Design and Technology Curriculum Purpose and Rationale

'*Fullness of life for all, through working together with the love of Christ.*'

At Quinton Church Primary School, we believe that everyone should have life in all its fullness. Therefore, our aim is for everyone to be part of our **Christian community** where everyone is happy, safe and supported, feels **loved** and demonstrates kindness; understands **justice** and shows fairness to all; and receives high quality education and is empowered to live life to the full (John 10:10).

We are not only inspired by John 10:10, but by Micah 6:8, which shows us how to live life in all its fulness.
'*The LORD has told us what is good. What he requires of us is this: to do what is just, to show constant love, and to live in humble fellowship with our God.*'

Be kind, be fair, be thankful.

Our curriculum is driven by our Christian Vision and values, the culture and diversity of our local, national and global community.

Established 1846

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Curriculum Purpose: Why study Design and Technology?

Why do we teach Design and Technology? (intent)

At Quinton Church Primary School, 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 Quinton, children become self-motivated and confident learners, when working independently or as part of a team.

National Curriculum (what do we want learners to be able to know and do by the time they leave Quinton Church Primary School?).

At Quinton Church Primary School, the aim of studying design and technology 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.

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.

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Which Christian values underpin the curriculum content?

Kindness- compassion, service, peace, love

Design and technology allows our pupils to work together in teams, whilst showing kindness and using skills of compassion and understanding of others.

Fairness- justice, forgiveness, wisdom

Our pupils have a chance to express their views, whilst also considering the views of others, as they design products with a user in mind.

Thankfulness- hope, friendship, trust

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; every object that is designed serves a purpose of which we can be thankful.

How are British Values taught from Design and Technology?

At Quinton Church Primary School, pupils are taught about British Values through Design and Technology by learning about a variety of diverse communities. For example, our pupils 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 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.

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

Why has the specific knowledge been selected?

At Quinton, Design and Technology is taught through our subject centred curriculum, which helps our children to know and remember more over time and make connections between other subjects, past experiences and future learning. Also, aims can be related to real life experiences as well as future careers and interests the children may have. The children will complete **food technology, textiles and materials, mechanics, construction and electronics** throughout their time at Quinton. 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 Quinton?

The Design and Technology curriculum at Quinton Church Primary School is taught through the progression of knowledge, as well as skills. 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. 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.

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What is the impact?

The impact of our Design and Technology curriculum at Quinton Church Primary School 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 peoples' lives.

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Design and Technology Curriculum Aims (end-points)

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

KS1

Pupils should be taught:

<u>Design</u>

-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

<u>Make</u>

-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

<u>Evaluate</u>

-explore and evaluate a range of existing products

-evaluate their ideas and products against design criteria

<u>Technical knowledge</u>

-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.

KS2

Pupils should be taught:

<u>Design</u>

-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

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-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.

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