing products. They will be given opportunities to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They will be taught how key events and individuals in design and technology have helped shape the world.

In KS2 children will explore and evaluate a range of existing products. They will evaluate their ideas and products against design criteria.

Technical knowledge

In KS1 children will be given opportunities to build structures, explore how they can be made stronger, stiffer and more stable. They will explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

All children will through a variety of creative and practical activities be taught the skills needed to engage in the process of designing and making. They will work in a range of relevant contexts, the home, school and the wider environment.

In KS2 children will apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They will understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They will understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].

Cooking and nutrition

At Dr Radcliffe's as part of the children's work with food, they will be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking and opening a door to one of the great expressions of human creativity.

In KS1 children will learn the basic principles of a healthy and varied diet and to understand where food comes from.

In KS2 children will understand and apply the principles of a healthy and varied diet. They will prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques and understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

Impact

The impact of our curriculum will mean:
Children enjoy being creative, technical and practical. They will demonstrate the expertise needed to perform everyday tasks confidently and are able to participate successfully in an increasingly technological world.
Children will have a repertoire of knowledge and skills that allow them to design and make high-quality prototypes and products for a wide range of uses.
Children will be able to critique, evaluate and test their ideas and products and the work of others.
Children will be able to understand the principles of nutrition and cooking.

Key Stage 1 National Curriculum Expectations

Design

Pupils should be taught 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.

Make

Pupils should be taught to:

- 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

Pupils should be taught to:

- explore and evaluate a range of existing products;
- evaluate their ideas and products against design criteria.

Technical Knowledge

Pupils should be taught to:

- 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.

Cooking and Nutrition

Pupils should be taught to:

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

Key Stage 2 National Curriculum Expectations

Design

Pupils should be taught to:

- 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

Pupils should be taught to:

- 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

Pupils should be taught to:

- 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

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.

	KS1	LKS2	UKS2
Design	**KS1 Design and Technology National Curriculum** 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. 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]. Children design purposeful, functional, appealing products for themselves and other users based on design criteria. They generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Children can: a use their knowledge of existing products and their own experience to help generate their ideas; b design products that have a purpose and are aimed at an intended user; c explain how their products will look and work through talking and simple annotated drawings; d design models using simple computing software; e plan and test ideas using templates and mock-ups; f understand and follow simple design criteria; g work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.	**LKS2 Design and Technology National Curriculum** 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. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. Children 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. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. Children can: a identify the design features of their products that will appeal to intended customers; b use their knowledge of a broad range of existing products to help generate their ideas; c design innovative and appealing products that have a clear purpose and are aimed at a specific user; d explain how particular parts of their products work; e use annotated sketches and cross-sectional drawings to develop and communicate their ideas; f when designing, explore different initial ideas before coming up with a final design; g when planning, start to explain their choice of materials and components including function and aesthetics; h test ideas out through using prototypes; i use computer-aided design to develop and communicate their ideas (see note on p. 1); j develop and follow simple design criteria; k work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment.	**UKS2 Design and Technology National Curriculum** 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. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. Children 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. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. Children can: a use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market; b use their knowledge of a broad range of existing products to help generate their ideas; c design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user; d explain how particular parts of their products work; e use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; f generate a range of design ideas and clearly communicate final designs; g consider the availability and costings of resources when planning out designs; h work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.

Make	**KS1 Design and Technology National Curriculum** 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 making. Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. They select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Children can: Planning a with support, follow a simple plan or recipe; b begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer; c select from a range of materials, textiles and components according to their characteristics; Practical skills and techniques d learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures; e use a range of materials and components, including textiles and food ingredients; f with help, measure and mark out; g cut, shape and score materials with some accuracy; h assemble, join and combine materials, components or ingredients; i demonstrate how to cut, shape and join fabric to make a simple product; j manipulate fabrics in simple ways to create the desired effect; k use a basic running stitch; l cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups; m begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decoratio ns.	**LKS2 Design and Technology National Curriculum** 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 making. Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately. They 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. Children can: Plan a with growing confidence, carefully select from a range of tools and equipment, explaining their choices; b select from a range of materials and components according to their functional properties and aesthetic qualities; c place the main stages of making in a systematic order; Practical skills and techniques d learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; e use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; f with growing independence, measure and mark out to the nearest cm and millimetre; g cut, shape and score materials with some degree of accuracy; h assemble, join and combine material and components with some degree of accuracy; i demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product; j join textiles with an appropriate sewing technique; k begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.	**UKS2 Design and Technology National Curriculum** 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 making. Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They 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. Children can: Planning a independently plan by suggesting what to do next; b with growing confidence, select from a wide range of tools and equipment, explaining their choices; c select from a range of materials and components according to their functional properties and aesthetic qualities; d create step-by-step plans as a guide to making; Practical skills and techniques e learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; f independently take exact measurements and mark out, to within 1 millimetre; g use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; h cut a range of materials with precision and accuracy; i shape and score materials with precision and accuracy; j assemble, join and combine materials and components with accuracy; k demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product; l join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch; m refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape.

