



Design and Technology 2023

Curriculum Intent Statement

National Curriculum

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.

Working as a Designer			
Design	Make	Evaluate	Apply
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

ELGs related to Subject and Topics

Listening, Attention and Understanding

- Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions;

- Make comments about what they have heard and ask questions to clarify their understanding;
- Hold conversation when engaged in back-and-forth exchanges with their teacher and peers.

Speaking ELG

- Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary;
- Offer explanations for why things might happen, making use of recently introduced vocabulary
- Express their ideas and feelings about their experiences

Managing Self ELG

- Be confident to try new activities and show independence, resilience and perseverance in the face of challenge;
- Explain the reasons for rules, know right from wrong and try to behave accordingly;
- Manage their own basic hygiene and personal needs, including dressing, going to the toilet, and understanding the importance of healthy food choices.

Building Relationships ELG

- Work and play cooperatively and take turns with others;
- Show sensitivity to their own and to others' needs.

Fine Motor Skills ELG

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

Understanding the World Past and Present

- Talk about the lives of the people around them and their roles in society;
- Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class;
- Understand the past through settings, characters and events encountered in books read in class and storytelling;

People Culture and Communities ELG

- Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts, and maps;
- Know some similarities and differences between different religious and cultural communities in this country, drawing on their experiences and what has been read in class;
- Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps.

The Natural World ELG

- 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.

Expressive Arts and Design Creating with Materials ELG

- 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;
- Make use of props and materials when role playing characters in narratives and stories.

		Topic	Year 1		Topic	Year 2	
Autumn	HT1	Mechanisms Block A	What children will learn: Common uses of sliders, different methods to create card sliders and how sliders can create simple mechanisms.	What children will be able to do: Design and make a slider product and evaluate the success of their outcomes and recommend improvements	Textiles Block A	What children will learn: How to cut out shapes which have been created by using a template. How to use a range of basic sewing skills.	What children will be able to do: Use a template to transfer a pattern. Cut out and join fabric shapes using a template.
	HT2	Structures Block B	What children will learn: A freestanding structure is a structure that stands on its own foundation or base without attachment to anything else	What children will be able to do: Build structures that are freestanding using a range of different materials. They will use a range of materials to explore and reason about why some structures may fall.	Food and Nutrition Block B	What children will learn: Why vegetables are so important to our health. What processed foods are.	What children will be able to do: Prepare a range of salad vegetables. Shape and season a bread snack.
Spring	HT3	Food and Nutrition Block C	What children will learn: Why colourful food can be healthier. How different foods can affect their senses	What children will be able to do: Peel, chop and grate a selection of vegetables Modify food to suit their food sense.	Mechanisms Block C	What children will learn: How wheels and axles work together. The size and position of wheels affects how they move.	What children will be able to do: Create a simple wheel mechanism. Use wheel mechanisms to propel a simple vehicle.
	HT4	Understanding Materials Block D	What children will learn: Building materials have different properties which enable them to be used for different purposes	What children will be able to do: Identify, sort and select materials that can be used in construction Combine materials	Understanding Materials Block D	What children will learn: Materials can be modified to become waterproof. Origami comes from the Japanese words: ori – folding and kami – paper	What children will be able to do: Make paper waterproof. Transform flat paper by folding and creasing to form a hat.
Summer	HT5	Textiles Block E	What children will learn:	What children will be able to do:	Food and Nutrition Block E	What children will learn:	What children will be able to do:

			Fabric can be joined together using a running stitch, the types and names of tools needed for sewing	Create a running stitch, select tools for sewing and thread a needle		The difference between fresh food and ultraprocessed foods.	Shape and form ingredients to make delicious food. Use a range of culinary techniques.
	HT6	Food and Nutrition Block F	What children will learn: The importance of including a range of vegetables in a diet	What children will be able to do: Peel, grate, season and breadcrumb a range of vegetables	Structures Block F	What children will learn: Paper becomes stronger when it is folded. A load is the amount of weight a structure must carry.	What children will be able to do: Fold paper to increase strength and stability. Test and record how much weight paper can hold.

