What makes me a Design Technologist?

MANOR PARK INFANT SCHOOL & NURSERY

Learning Together, Success Forever

Why is Design Technology important at our school?
(Vision Statement)

Intent

1. Our rationale for teaching Design and Technology

Design and technology teaching and learning prepares pupils to participate in tomorrow's rapidly changing world. Children learn to produce practical solutions to real problems, with the ability to reflect on and evaluate design. Design and technology in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through creative thinking and problem-solving. Design and technology is also a collaborative activity where ideas and suggestions are shared and investigated together. Through practical activities and team work, children experience and learn how to work together have mutual respect for one another and value social cohesion.

We believe that a broad and balanced design and technology education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability. Our aims in teaching design and technology include:

- Preparing our children for life in an increasingly technological and scientific world.
- Fostering concern about, and active care for, our environment.
- Helping our children acquire a growing understanding of ideas.
- Helping develop and extend our children's technological concept of their world.
- Developing our children's understanding of the international and collaborative nature of design and technology.

Attitudes

- Encouraging the development of positive attitudes to design and technology.
- Building on our children's natural curiosity and developing a problem solving approach.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work cooperatively with others.
- Providing our children with an enjoyable experience of design and technology, so that they will develop a deep and lasting interest and may be motivated to study design and technology further.

Skills

- Giving our children an understanding of the iterative design process.
- Helping our children to acquire practical design and technological skills.
- Developing the skills of design technology:
  - *Designing:* Understanding contexts, users and purposes; generating, developing, modelling and communicating ideas.
  - *Making:* Planning; measure, mark out, cut and shape materials and components; assemble, join and combine materials and components; use finishing techniques, including those from art and design; following procedures for safety and hygiene at all times.
  - *Evaluating:* Own ideas and products.
  - *Technical knowledge:* Making products work.
  - *Cooking and nutrition:* Where food comes from; food preparation, cooking and nutrition
- Developing the use of technological language, recording and techniques.
- Developing the use of ICT where appropriate.
- Enabling our children to become effective communicators of design and technological ideas, facts and data.

2. Our teaching aims

- Teach design technology in ways that are imaginative, purposeful, well managed and enjoyable.
- Encourage and support children to ask questions about the world and use design and technology processes to try and answer them.
- Support children to make links between design technology and other subjects such as design technology, ICT, literacy and numeracy.

Implementation

3. How Design Technology is structured through the school

Delivering a broad and balanced design and technology education to our children is a core principle of our school. Design technology teaching in the school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school.

Design technology is taught throughout the school from Foundation 1 to Year 2. Design technology is also taught where other opportunities arise and links can be made within the wider curriculum such as through following the children's interests, continuous provision in EYFS or topics and themes.

The school ensures that a broad and balanced design technology curriculum is followed in which the **iterative process** is at the heart of our children's design and technology learning.

Our design technology scheme of learning ensures progression between year groups and guarantees topics are revisited. Teachers adapt and modify the model plans to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available. As a maintained school we ensure that any modification does not omit any of the National Curriculum.

To better suit the needs of individual classes or mixed-age groups, units may have been moved between years or amalgamated, where appropriate. However, design technology is taught every alternate half term throughout the school year. Some units may be taught in collaboration with outside agencies, including neighbouring secondary schools.

Impact

We believe that if children have become knowledgeable in design technology and acquired the skills of the iterative process, then they will be able to articulate their understanding with confidence. This is why pupil voice is an important tool in assessing whether children have made progress. If a child is able to confidently formulate and explain their own responses to an overarching design technology challenge, then the curriculum and its delivery have been successful. The work produced by our children and the discussions they have, should demonstrate that they are equipped with the design technology skills and knowledge that will enable them to be ready for the Key Stage 2 curriculum and beyond including life as an adult.

Design Technology unit by unit

At Manor Park Infant and Nursery School, we have our own bespoke, unique curriculum that prioritises progression, embeds knowledge and links to prior learning and enjoyment.

Throughout the Foundation Stage children will be exposed to relevant design and technology learning experiences, including skills, knowledge and vocabulary including the iterative process, which are fundamental to the development and progression of design and technology skills and understanding in Key Stage 1.

In Key Stage 1, through a variety of creative and practical activities, children are taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They work in a range of relevant contexts.

Foundation Stage

Throughout the Foundation Stage children will be exposed to relevant design and technology learning experiences, including skills, knowledge and vocabulary including the iterative process, which are fundamental to the development and progression of design and technology skills and understanding in Key Stage 1.