Evaluate	**KS1 Design and Technology National Curriculum** 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. Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. Children can: a explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations; b explain positives and things to improve for existing products; c explore what materials products are made from; d talk about their design ideas and what they are making; e as they work, start to identify strengths and possible changes they might make to refine their existing design; f evaluate their products and ideas against their simple design criteria; g start to understand that the iterative process sometimes involves repeating different stages of the process.	**LKS2 Design and Technology National Curriculum** 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. Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world. Children can: a explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; b explore what materials/ingredients products are made from and suggest reasons for this; c consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product; d evaluate their product against their original design criteria; e evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.	**UKS2 Design and Technology National Curriculum** 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. Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world. Children can: a complete detailed competitor analysis of other products on the market; b critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make; c evaluate their ideas and products against the original design criteria, making changes as needed.

Technical Knowledge	**KS1 Design and Technology National Curriculum** Children build structures, exploring how they can be made stronger, stiffer and more stable. They explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Children can: a build simple structures, exploring how they can be made stronger, stiffer and more stable; b talk about and start to understand the simple working characteristics of materials and components; c explore and create products using mechanisms, such as levers, sliders and wheels.	**LKS2 Design and Technology National Curriculum** Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Children can: a understand that materials have both functional properties and aesthetic qualities; b apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; c understand and demonstrate how mechanical and electrical systems have an input and output process; d make and represent simple electrical circuits, such as a series and parallel, and components to create functional products; e explain how mechanical systems such as levers and linkages create movement; f use mechanical systems in their products.	**UKS2 Design and Technology National Curriculum** Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Children can: a apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; b understand and demonstrate that mechanical and electrical systems have an input, process and output; c explain how mechanical systems, such as cams, create movement and use mechanical systems in their products; d apply their understanding of computing to program, monitor and control a product.

Cooking and Nutrition	**KS1 Design and Technology National Curriculum** Children use the basic principles of a healthy and varied diet to prepare dishes. They understand where food comes from. Children can: a explain where in the world different foods originate from; b understand that all food comes from plants or animals; c understand that food has to be farmed, grown elsewhere (e.g. home) or caught; d name and sort foods into the five groups in the Eatwell Guide; e understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why; f use what they know about the Eatwell Guide to design and prepare dishes.	**LKS2 Design and Technology National Curriculum** Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Children can: a start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world; b understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically; c with support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven; d use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking; e explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes; f understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body; g prepare ingredients using appropriate cooking utensils; h measure and weigh ingredients to the nearest gram and millilitre; i start to independently follow a recipe; j start to understand seasonality.	**UKS2 Design and Technology National Curriculum** Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Children can: a know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world; b understand about seasonality, how this may affect the food availability and plan recipes according to seasonality; c understand that food is processed into ingredients that can be eaten or used in cooking; d demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source; e demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling; f explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes; g adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; h alter methods, cooking times and/or temperatures; i measure accurately and calculate ratios of ingredients to scale up or down from a recipe; j independently follow a recipe.

Knowledge, Skills and Vocabulary Progression

YEAR 1

Pupils should be taught - Key stage 1

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.

Cooking and Nutrition

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

Cooking and Nutrition

- **Ice lollies- Food safety**
- **Pumpkin soup, pumpkin biscuits**

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
AUTUMN TERM		SPRING TERM		SUMMER TERM	

Design and technology

Option 1 Option 2

***New* Structures: Stable structures**

Exploring the stability of structures and making a stable pencil pot for a specific user.

Design and technology

Option 1 Option 2

***New* Mechanisms: Matching slider game**

Making slider mechanisms to create a matching slider game.

Design and technology

Option 1 Option 2

Textiles: Simple stitches

Learning to make stitches with a needle and thread.

Design and technology

Cooking and nutrition: Smoothies

Preparing foods by cutting and juicing and selecting fruits and vegetables to create a smoothie to meet a design brief.

Design and technology

Option 1 Option 2

***New* Mechanisms: Wheels and axles**

Making wheels and an axle to create a pull-along toy.

YEAR 2

Pupils should be taught - Key stage 1

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.

Cooking and Nutrition

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

Cooking and Nutrition – Autumn Term

- **Fruit kebabs**
- **Hot cooking**

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
AUTUMN TERM		SPRING TERM		SUMMER TERM	

Design and construct a castle from 3D shapes / recycled materials with moving parts

Design and technology

Mechanisms: Making a moving monster

This unit hub can be used to inform your medium term plan and to navigate to related resources.

Design and technology

Cooking and nutrition: Balanced diet

Discovering the importance of a balanced diet and creating a tasty, balanced wrap to meet a design brief.

