



Inspire Learning, Ignite Curiosity

Marlow Church of England Infant School Design & Technology Policy 2023

Then God said, “Let us make humankind in our image, in our likeness”

Genesis 1:26

Rationale

At Marlow Church of England Infant School our curriculum vision is to inspire learning and ignite curiosity, within a welcoming Christian and spiritual community. We embrace the uniqueness of everybody and are inclusive of all. Our values of respect, kindness, perseverance, forgiveness, thankfulness and service guide all that we do and our aim is for every child to feel nurtured, supported and safe.

Our belief is that every individual is created in God’s image and therefore is precious and valuable. We believe in treating everybody with respect and dignity because we acknowledge everyone’s God given value and unique identity.

We aim to achieve this by providing children with the opportunity to work towards achieving their full potential by:

- Embracing the uniqueness of everybody and be inclusive of all
- Empowering all to be enthusiastic learners
- Ensuring that every child feels nurtured, supported and safe
- Enriching learning through progressive teaching methods and technology
- Being responsible to and for society
- Being good citizens of the planet

As a school we support the rights of children and these rights are encompassed in the UN Convention of the Rights of the Child. This policy focuses on helping to realise Article 28 All children have the right to a good quality education.

Policy Aims

Our aims for the teaching of Design & Technology:

- Develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making.
- Enable children to talk about how things work, and to draw and model their ideas.
- Encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures.
- Develop an understanding of technological processes, products, and their manufacture, and their contribution to our society.
- Foster enjoyment, satisfaction and purpose in designing and making.
- Understand and apply the principles of a healthy diet.
- Understand where food comes from and the issues of seasonality
- Evaluate the effectiveness of products/ their own product.

Curriculum Intent

At Marlow C of E Infant School, we encourage the children to design and make products that solve real and relevant problems within a variety of contexts, considering the user, function and purpose. We encourage the children to be imaginative when producing designs and are keen to empower the children to be innovators and risk takers.

We expose children to high quality teaching and learning experiences to allow them to have the opportunity to explore design and technology in the world they live in. Tasks set are to create a product for a purpose or with a user in mind and developed by giving the children the opportunity to research previous products. Consistently using new knowledge gained to design, experimenting with different materials, mechanisms and structures. Once the design has been made children are told to evaluate the product against its original purpose, user and design.

The staff always ensures that all aspects of Design and Technology are assessable and designed for all abilities and needs. This allows everyone to participate and enjoy exploring their creativity. No two buildings are created the same as they are always the result of different people's capabilities and imagination. We consider this when we are on local trips and one example of this is that the children take multiple trips to the church. When doing so we prompt the children to pay close attention to the buildings structure and design. The staff encourage children to study the area around them and what designs they see every day.

They are taught how to use appropriate tools safely when making various things. Design and Technology in our school gives pupils the opportunity to make choices and explore areas of design that is meaningful to them, children naturally develop an enthusiasm and enjoyment when the creative input is their own.

We aim to link Design Technology in a cross curricular way to ensure it is purposeful and developing a range of children's skills from one task. Children are encouraged to use their mathematical knowledge to measure their product; develop an understanding of materials using their scientific knowledge; research other examples of a similar product in computing or looking at the decorative design in art.

Our children are encouraged to be reflective when evaluating their own work and the work of others in a thoughtful and purposeful way. In our school we encourage the children to develop their cognitive processes by thinking through problems and finding solutions, and reflecting on a result. We teach the children to be respectful of the products that have been made, which is one of our school values, as lots of research, thought, time design and making has been done by the inventor when producing this final product.

We are dedicated to building the knowledge and skills required to be imaginative and innovative designers.

