



“For I know the plans I have for you” Jeremiah 29:11

Design and Technology Curriculum Purpose and Rationale

As a Church school, the teachings of the bible guide and influence our practice. Being part of the Birmingham Diocesan Multi-Academy trust, we, like the other schools within our Multi-Academy Trust, work towards ensuring that pupils we serve experience, ‘life in all its fullness.’ (John 10:10).

At Nethersole, our Local Academy Board, Leaders and Staff are committed to achieving this through our vision “For I know the plans I have for you” (Jeremiah 29:11) Our curriculum’s purpose is to develop the children’s understanding, personality and gifts bestowed upon them by God in order for them to know they are loved by God, have love for others and let their light shine.

Every aspect of school life, including the curriculum, has been constructed around our school vision and our school values. Our vision is underpinned by the three key tenants: Loved by God; Love for others; Let your light shine. We have constructed a curriculum which prepares the children of Nethersole academically, emotionally, socially and spiritually to be active and successful participants of British and Global society.

Our sequential knowledge curriculum begins in EYFS, so that students can successfully access a broad and balanced curriculum throughout their education at Nethersole Church Primary Academy. This is underpinned by structured phonics, writing and mathematics lessons in EYFS to ensure core procedural knowledge is secured and that transition into KS1 is successful.

During KS1, focus is placed on reading, writing and mathematics. We ensure all students are reading by the age of six so that they can successfully access a broad and balanced curriculum. Through the Mathematics Mastery programme, we ensure core mathematical knowledge is mastered and practised. Music, PE, humanities and science are carefully planned with specialist support to ensure students are making links across and throughout the curriculum.

Throughout KS2, we seek to carefully develop subject knowledge and build clear sequences in our students’ minds, allowing them to begin to think more coherently, critically, and creatively. Working with subject experts, curriculum leaders are equipped to design carefully crafted sequences of learning.

As teachers and leaders of our Learning Community, we ensure that our curriculum and teaching is informed by the latest evidential research from cognitive science about memory, knowledge retention and practice in order to help students remember, and apply, the best of what has been thought and said. We make knowledge stick for all learners so that all children are equipped to let their light shine.



Curriculum Purpose: Why study Design and Technology?

Why do learners at Nethersole Church Primary Academy need to study Design and Technology?

At Nethersole Church Primary Academy we believe that Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, the children 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. Children learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Design is the process of intentionally creating something while at the same time considering its purpose. The children learn to think about and understand the function, economic, sociocultural factors and aesthetics of their products. 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. When studying Design and Technology at Nethersole, children become self-motivated and confident learners, who can 'Let their light shine' when working independently or as part of a team.

What are the aims for the Design and Technology curriculum?

(i.e. what do we want learners to be able to know and do by the time they leave Nethersole Church Primary Academy?)

At Nethersole Church Primary Academy for Design and Technology our aim is 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. To 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. For the children to critique, evaluate and test their ideas and products and the work of others and understand and apply the principles of nutrition and learn how to cook.



National Curriculum

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.

Which values underpin the curriculum content?

Perseverance: we enable our children to become self-motivated learners who have the confidence to persevere with the challenges that they may face during project work, whilst at the same time not being afraid to learn by making mistakes.

Respect: The children are respectful of each other and know that when they are offering feedback or evaluating each other's work that they need to be respectful, positive and polite.

Thankfulness: The children are thankful of each other when working in groups or when offering support or advice to encourage each other. They are also thankful for all we have. Each and every object that is designed serves a purpose of which we can be thankful.

Joy: Products that have been designed enable everyday life to flow with ease and therefore can bring joy to people's lives.

How are British Values taught from Design and Technology?



Children at Nethersole Church Primary Academy develop an awareness of Health & safety for themselves and others within each specialist area. They are taught the social skills around behaviour self-regulation to ensure collective responsibility for a safe and efficient working environment. The children are taught to challenge each other's behaviour or practices if they fall short of the collective expectations of the group. Children also explore how products contribute to lifestyle and consumer choices, understanding how products evolve according to users' and designers' needs, beliefs, ethics and values. The children understand about the moral choices facing designers & manufacturers when deciding on materials. Children study iconic British designers and art & design movements. They focus on recycling in food and how to manage portion sizes to minimise waste helps students to connect with the dilemmas of those who do not have an abundance of food. We encourage students to have a sense of enjoyment and a fascination for learning about the world around them and ensure that children know the difference between right and wrong and understand that actions have consequences so that they respect the rule of law. Children are taught about organic, free range, local & seasonal foods and the moral and ethical reasons behind buying these foods. We encourage mutual respect through peer observations. We focus on the learning habits to build self-confidence and allow children to not be scared to fail. We carry out product analysis in all areas and give children the opportunity to maturely critique each other's work. We look at cultural influences on the food we cook and the diversity of ingredients available for us to cook with. They also learn about staple foods of other countries.

Which links to careers can be made within the Design and Technology curriculum?

Chef, Graphic designer, Mechanical Engineer, Product designer, Market researcher, Costume designer, Fashion design assistant, Fashion designer, Footwear designer, Food technologist, Hat designer/milliner, Dress Maker, Hairdresser, Textile designer, Food process worker, Meat process worker, Construction Manager, Product/process development scientist, Production manager, Quality manager, Animator, Computer games designer, Web designer, Architect, Engineer, Manufacturing Manager.



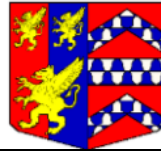
Curriculum Rationale: Why study Design and Technology in this way?

Why has the specific knowledge been selected?

At Nethersole Design and Technology is taught under the umbrella of a thematic curriculum. Our themes are linked cross-curricular which helps our children to know and remember more. The children will complete one food technology element, one textile element and one structure element of Design and Technology each year. This is as they can be related to real life experiences as well as future careers and interests the children may have. The children will design and make products in each element. They will have to solve real and relevant problems within a variety of contexts. Within Design and Technology the children will evaluate and analyse past and present Designs. This will help them to develop a critical understanding of its impact on daily life and the wider world.

How are Design and Technology lessons delivered at Nethersole?

The Design and Technology curriculum at Nethersole Primary Academy school is taught through the progression of knowledge, as well as skill. Design and Technology lessons are taught weekly, for a half term, three times a year. All children will design, make, evaluate, and use technical knowledge within food technology, textiles and structures. They will learn how to develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully. Every project will have a specific brief, this shows the children the thought process for



each product. They will gain an understanding that each product must have a purpose. Each year they will build and apply a repertoire of knowledge, skills and understanding in order to design and make high-quality prototypes and products for a wide range of users. The children are taught how to critique, evaluate and test their ideas and products and the work of others will throughout each element. Food Technology will enable the children understand health and safety measures, the importance of hygiene and allow them to apply the principles of nutrition when learning how to cook. Evaluating each other's work and taking on board constructive criticism will take place throughout every lesson.

What is the impact?

The impact of our Design and Technology curriculum at Nethersole Church Primary Academy is that it teaches the children about designing solutions to improve people's lives. It shows them that they are able to make better decisions and helps them to understand more about the impact of products on the world. By following a brief and then designing and making a product to meet that brief, provides the children with satisfaction and creates aspirations for any other future projects they choose to design and make to improve people's lives.

Design and Technology Curriculum Aims (end-points)

What are the aims, end-points, of specific stages of the curriculum?

EYFS:

Exploring and using media and materials: children experiment with ways of changing materials and items around them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.



Key stage 1

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.

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

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:

Key stage 1

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

Key stage 2

- 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.