		Topic	Year 3		Topic	Year 4	
Autumn	HT1	Textiles Block A	What children will learn: Fabric can be stiffened. Stiffened fabric can hold a form.	What children will be able to do: Select and apply solutions to stiffen fabric. Make a box using stiffened fabric.	Food and Nutrition Block A	What children will learn: Processed foods have many added ingredients.	What children will be able to do: Make, roll and shape bread dough. Make a soup.
	HT2	Food and Nutrition Block B	What children will learn: What is meant by the term balanced. Why fresh foods are better.	What children will be able to do: What is meant by the term balanced. Why fresh foods are better.	Mechanisms Block B	What children will learn: Types of hinges and the related terminology. Common uses for hinges.	What children will be able to do: Make a variety of model hinges. Make and evaluate hinged products using modelling materials.
Spring	HT3	Mechanisms Block C	What children will learn: Types of levers and linkages. Key terminology relating to levers and linkages. How levers and linkages can	What children will be able to do: Design and make simplistic lever and linkage products. Evaluate the success of their outcomes and	Textiles Block C	What children will learn: Fastenings have different functions. A shank provides a small amount of space between the button and fabric.	What children will be able to do: Select appropriate fastenings and attach them to fabric. Make a shank for a button.

			change the direction of movement.	recommend improvements.			
	HT4	Food and Nutrition Block D	What children will learn: How food can help their body and mind. How to prepare and cook a range of vegetables.	What children will be able to do: Peel and grate a range of vegetables. Add flavour and texture to foods.	Structures Block D	What children will learn: Triangles provide stability in a structure. Structural engineers work with architects to ensure structures withstand forces.	What children will be able to do: Make triangles to form and join trusses. Identify the forces that affect structures.
	HT5	Systems Block E	What children will learn: Different types of energy. Why designers need to carefully consider energy sources.	What children will be able to do: Identify how things are powered. Suggest appropriate energy sources for design problems.	Electrical Systems Block E	What children will learn: A switch is an interruption in a circuit. Switches are widely used in a range of products.	What children will be able to do: Incorporate different types of switches into circuits to perform a function.
Summer	HT6	Structures Block F	What children will learn: Bridges are structures that allow people and vehicles to cross over an open space. Towers, piers and arches provide strength to a bridge.	What children will be able to do: Design and build a beam bridge that can hold the weight of 100 pennies. Identify and name parts of a bridge.	Food and Nutrition Block F	What children will learn: That cheap processed food often contains additives, salt and sugar, which makes it less healthy than unprocessed food.	What children will be able to do: Peel, grate and chop vegetables to make economical, tasty and healthy food.

		Topic	Year 5		Topic	Year 6	
Autumn	HT1	Food and Nutrition Block A	What children will learn: Some foods and key ingredients from other cultures. How other cultures' food can be nutritious.	What children will be able to do: Make, roll and cook a flatbread. Prepare a range of vegetables. Present foods to a high standard.	Food and Nutrition Block A	What children will learn: What street foods are. How snacks can be good foods to eat	What children will be able to do: Make a burrito. Make and roll bread dough. Make a savoury pastry.
	HT2	Systems Block B	What children will learn:	What children will be able to do:	Mechanisms Block B	What children will learn: Types of pulley systems and gears. Common uses	What children will be able to do: Design and make a model Ferris wheel

			Technology can be used to program and control a product.	Combine elements of their design knowledge to fulfil a brief.		of pulleys and gears. How pulleys and gears can create simple mechanisms and change direction of movement.	powered by gears. Evaluate the success of their outcomes and recommend improvements.
Spring	HT3	Textiles Block C	What children will learn: How to waterproof cotton fabric. Which fabrics are both functional and hardwearing.	What children will be able to do: Use beeswax to waterproof cotton fabric. Repurpose a pair of jeans.	Food and Nutrition Block C	What children will learn: The difference between slow release and quick release carbohydrates. How food can improve their mood and energy levels.	What children will be able to do: Dice, slice, peel, grate and cook a range of vegetables. Make a sauce and a stock. Use height and colour to improve the visual appeal of food.
	HT4	Food and Nutrition Block F	What children will learn: How foods can be used as medicines. How eating food from different countries can help us be healthy.	What children will be able to do: Roll and shape ingredients. Slice and ribbon a range of vegetables. Stir-fry vegetables.	Structures Block D	What children will learn: Structures can be supported with guy lines and flying buttresses. The shorter the piece of spaghetti, the stronger it will be.	What children will be able to do: Construct a flying buttress to support a tower. Use appropriate lengths of spaghetti to increase strength and stability.
Summer	HT5	Structures Block E	What children will learn: Engineers use a range of methods to strengthen and reinforce structures.	What children will be able to do: Identify and describe ways that frames are strengthened and reinforced.	Electrical Systems Block E	What children will learn: More than one switch can be used to change the functionality of a product.	What children will be able to do: Use switches to adapt a product in response to a design brief.
	HT6	Mechanisms Block D	What children will learn: Types of gears and terminology relating to gears. Common uses of pulleys and gears. How pulleys and gears can	What children will be able to do: Design and make products that use pulleys and gears to lift loads. Evaluate the success of their outcomes and	Textiles Block F	What children will learn: Plastic waste can be recycled and repurposed into practical, useful items.	What children will be able to do: Simple crochet. Use plastic bags and snack packets to create practical items.

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