Design and technology

Mechanisms: Fairground wheel

Designing and creating a functional fairground wheel so that the wheel rotates and the structure stands freely.

Design and technology

Option 1 Option 2

Structures: A chair for a bear

Testing the strength of materials and making a strong and stable chair.

Design and technology

Textiles: Pouches

This unit hub can be used to inform your medium-term plan and to navigate to related resources.

YEAR 3

Pupils should be taught - 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

- 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.

Cooking and Nutrition – Spring Term

- **Bread making**
- **Lassi making**

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
AUTUMN TERM		**SPRING TERM**		**SUMMER TERM**	

Designing kites
Sewing

Design and technology

Option 1 Option 2

Textiles: Cushions

Learning how to use cross-stitch and appliqué when designing and making a cushion.

Design and technology

Option 1 Option 2

Pneumatic toys

This unit hub can be used to inform your medium term plan and to navigate to related resources.

Tile mosaic with ceramics

Design and technology

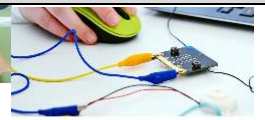
Electrical systems: Electric poster

Introducing information design and developing an electric museum display based on the Romans.

Design and technology

Cooking and nutrition: Eating seasonally

Learning about seasonal foods and using their understanding to create a seasonal food tart.



Design and technology

Option 1 Option 2

Structures: Product packaging

Exploring how 3D shell structures are created from nets and used in packaging.

Design and technology

Digital world: Wearable technology

Designing digital wearable technology and developing a program and housing for a Micro:bit.

YEAR 4

Pupils should be taught - 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

- 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.

Cooking and Nutrition – Spring Term

- **Pizza**
- **Cultural food making**

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
AUTUMN TERM		SPRING TERM		SUMMER TERM	

Design and technology

Option 1 Option 2

Structure: Pavilions

This unit hub can be used to inform your medium-term plan and to navigate to related resources.

Design and technology

Option 1 Option 2

Textiles: Egyptian collars

Learning how to cross-stitch and appliqué to decorate and assemble Egyptian collars, which represent the children's unique personalities.

Design and technology

Mechanical cars

Making and designing mechanical cars that use different methods of movement.

Design and technology

Cooking and nutrition: Adapting a recipe

Learning a basic biscuit recipe and adapting it for a new audience while considering the cost of ingredients and other expenses against a set...

Design and technology

Electrical systems: Torches

Evaluating a range of existing torches and designing a functional torch for a target audience.

Design and technology

Textiles: Fastenings

This unit hub can be used to inform your medium-term plan and to navigate to related resources.

YEAR 5

Pupils should be taught - 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.

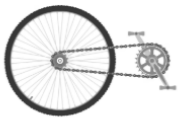
Cooking and Nutrition

- 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.

Cooking and Nutrition – Autumn Term

- **Quiche**
- **Cultural food making**

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
AUTUMN TERM		SPRING TERM		SUMMER TERM	



Design and technology

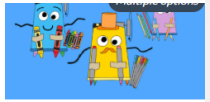
Gears and pulleys

Making and designing gear and pulley systems and exploring their uses.

Design and technology

Digital world: Monitoring devices

Applying computing skills to program a Micro:bit animal monitor and using 3D CAD tools in Tinkercad to design a case, housing or stand.



Design and technology

Option 1 Option 2

Electrical systems: Doodlers

Investigating an existing motorised product and problem-solving to understand its construction before developing their own.

Design and technology

Textiles: Stuffed toys

This unit hub can be used to inform your medium term plan and to navigate to related resources.

Design and technology

Structure: Bridges

Exploring how bridge designs and materials affect strength and stability through building a wooden truss bridge.

Design and technology

Cooking and nutrition: Developing a recipe

Learning a simple bolognese recipe and adapting it to improve nutritional content.

YEAR 6

Pupils should be taught - 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].

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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]
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Cooking and Nutrition

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Cooking and Nutrition – Summer Term

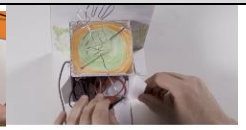
- **Pasty making**
- **Cultural food making**

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
AUTUMN TERM		SPRING TERM		SUMMER TERM	

Design and technology

Mechanical systems: Automata toys

Developing functional automata toys for a window display using cams, followers and axles to create movement.



Design and technology

Electrical systems: Steady hand game

This unit hub can be used to inform your medium term plan and to navigate to related resources.

Design and technology

Option 1 Option 2

***New* Textiles: Bags**

Designing pattern pieces, making a bag for a specific user and thinking about aesthetics and functionality.

Design and technology

Structures: Playgrounds

This unit hub can be used to inform your medium-term plan and to navigate to related resources.

Design and technology

Cooking and nutrition: Come dine with me

Selecting three recipes to create a three course meal.

Design and technology

Digital world: Navigating the world

This unit hub can be used to inform your medium-term plan and to navigate to related resources.