Confidence. Persistence. Getting Along. Organisation. Resilience.

Design and Technology Policy

Vision

Edisford Primary School seeks to broaden children's experiences, ensuring that they build personal characteristics alongside strong academic progress. We do this through a first-hand learning approach wherever possible, so that children learn key characteristics for success, as well as teaching core skills and knowledge associated with each subject.

Intent

Our Design and Technology curriculum aims to teach children how and why things work. We want them to be able to develop the skills to think, design and shape their future. We want them to understand how technology is changing society and how design and technology can bring about further change. We want them to design and make in response to real needs.

Core Aspects

Central to our Design and Technology curriculum are that children study three core aspects:

1. Designing
2. Making
3. Evaluating

Designing

This includes not just the design process, but also researching products that already exist in order to gain experience of how products are made.

We introduce the term 'design' from Reception, then we begin using the term 'design brief' and 'design criteria' from Year 3.

Design – A combination of diagrams, labels, captions and step-by-step instructions to show the look and function or workings of a product.

Design brief – A plan of how to execute how to manufacture a product.

Design criteria – The explicit goals that a project must achieve, solving problems.

Design Research

It is important for children to gain an understanding of how products that already exist have been made. Throughout our curriculum, we have built in opportunities for children to build their experiential learning by looking at how existing products work. They also consider the impact these products have had on the world. They learn through research that design and technology can have a lasting impact on the world.

Diagrams

During the design process it is important that children learn how to draw their designs effectively. In our curriculum, there are opportunities for children to draw cross-sections and explosive diagrams, using them to plan a series of steps to make their finished product. This develops thinking skills and planning ahead to anticipate what needs to be done next. Making links and problem-solving gives children the opportunity to be innovative and creative.

Making

We want children to work with products in the first-hand, not simply observe from afar. This is the only way that they can build technical skills – by doing. This fits into our Edisford philosophy, by teaching through first-hand experience.

DT Projects, Endeavours and Flairs

In each DT project, Flair or Endeavour, children make their own product. In Flairs and Endeavours, we teach children in small groups, so that the quality of teaching and learning is higher – children have more support from the teacher, working through a series of steps to make a product. The finished products are of a high quality as a result and children learn a great deal through their experiential learning. Children have access to the right equipment and tools and can build their technical skills because they have more opportunity to use them.

Make – to produce something from a design, according to the design brief and criteria.

Manufacture – to create products with the help of equipment.

Process – the method that a product is manufactured with.

Tinkering and modifying – making small changes to adapt the design for the better, solving problems.

Evaluating

A critical part of the design process for children to experience is the chance to evaluate their product. This allows the designer to assess what went well and what could be improved. It allows them the opportunity to behave like a real designer, thinking critically and suggesting improvements. It enables children to see that design is not finite and that it paves the way for new ideas. Ever since the first humans made tools to make things, technology has been moving forward. Through evaluating their products, children experience that technology marches on.

Implementation

Coverage

We have designed a Design and Technology curriculum that covers a range of skills, knowledge and understanding.



Design and Technology Long Term Plan

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year R	Expressive Arts and Design ELG: Creating with Materials Children at the expected level of development will: • 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.			Physical Development ELG: Fine Motor Skills Children at the expected level of development will: • Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases. • Use a range of small tools, including scissors, paint brushes and cutlery. • Begin to show accuracy and care when drawing.		
Year 1			Moving Pictures (Mechanisms)			Castle Construction (Mechanisms/Structures)
Year 2	Flying Machines (Designing Structures)				Moving Toys (Mechanisms)	
Year 3			Cook an Omelette! (Cooking and Nutrition)			Trojan Horses (Mechanisms)
Year 4			Pasta Italia! (Cooking and Nutrition)		Multiple Cam Moving Toys (Mechanisms)	
Year 5	3-D Model Vehicles (Computer-aided design)			Soup of the Day! (Cooking and Nutrition)		
Year 6		Dioramas (Mechanisms and Electrical Systems)			Motorised Vehicles (Mechanisms/Electrical Systems)	Stir Fry (Cooking and Nutrition)

Each class has two focused Design and Technology projects each year. In Key Stage 1, children look at Mechanisms and Structures. They cover Cooking and Nutrition and Textiles in their Flairs badges. In Key Stage 2, children cover one Design and Technology project on Cooking and Nutrition each year and another project on Computer-Aided Design,

Structures, Mechanisms or Electrical Systems. In Endeavours, children study in a more focused way Structures, Mechanisms and Textiles.

EYFS

In Reception, Design and Technology opportunities are woven into each half term theme. They cover a range of mechanisms, structures and cooking. They design, make and evaluate each product.

