Design and Technology at The Federation of Priddy and St. Lawrence's C of E Primary School

Rationale

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. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and wellbeing of the nation.

Knowledge Choice

Our children will 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.

Progression in Design and Technology involves developing skills and knowledge through:

- developing the creative, technical and practical expertise needed to perform everyday tasks confidently and to participating successfully in an increasingly technological world
- building and applying a repertoire of knowledge, understanding and skills in order to design and making high-quality prototypes and products for a wide range of users
- critiquing, evaluating and testing their ideas and products and the work of others
- understanding and applying the principles of nutrition and learn how to cook

End Points

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.

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

Cooking and nutrition:

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

Key stage 2 Pupils should be taught:

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:

- 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.

Intent

At Priddy at St. Lawrence's Federation, our Design and Technology Curriculum is designed to promote high standards in designing, making and evaluating a range of products using a wide variety of rigorous, practical skills. It recognises the importance of evaluating work as a way of improving it and enhancing the finished result. We believe that children who do this can learn to apply this skill across the curriculum, become more resourceful, innovative and enterprising; they become more capable citizens. Our Design and Technology Curriculum values creativity, problem solving and risk-taking in a variety of contexts, in which children use their imagination to design and make products, helping them to develop a more critical understanding of the impact of this subject on daily life and the wider-world.

Our intent is to provide opportunities for children to develop imaginative solutions to real-world problems and thus inspire them to:

- 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;
- develop an increasingly technical vocabulary which helps them to apply their growing knowledge with confidence
- understand and apply the principles of nutrition and learn how to cook;
- understand the importance of Design and Technology to other subjects such as Science, Mathematics, Engineering and Art and see that these subjects also support Design and Technology;

At Priddy and St. Lawrence's School, we support all children, whatever their needs, towards these aims. As such, our Design and Technology Curriculum follows a clear pathway of progression, sets suitable learning challenges, responds to children's diverse needs, and works to overcome potential barriers to learning and assessment for individual and groups of pupils. Assessment reviews ensure that we are able to support children so that they all experience success in their learning.

Implementation

To promote a deeper understanding of the processes involved in designing, making and evaluating a product, the children have a wide range of opportunities to experience design and technology. Children will experience the varied processes through 3 strands of knowledge: construction materials, food and textiles. Through each of these strands children learn to research and develop criteria to design products for specific purposes, individuals and groups; use a wide variety of tools, materials and components; investigate and evaluate existing products and their own finished products, reflecting on how these could be improved through future iterations. As the children become increasingly knowledgeable, they apply their understanding to increasingly challenging problems and tasks, integrating mechanical and electrical elements as well as beginning to incorporate computer controlled elements into their work.

Learning within Design and Technology is underpinned by the early experiences children receive within our Early Years curriculum – especially within the Specific Area of Expressive Arts and Design. This area is broken into two categories: Exploring and Using Media and Materials and Being Imaginative. Both of these categories have significant impact on the way that children develop their understanding of how components fit together to create new

products and also allow them to be free with their creativity to experiment and innovate from a young age. Our Early Years Curriculum aims to expose young learners to a wide variety of materials and allows them to create and make choices, adapting and evaluating with carefully worded questions and support from the adults working with them.

We use a two-year rolling program of DT projects, ensuring that in the two years of each key stage, every child will take part in 6 large projects.
We have created a skills progression for the subject, and the planning and delivery of lessons will ensure coverage of these key skills.

Impact

The impact of our Design and Technology curriculum will be measured primarily through formative assessment by teachers in the classroom, and by a system of monitoring by the D&T lead. The subject lead will review children's recorded work, monitoring medium-term plans and assessing other evidence of work through children's sketch books.

As an Designer and Maker leaving The Federation of Priddy and St. Lawrence's, every child will:

- Will be inspired by the work of expert designers, engineers and technicians – both past and current – and have an understanding of the exciting range of careers available in this ever developing world
- Understand the principles of design and the processes involved in the creation of prototypes and quality finished products
- Be able to use a variety of tools and materials with accuracy and expertise
- Be inspired to take risks in their designs and understand the value of evaluating, reworking and improving initial designs
- Be able to plan, and create exciting meals using a range of healthy ingredients
- Have had opportunities to present and share their ideas, designs and products to others and showcase their work.