Within the Foundation Stage design technology will be taught in line with Development Matters, specifically ***Physical Development, Expressive Arts and Design*** and ***Understanding the World*** through the identified topics.

Children will participate and engage in both adult-led and independent challenges to '*choose their own resources to carry out their own plan, use one-handed tools and equipment and develop their small motor skills so that they can use a range of tools competently, safely and confidently.* They will also *explore different materials freely, to develop their ideas about how to use them and what to make, develop their own*

ideas and then decide which materials to use to express them, join different materials, explore different textures and draw with increasing complexity and detail.'

Children will begin to engage in the iterative process through '*returning and building on their previous learning, refining ideas and developing their ability to represent them and create collaboratively, sharing ideas, resources and skills.'* In addition to this the children will '*explore how things work and explore and talk about different forces they can feel.'*

By the end of the Foundation Stage the children will be able to '*safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function* and *share their creations, explaining the process they have used.'*

In the EYFS *The Characteristics of Effective Teaching and Learning* are the foundations on which design technology skills and the iterative process build in Key Stage 1.

Playing and exploring – children investigate and experience things, and 'have a go.'

Active learning – children concentrate and keep on trying if they encounter difficulties, and enjoy achievements.

Creating and thinking critically – children have and develop their own ideas, make links between ideas, and develop strategies for doing things.

While the children are playing and exploring, teachers should be modelling, encouraging and supporting the children.

In Foundation, we use Tapestry as a tool for tracking the children's design technology experiences, knowledge and understanding. This provides opportunities for children to revisit and discuss prior learning in order to make links to reinforce and embed understanding.

Key Stage 1

In Key Stage 1, through a variety of creative and practical activities, children are taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They work in a range of relevant contexts.

Cycle A	
Mechanisms	
Year 1	Simple mechanisms include sliders which move in a straight line, levers which move in a curve and wheels to make moving pictures.
Year 2	Children may also learn about simple winding mechanisms wheels and axels.
Structures/materials	
Year 1	Design and make a boat suitable to carry passengers and provisions between the Isle of Struay and the mainland.
Year 2	Design and make a boat suitable to carry passengers and provisions between the Isle of Struay and the mainland.
Food and Nutrition	
Year 1	Children explore different picnic foods and what is appropriate to take on a picnic. (*Teddy Bears picnic Plan Bee)* Think about safety and hygiene when preparing food.
Year 2	Design and create a seaside picnic including edible boats, fruit sculptures and frozen seaside snacks. *(seaside snacks plan bee*)

Cycle B	
Structures	
Year 1	Make a bridge

Year 2	Make a bridge
Mechanisms	
Year 1	Making a tuk tuk.
Year 2	Making a tuk tuk.
Textiles	
Year 1	Make a simple pouch to carry a compass for an explorer.
Year 2	Make a simple pouch to carry a compass for an explorer.

What are the key concepts in design technology at our school?

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.

Design Technology Long Term Plan

Cycle A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	People Who Help Us		Traditional Stories		Explorers	
	The Great Fire of London		The British Isles Calverton and the Isle of Struay		Explorers	
Year 1		**Mechanisms** *Moving pictures*		**Structures mechanisms** *Making a boat/ferry*		**Food** *Making a healthy sandwich for an Explorer*
Year 2		**Mechanisms** *Winding mechanisms*		**Structures mechanisms** *Making a boat/ferry*		**Food** *Making a healthy sandwich for an Explorer*

Cycle B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	People Who Help Us		Traditional Stories		Explorers	
	The Victorians		Calverton and India		Explorers	
Year 1		**Structures** *Bridges*		**Mechanisms** *Making a tuk tuk*		**Textiles** *Making a pouch for a compass*
Year 2		**Structures** *Bridges*		**Mechanisms** *Making a tuk tuk*		**Textiles** *Making a pouch for a compass*

How will we know the children learn well in Design Technology at our school?

How well do children learn in Design technology?	Evidence
Pupils can use the knowledge and vocabulary they have learnt to verbally articulate their understanding. They show that they can retain facts.	Child-led Book Looks Pupil voice
Pupils can use knowledge they've learnt and transfer to a structured piece of writing. Showing they can retain facts and show an understanding of their learning.	Book Looks Pupil voice
Pupils use homework and topic walls effectively to show how they are building on prior learning and using current knowledge and vocabulary to develop understanding.	Work scrutiny Pupil voice Homework Displays
Pupils show a natural curiosity for their topic	Pupil voice Homework Classroom visits
Use of progression documents allows pupils skills to develop through year groups	Work scrutiny Pupil voice Topic Plans Progress Planners