Curriculum Implementation

Through this policy we aim to ensure consistency of high-quality teaching and learning of design & technology throughout the school. Design & Technology encompasses the investigation, designing, making and evaluation of products. It focuses on the communicating of ideas, through drawing and modelling and working with materials and mechanisms, in order to learn and practise particular skills and develop knowledge and understanding through opportunities and experiences. The curriculum enables pupils to take part in a broad range of practical activities directly concerned with:

- identifying needs
- generating ideas
- planning and designing
- making and testing
- evaluating

Through creativity and innovation, design and technology continue to shape our lives. Using an activity-focused approach, a high-quality design and technology education should give pupils opportunities to create, innovate, design, make and evaluate a variety of well-crafted products. Pupils should be taught the technical skills and craftsmanship to execute practical tasks, thereby developing confidence in using these skills – National Curriculum 2014

Reception

The statutory framework for the Early Years Foundation Stage was updated in September 2021 and design & technology is clearly identified in the 'Expressive Arts and Design' area of learning alongside art, music, movement, dance and role-play. The early learning goals for Expressive Arts and Design indicate what children should know, understand and be able to do by the end of the Reception year. (See Appendix 1)

During the Early Years Foundation Stage, the essential building blocks of children's Design & Technology capability are established. There are many opportunities for carrying out D&T-related activities across all areas of learning. By the end of the Reception year most children should be able to:

- 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;

Activities should look quite different from those carried out in KS1. Effective practice in the EYFS has the following characteristics:

- Designing does not necessarily entail drawing
- Designing can mean using hand gestures, arranging and re-arranging materials and components, talking and listening
- Designing is usually intuitive
- The designing and making process is fluid
- Sometimes practical skills are taught directly
- Children have frequent opportunities to develop practical skills with a range of materials
- Children have frequent opportunities to explore construction kits
- Children have frequent opportunities to explore existing products
- Activities are appropriate to children's prior experience
- Context is sometimes set by teacher, sometimes by the children.

Key Stage 1

The statutory framework for teaching Design & Technology are outlined in the National Curriculum 2014 (See Appendix 2). In Design & Technology lessons teachers ensure that the children apply their knowledge and understanding when developing ideas, planning and making products, and then evaluating them. This is done through a mixture of whole-class teaching and individual or group activities. Within lessons, children are given the opportunity both to work on their own and to collaborate with others, listening to other children's ideas and treating these with respect. Children critically evaluate existing products, their own work and that of others. They have the opportunity to use a wide range of materials and resources, including IT.

All pupils are taught to:

- Generate ideas through discussion and experimentation
- Extend knowledge and understanding of a wide range of materials, including construction kits, textiles, food, wood, plastic, and reclaimed/junk materials.
- Work within groups and as individuals.
- Make use of drawings and models to communicate their ideas.
- Evaluate their work and identify strengths and weaknesses in a positive way.
- Experiment with simple components, mechanisms and structures.
- Learn about health and safety aspects when working with a variety of materials and tools.
- Consider risk to themselves and to others and build up a knowledge and understanding of the dangers inherent in certain products and tools.
- Experience design technology through off-site visits, where practicable, in order to see technology used in a real environment.

Planning

Each year group will base their planning around their current topics in line with the relevant curriculum skills and the local environment.

Progression, coverage and continuity in Design & Technology is planned for by:

- following the objectives outlined in the National Curriculum 2014 in Key stage 1;
- following the objectives outlined in the Early Years Foundation Stage Framework 2021 in EYFS;
- producing long term plans, which group the objectives for each year group into topic areas;
- producing medium term plans, which follow the progression of skills (See Appendix 3)

- producing short term plans which detail progression across the design & technology topic being studied. Learning tasks that meet the needs of pupils, the deployment of extra adult support and the focus for the plenary are also identified;
- the learning objectives, outcomes and success criteria for each lesson are clearly identified on planning and are shared with the children as part of the 'learning culture' created within our school;
- regular monitoring/reviewing/revising of weekly and medium-term plans takes place, led by senior staff and the design & technology subject lead.

Meeting the needs of all learners

The teaching of Design & Technology needs to take into account the varied abilities, attitudes and individual needs of the children. We achieve this through a range of strategies:

- setting common tasks that are open-ended and can have a variety of results
- setting tasks of increasing difficulty where not all children complete all tasks
- providing a range of challenges through the provision of different resources
- using additional adults to support the work of individual children or small groups
- scaffolding around tasks.

We give children of all abilities the opportunity to develop their skills, knowledge and understanding, and we also build planned progression into the scheme of work, so that the children are increasingly challenged as they move through the school.

