"Enabling life in all its fullness"
"I came that you may have life, life in all its fullness" (John10:10)

Our **Core Christian values** for our school are: *Perseverance, Creativity, Trust and Friendship*.

Design and Technology Policy

Policy Date: May 2022
Date of next review: February 2025

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, 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. 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 for Design and Technology 2014

This document is a statement of the aims, principles and strategies for the teaching and learning of Design and Technology at Ashton Keynes C of E Primary School. It seeks to encourage a coherent approach to this throughout the school and adheres to the programmes of study for KS1 and KS2 in The National Curriculum for England 2014.

Aims of the curriculum

The National Curriculum for Art and Design 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.

School Aims

- To experience a sense of enjoyment and achievement through design and technology.
- To develop skills and techniques using a range of different materials and tools.
- To 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
- To critique, evaluate and test their ideas and products and the work of others using a developing vocabulary
- To encourage children to select appropriate tools and investigate different techniques for making a product, whilst following safe procedures
- To begin to understand about the characteristics of different materials and the use of simple mechanisms
- To teach safe and appropriate use and maintenance of tools and techniques.
- To understand and apply the principles of nutrition and learn how to cook
- To acquire and develop designing and making skills; working with confidence in a stimulating, educational environment.
- To provide opportunities for meaningful links with other curriculum areas.
- To celebrate pupils' achievements through display, sharing work on the school website and assemblies

Attainment Targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. Subject content is broken down in to 4 main areas:

Subject Content

Key Stage 1

Pupils should be taught:

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.

<u>Implementation</u>

We follow a broad and balanced Design and Technology curriculum that builds on previous learning and provides both support and challenge for learners using support from 'Kapow Primary', to ensure we progressively teach all aspects of the Design and Technology curriculum and ensuring progression in skills.

- Pupils have whole class DT lessons that are either spread out over the course of a term or 'blocked' into consecutive days.
- Each class from Y1-6 also benefits from a specialist Cooking and Nutrition teacher delivering a block of lessons around cooking and food hygiene linking to our Healthy Schools goal.
- Planning takes account of the range of abilities within classes, ensuring appropriate support and guidance for pupils with SEND.
- Each DT theme focuses on one of the key areas of Design and Technology: structures, mechanisms, electrical systems, cooking and nutrition and textiles

- Pupils are exposed to and learn skills in the elements of Design and Technology: design, make, evaluate and technical knowledge
- Each unit of work is risk assessed and where appropriate (using tools) written as an additional formal risk assessment using Evolve.

Impact

Our pupils enjoy and value Design and Technology and know why they are doing things, not just how. Pupils will understand and appreciate the value of Design and Technology in the context of their personal wellbeing and the creative and cultural industries and their many career opportunities.

Progress in Design and Technology is demonstrated through regularly reviewing pupils' work, to ensure that progression of skills is taking place. This is namely through:

- Looking at pupils' work, especially over time as they gain skills and knowledge
- Observing how they perform in lessons
- Pupil's self-assessment of their own work and that of their peers
- Talking to them about what they know.

The Design and Technology curriculum will contribute to pupils' personal development in creativity, independence, resilience, judgement and self-reflection. This would be seen in them being able to talk confidently about their work, and sharing their work with others.

Progress will be shown through outcomes in Learning Journey books, final products/ designs and photographs.

Resources

Resources and equipment are kept in the DT cupboard of the STEM lab area, within individual classrooms and the paper stores in the Learning Hub.

Resources required for specific Design and Technology projects are ordered centrally through the DT leader at the beginning of the Autumn term and prepared for each class. Perishable resources required can be purchased by the Cooking teacher from the DT budget. Any additional projects can be accommodated either using leftover resources or by purchase from class budget (or DT budget if agreed with DT lead).

Assessment

In DT, Kapow is followed to guide teachers through ensuring all elements of Design and Technology are to be taught. Teachers use effective questioning to assess the children's prior understanding when introducing a topic.

Observation of the children during the design process, questions about their choices in design and implementation and assessment of the final produced product allow the teachers to then use the assessment grid that has been supplied to decide where that child is currently working in DT. Children are also given an opportunity to reflect through self-

assessment on their work, verbally or in a written format and this will also contribute towards the decision.

At the end of a unit, the children will also complete a quiz, to show an understanding of the vocabulary and processes involved.

In Early Years children are assessed using the Development Matters descriptors (creating with Materials and Being Imaginative and Expressive). Teachers use their knowledge gained about each child through observations, assessments and interactions to make their own judgements termly. Regular assessment occurs which informs planning and next steps. A profile assessment is completed at the end of the year to support a successful transition into KS1 and inform parents.

Beyond the DT curriculum to ensure further 'reach' and opportunity to 'shine' we ensure pupils have access to engineering challenges, visiting engineers come in to speak with the children and we work with STEM ambassadors to take part in Design and technology competitions, clubs and challenges including RIAT (Royal International Air Tattoo) where we send representatives each year to compete and have had great success.