Design and Technology (DT) Policy

Curriculum Statement

Great Binfields Primary School aims to tailor education to individual needs, interests and aptitudes, to fulfil every child's potential. Every child will have access to a rich, broad and balanced curriculum. However, it is recognised that every child has a different knowledge base and skill set, as well as varying aptitudes and aspirations; and that, as a result, there is a determination for every young person's needs to be assessed and their talents developed through diverse teaching strategies.

At Great Binfields this means teachers using the flexibility that already exist to ensure high standards in the basics with opportunities for enrichment and creativity. We aim to live out our mission statement of 'Learning Together, Achieving Forever.

Definition

Design and technology is a subject where children's capability in designing and making is developed through combining their designing and making skills with knowledge and understanding. It allows children to apply their knowledge and understanding in a creative way to design and make products.

"Design and Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. 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." (National Curriculum Document 2014)

The curriculum will

- be carefully planned and structured to ensure that learning is continuous, and that children make progress with the development of their learning.
- engage the children's interest, encourage and motivate them to want to learn.
- be creative, exciting and offer children first-hand experience to reinforce their learning and to underpin their growing knowledge, skills and understanding.

Aims/Objectives

DT is an intricate part of our day-to-day lives and it is therefore important that our children are taught how this subject is of great importance in our rapidly changing world. Children are encouraged to think creatively in order to solve problems and/or make improvements to existing ideas and products. It is through these methods that they can make positive changes to their own and others' lives.

The teaching of DT enables children to identify needs and opportunities, and to respond by

developing ideas and eventually making products and systems. Through the study of DT children combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices. This allows them to reflect on, and evaluate, present and past DT its uses and impacts.

Design and Technology contributes to the wider aims of primary education by making links between all areas of learning.

Aims:
At Great Binfields School our aims are to:
- fulfil the requirements of the National Curriculum for Design and Technology
- provide a broad and balanced curriculum
- ensure the progressive development of knowledge and skills
- embed the school values

Objectives:
Through the teaching of DT, we enable all children to:
- learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens through evaluation of past and present DT
- understand the importance of DT in the wider world.
- participate successfully in an increasingly technological world using the language of DT
- develop the creative, technical and practical expertise needed to perform everyday tasks confidently.
- 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.
- talk about how things work, to draw and model their ideas and to develop their technical knowledge.
- select appropriate tools and techniques when making a product, whilst following safe procedures.
- develop an understanding of technological processes and products, their manufacture and their contribution to our society.
- foster enjoyment, satisfaction and purpose in designing and making things,
- develop imaginative thinking and to enable them to talk about what they like and dislike when designing and making things.
- explore computing as a means of design

<u>Planning and Implementation</u>

Planning
We use a range of resources to support the planning of DT including HIAS, The Design and Technology Association, Kapow, Plan Bee, all of which are designed by expert teachers but adapted by teachers at Great Binfields Primary. The curriculum objectives are divided into strands: Cooking and Nutrition, Mechanisms, Structures, Textiles and Electrical Systems. Electrical Systems is taught in KS2 only.

At Great Binfields the curriculum is carefully planned to engage and excite all the learners. The activities in DT build upon the prior learning of the children. Interactive whiteboard flipcharts or PowerPoints are produced by the teachers to help with the delivery of a unit of learning both to help sequence the teaching as well as to convey key information and instruction to the children. They are designed to be accessible to all children.

The curriculum is designed to enable progression in Design and Technology processes, including specific aspects of design and evaluating. It also ensures that children develop their knowledge and skills systematically; choosing and using an increasing range of tools and techniques to suit a range of different purposes and develop their understanding of the five strands:

- Cooking and Nutrition
- Mechanisms
- Structures
- Textiles
- Electrical Systems.

Our whole school overview maps the strands and suggested products for each year group. These units have been selected and planned to ensure a balance of materials, skills, knowledge and understanding throughout each Key Stage (including EYFS). All year groups undertake a cooking and nutrition unit to apply the principle of healthy eating and nutrition.

The long-term plan from EYFS to year 6 contains detail on substantive knowledge alongside progression for design, make, evaluate, technical knowledge.