Inclusion

Lessons and activities are planned to include all children and must to facilitate the identification of need at either end of the ability range within each class i.e. special educational need or more able. The Disability Discrimination Act (2006) requires schools to promote equality of opportunity for all pupils. At Marlow C of E Infant School, we do this by:

- asking the children key questions to support their learning.
- relating the activities to the pupils own experiences
- supporting children when using equipment
- scaffolding through word mats and other visual writing frames.
- Working collaboratively with others in pairs or small groups.
- the use of practical activities and learning through first hand experiences
- opportunities for response and reflection and the use of self-evaluation and assessment
- extension activities to enable those with developed skills
- all pupils are given credit for their own personal achievement.

Resources

The resources for Design & Technology are managed by the subject leader who audits and replenishes resources toward the end of each academic year in readiness for the new academic year.

IT in Design & Technology

Information and communication technology enhances the teaching of Design & Technology, wherever appropriate, in all key stages. Children use software to enhance their skills in designing and making things. The children also use ICT to collect information and to present their designs through a range of design and presentation software. This could include:

- use of the internet to gain additional information (e.g. about artists, sculptors etc.);
- use of IWB resources;
- use of the Learnpads and Chromebooks;
- use if desktop software to enhance pupils skills in designing and creating pieces of work
- cameras to collect and present information

Assessment

Assessment is an integral part of the planning process.

Evidence for assessment is gathered through planned opportunities for observation, peer and self-assessment and teacher-led activities. Teachers use the Learning Ladders platform to record assessments against the objectives from the National Curriculum/EYFS Framework. When planning, the gap analysis from the Learning Ladders is used to identify gaps in the children's knowledge. Pupils are encouraged to reflect

upon their chosen processes and materials and how effective they were and what could they do next time to improve or achieve different results. Further detail is contained in the school's Assessment Policy.

Record Keeping and tracking

Design & Technology produces 2D and 3D pieces of work. When complete some Design & Technology pieces are displayed in the school to celebrate work achieved and to provide examples of processes. Photographs are also taken for evidence and added to pupil's folders/books. Teachers may also take photos of pupils creating their pieces of work as evidence. Teachers keep their own records of pupil's progress using Learning Ladders. The subject leader keeps sample evidence of the pupils work in a portfolio. This demonstrates the expected level of achievement in Design & Technology in each year of the school.

Health and Safety

Health and safety is important, particularly when working with tools, equipment and resources. Children should be given suitable instruction on the operation of all equipment before being allowed to work with it.

Children need to be taught how to:

- use tools and equipment correctly
- recognise hazards and risk control Children should be
- strictly supervised in their use of equipment at all times.
- taught to respect the equipment they are using and to keep it stored safely while not in use.
- taught to recognise and consider hazards and risks and to act to control these risks, having followed simple instructions.

Food Hygiene

The following Health and Safety rules should be referred to by all staff, helpers and pupils. Before each food technology lesson, they should be either introduced or revised.

- Pupils should wear clean aprons
- Wash hands before food work.
- Always cover tables with plastic cloths/kitchen paper used only for food work.
- Wipe table coverings with disposable J cloths and anti-bacterial spray
- Only use plastic or metal utensils.
- Wash food utensils in a bowl which is only used for washing food items.
- Make sure that foodstuffs are used within their sell by date.
- Store perishable food in a fridge (0°C –4°C)
- Take home prepared food in a plastic bag.
- Wash food utensils in hot soapy water and rinse before drying with paper towels.
- Return clean equipment to correct storage area.

Equalities

Equal opportunities are considered when we decide upon the resources we provide and the teaching strategies we employ. In our curriculum planning we ensure that all children, with due respect to their culture, religion and background, have equal access to all areas of the curriculum, extra-curricular activities, all areas of the grounds, equipment and resources, the staff, and time to contribute to the whole class and group work. Please refer to the school's Equalities Policy for more details.

Spiritual, moral, social and cultural development

The teaching of Design & Technology offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons. Groupings allow children to work together and gives them the chance to discuss their ideas and feelings about their own work and the work of others. Their work in general helps them to develop a respect for the abilities of other children and encourages them to collaborate and co-operate across a range of activities and experiences. The children learn to respect and work with each other and with adults, thus developing a better understanding of themselves. Through the contexts of their design briefs, and choice they make throughout the design process, the children develop an understanding of different cultural issues; begin to consider the social moral implications on their decision making and develop spiritually through the use of their own imagination and creativity within their learning.