Design and Technology Overview

Year	DT Project 1	DT Project 2	Flairs/Endeavours
YR	**Examples include a range of Structures, Cooking and Nutrition, Textiles, 3-D design, Mechanisms:** Fruit kebabs, finger puppets, junk models (rockets), making pizza, bird feeders, computer-aided design, global food), boats, peg bees, allotment fruit and vegetables, design a healthy meal, terracotta army design, winter dens for hibernating animals, moving parts cards, gingerbread men, making bread for harvest. Plan, design, make, evaluate.		
Y1	**Moving Pictures** (Mechanisms) (Scenes from Victorian Seaside)	**Castle Construction** (Structures & Mechanisms) (Castles, Drawbridges, Turrets and Walkways)	**Flair for Textiles:** Weaving, Picture Frames, Hair Clips, Bookmarks, Felt Animals **Flair for Gastronomy:** Safety, Healthy Meals, Personal Hygiene, Making Chips, Healthy Energy Bar, Smoothies, Tomato/Basil Bruschetta, Egg Muffins
Y2	**Flying Machines** (Structures)	**Cam Moving Toys** (Mechanisms)	**Flair for Textiles:** Weaving, Pictures Frames, Hair Clips, Bookmarks, Felt Animals **Flair for Gastronomy:** Safety, Healthy Meals, Personal Hygiene, Making Chips, Healthy Energy Bar, Smoothies, Tomato/Basil Bruschetta, Egg Muffins
Y3	**Trojan Horses** (Mechanisms & Structures) (Wheels, chassis and axles)	**Cook an Omelette!** (Cooking and Nutrition)	**Artisan Endeavour:** Construct Big Ben (Structures), Periscopes (Scientific Instruments), Balloon Cars (Mechanisms) **People Skills Endeavour:** Mini Quiches
Y4	**Multiple Cam Moving Toys** (Mechanisms)	**Pasta Italia!** (Cooking and Nutrition)	**Artisan Endeavour:** Construct Big Ben (Structures), Periscopes (Scientific Instruments), Balloon Cars (Mechanisms) **People Skills Endeavour:** Mini Quiches
Y5	**3D Model Vehicles** (Computer-Aided Design)	**Soup of the Day!** (Cooking and Nutrition)	**Artisan Endeavour:** Make a Teddy (Textiles) **People Skills Endeavour:** Baking Scones
Y6	**Dioramas** (Structures/Mechanisms/Electrical Systems)	**Motorised Vehicles** (Electrical Systems) **Stir Fry** (Cooking & Nutrition)	**Artisan Endeavour:** Make a Teddy (Textiles) **People Skills Endeavour:** Baking Scones

Structures

Children build a range of structures, for example, Elizabeth Tower, Castles, Rockets, Flying Machines, Periscopes. They learn about force, gravity and drag (Flying Machines), stability and strength (Castles, Rockets, Elizabeth Tower) and joining and reinforcing (Elizabeth Tower, Castles, Rockets), reflecting, angles and light (Periscopes)

Mechanisms

Children assemble mechanisms such as pulleys (Castle drawbridges), cams (Moving Toys), vehicles (Balloon Cars and Trojan Horses) and moving parts to pictures (Moving Pictures).

Textiles

Children learn running stitches, fastening off and blanket stitches. They make a range of products such as felt animals, bookmarks and teddies. In Year 5 and 6, children use sewing machines to join fabric together.

Computer-aided Design

Children study with the use of a computer program how to design 3-D model vehicles. They learn how to control the design.

Electrical Systems

Children combine electrical systems into their products to give them an added design facet (Dioramas) or to make their products move (Motorised Vehicles).

Cooking and Nutrition

Children make a range of recipes, predominantly savoury. This is because we want children to be able to cook nourishing meals that will give them core skills to keep themselves healthy. In Key Stage 1, children work in small Flairs groups to make chips, bruschetta, egg muffins, smoothies and healthy energy bars. They learn where food comes from and why it is important to eat healthily. In Key Stage 2, children make an omelette, pasta and sauce, soup and a stir fry. They learn about irreversible changes, why it important to cook meat through thoroughly and to use a range of vegetables to keep our bodies healthy.

Health and Safety and Hygiene

In cooking and Flair for Gastronomy, children learn key skills to keep themselves safe. They learn that it is important to wash hands when handling food.

Impact

Subject Monitoring

The subject leader monitors the quality of teaching and learning in Design and Technology in a continuous cycle of improvement throughout the year. They use:

- Work scrutiny
- Observations
- Pupil interviews

These give the subject leader a view of how well the subject is being taught and any changes that need to be made. The subject leader feeds back to the team any pertinent evaluations.

Assessment

Design and Technology is summatively assessed at two points in the year:

Mid-point (February)

End-point (June)

Teachers use subject assessment statements for DT to help them judge how each child is achieving. There are three assessments:

- Not working at the expected standard
- At the expected standard
- Greater depth within the expected standard

Each unit is assessed formatively as children complete them. Teachers do this by using their own judgements.

Continuous Professional Development

Design and Technology is a specialised subject requiring good quality training. We recognise this and strive to continuously evaluate the training needs of staff in order to deliver a high quality curriculum. Training takes place in staff meetings and through further research.

The subject leader keeps abreast of new research and feeds this back to the team.

SEND

Children with SEND are given the same opportunities as their peers. Learning is adapted for their needs so that they can attain in the same way.

Disadvantaged

Children who are in receipt of Pupil Premium gain broader experiences because of our Endeavours and Flairs curriculum.

STEM

Every year, our Year 6 pupils take part in a STEM challenge with Johnson Mathey. They undertake a series of challenges where they need to problem solve. They compete with other schools to win a prize. The focus is on innovation, design, team work and problem solving.

Date to review: September 2024