Delivery
Where possible, DT is contextualised with other areas of the curriculum such as Science, History and Geography. When appropriate, DT is taught in a series of discrete lessons across several weeks to ensure the knowledge, skills and understanding is secure. At other times, it is taught in a block to provide a focused and immersive learning experience. This also helps on a practical level as time can be saved on setting up and packing away practical activities.

Resources
Resources related to individual year groups are kept in their classrooms. There is an additional collection of specialist resources stored centrally in the DT cupboard. All things relating to cooking are kept in the children's kitchen. Within EYFS, the classrooms have renewable and interchangeable resources; a range of materials such as paper, card, glue sticks, sellotape; construction kits and a selection of age-appropriate tools.

Prior to starting a new unit, class teachers are responsible for checking that the consumable resources are available. Money is set aside in the budget for the purchase of ingredients for cooking and for consumables such as batteries, wood, wheels.

Display/Working Wall/ Floor Books
Periodically a display of DT will be included in classrooms to celebrate the finished products. Additionally, there are areas set aside in the classroom as working walls. These evolve with the topic and are used to reinforce key knowledge and skills. For DT, this will include vocabulary, drawings, patterns quick models and final products to demonstrate the processes in the learning journey. Evidence of the children's learning is also added to the year group's floor book.

The Early Years Foundation Stage
DT skills are adapted to match key areas of the EYFS curriculum, with children building on their knowledge of everyday objects and their local environment. The provision includes individual and small group work, and a balance between guided interaction with direct teaching and child-led activities. DT in the EYFS is informed by and aligned to the following related Early Learning Goals (ELGs).

<u>Personal, Social and Emotional Development ELG</u>

- Self-regulation set and work towards simple goals, being able to wait for what they want and

control their impulses when appropriate; Give focused attention to what the teacher says, responding appropriately even when engaged inactivity and show an ability to follow instructions involving several ideas or actions.

Fine Motor Skills ELG

- Use a range of small tools, including scissors, paint brushes and cutlery. Begin to show accuracy when drawing.

Expressive Arts and Design ELG

- Creating with materials. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the processes they have used.

Key Stage One (Years 1 & 2):

Through a variety of creative and practical activities, children 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, children 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 their 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 Two (Years 3,4,5,6)

Through a variety of creative and practical activities, our children are taught the knowledge, understanding and skills needed to engage in the process of designing and making. They work in a range of relevant contexts (for example, the home, school, leisure, culture, enterprise, industry and the wider environment). When designing and making, children 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 DT 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.

Food and Nutrition

As part of their work with food, children should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in children 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 children to feed themselves and others affordably and well, now and in later life.

EYFS

There are opportunities for the children to work in small groups with an adult to prepare food. Under supervision, they are taught to use appropriate tools.

Key Stage 1

- use the basic principles of a healthy and varied diet to prepare food.
- understand where food comes from
- use appropriate kitchen tools correctly and safely, under close supervision.

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.
- use appropriate kitchen tools with increasing independence and accuracy.

Assessment

Teachers will assess the children's work in DT while observing their class and through the outcomes. This will inform any assessment against cohort/yearly objectives on Sonar.

Inclusion/Equal Opportunities

In planning tasks, teachers will aim to provide for all children to achieve, irrespective of age, ability, gender and cultural background. We carefully plan, monitor and assess to ensure all of our children feel valued. Learning is challenging yet achievable by all children and differentiation is achieved by both scaffolding within lessons, tasks design and outcome.

Health and Safety

Health and safety important, particularly when working with a variety of 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 take action to control these risks, having followed simple instructions.

Food Hygiene

- Children and staff will take care to undertake appropriate hand washing and other hygiene related activities prior to preparing food.
- Children and staff working with food must wear aprons designated for cooking.
- All jewellery should be removed and hair tied back

Sawing

- Bench hooks and clamps must be used when sawing any material.
- Safety goggles must be worn and any loose items of clothing/hair must be tucked in.

This policy will be reviewed annually by the DT subject lead and with the staff as and when elements of DT are identified or prioritised within the School Improvement Plan. (SIP)

Headteacher – Nicola Lyddon
Design and Technology Subject Leader – Lisa Davis

Review Date: April 2025
To be evaluated and reviewed: July 2026