Role of the Subject Leader

The role of the subject leader is to;

- advise and support staff in planning teaching and learning of Design & Technology
- monitor teachers' planning as part of on-going subject monitoring and evaluation of practice use feedback from monitoring to develop an action plan for Design & Technology with realistic and developmental targets
- audit, identify, purchase and organise all design & technology resources, ensuring they are readily available review the agreed ways of working through a written policy document and scheme of work
- compile a portfolio of children's Design & Technology work to evidence progression and examples of good practice for staff to refer to
- keep up-to-date on the use of Design & Technology in the curriculum
- promote Design & Technology throughout the school

Staff development and training

Staff development and training is provided in the following ways:

- school based INSET
- liaison with appropriate county and national services;
- working alongside other teachers or visiting other classrooms as an observer to share good practise.

The Role of Governors

Governors determine, support, monitor and review school policies. They support the use of appropriate teaching strategies by allocating resources effectively. They ensure that building and equipment are safe. They monitor pupil attainment across the school and ensure that staff development and performance management promotes good quality teaching.

Policy reviewed: January 2023

Next review date: January 2026

Appendix 1

Opportunities for Design & Technology in Development Matters non -statutory guidance for the EYFS 2021

	Understanding the world	Expressive Art and Design	Physical Development	Literacy	Shape, space and measure
3- & 4-year olds will be learning to:	Use all their senses in hands on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Explore and talk about different forces they can feel.	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.	Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel. Use one-handed tools and equipment, for example, making snips in paper with scissors.	Using some of their print and letter knowledge in their early writing.	Talk about and explore 2D and 3D shapes Combine shapes to make new ones - an arch, a bigger triangle etc. Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc.

	Talk about the differences between materials and changes they notice.				
In Reception children will be learning to:	Explore the natural world around them.	Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.	Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons		Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. Continue, copy and create repeating patterns. Compare length, weight and capacity.
Early Learning goals	The Natural World	Creating with materials	Fine Motor Skills		
	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	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.	Use a range of small tools, including scissors, paintbrushes and cutlery. Begin to show accuracy and care when drawing.		

Appendix 2

Programme of Study for Design & Technology 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

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.

Appendix 3

Progression of Skills in KS1

Skill	Year 1	Year 2
Background Research – Lesson 1 Exploring context and existing products	Understand what a product is and who it is for Understand how a product works and how it is used Identify where you might find this product	Understand what a product is and who it is for Understand how a product works and how it is used Identify where you might find this product Identify the materials used to make the product Express an opinion about the product

Design Criteria – Lesson 2 Understanding their intended users and their own product	Explain what product they will be designing and making Explain who their product will be used by Describe what their product will be used for	Use own experiences and existing products to develop ideas Explain what product they will be designing and making Explain who their product will be used by Describe what their product will be used for and how it will work Explain why their product is suitable for the intended user
Planning – Lesson 3 Communicating ideas and creating prototypes for product	Discuss what their steps for making could be Represent ideas through talking and drawing	Discuss what their steps for making could be Represent ideas through talking, drawing and computing – (where appropriate) Choose materials to use based on suitability of their properties Create templates/pattern pieces and explore materials whilst developing ideas
Making – Lesson 4-5 Selecting the tools and applying the practical skills and techniques	Use construction materials and kits, textiles, food and mechanical components Choose suitable tools for making Follow safety and food hygiene procedures Measure, mark, cut and shape materials and components Join, assemble and combine materials and components	Use construction materials and kits, textiles, food and mechanical components Choose suitable tools for making whilst explaining why they should be used Follow safety and food hygiene procedures Measure, mark, cut and shape materials and components Join, assemble and combine materials and components Use finishing techniques, including skills learnt in Art
Evaluation – Lesson 6 Referring to planning and initial ideas in evaluating their product	Talk about their design ideas and what they have made Make simple judgements of how the product met their design ideas	Talk about their design ideas and what they have made Make simple judgements of how the product met their design ideas Suggest how their product could be improved
Teaching cooking and nutrition Understanding food and food preparation	Understand that food comes from plants or animals Understand that food has to be farmed, caught, or grown	