BRETHERTON ENDOWED CE PRIMARY SCHOOL
Design & Technology Policy

"Walking in the footsteps of Jesus with our Christian family, we learn, grow, achieve and flourish together in God's love"

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This policy is for Bretherton Endowed CE Primary School and The Hub, Bretherton Endowed Out of School Provision.

Teaching Design & Technology at Bretherton

Design and Technology is an exciting and highly practical subject in which pupils gain the experience of evaluating, designing and creating products for a purpose. We start each topic with 3 simple statements - that Design is creating *Something* for *Somebody* with *Some Purpose*. 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. At Bretherton Endowed Primary School we want pupils to examine their environment, question the world and review how and why things work the way they do. Pupils are afforded the opportunity to focus on what makes a successful product, what purpose that product serves and how it can be improved. Bretherton pupils achieve their skill set through progression which begins in EYFS, exploring how to join and build through our excellent continuous provision indoor and outdoor areas. From this, Design & Technology is organised into a scheme of work based on a series of key skills. The D&T Association's 'Projects on a Page' is utilised to provide a widely enriching experience of skills progression throughout EYFS and Key Stages 1 & 2. We have the benefit of a school 3D Printer which enables pupils to use Computer Aided Design (CAD) technologies in both lessons and after-school provision. Our link with the local High School DT department has allowed for further exploration of such systems and visits to their workshops.

Our aim at Bretherton Endowed Primary School is to provide good quality learning experiences for all pupils and in Design & Technology. This includes:

- encouraging pupils to be independent in their exploration of design
- teaching a range of practical and intellectual skills through Projects on a Page
- involvement in cross-curricular DT projects and CAD 3D Printer projects
- opportunities to take part in activities hosted by experts
- celebration of achievement in DT
- opportunities to see DT applications in the wider world e.g. visits to other schools etc.

Intent

At Bretherton Primary School, we believe that high-quality Design and Technology lessons will engage and inspire children to think innovatively and develop creative procedural understanding. Our aims are to fulfil the requirements of the National Curriculum for Design and Technology by providing a broad and balanced curriculum, ensuring the progressive development of knowledge

and skills is supported through Projects on a Page. We want pupils to learn how to take risks so that they become resourceful, innovative, enterprising and capable citizens through the evaluation of past and present Design & Technology. We want to ensure our pupils develop a critical understanding of Design & Technology's impact on daily life and the wider world. At Bretherton we also feel it is critical for pupils to participate successfully in an increasingly technological world and how computer packages and apps can be instrumental in assisting a successful design process. Our 3D Printer provision ensures our pupils fully explore the possibilities of the digital 3D age. The D&T curriculum has been developed to ensure it is an integral part of the "whole school" approach to children's learning. At Bretherton Endowed CE Primary School we believe that our pupils deserve a broad and rich curriculum, and D&T is used to enrich that curriculum further. We invoke a three-part process of 'design, make and evaluate' and our work reflects the National Curriculum requirements which states:-

Design and Technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of life. The subject calls for pupils to become autonomous and creative problem solvers, as individuals and members of a team. They must look for needs, wants and opportunities and respond to them by developing a range of ideas and making products and systems. They combine practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. As they do so, they reflect on and evaluate present and past design and technology, its uses and effects. Through design and technology, all pupils can become discriminating and informed users of products, and become innovators. 'Pupils should be taught to develop their design and technology capability through combining their designing and making skills with knowledge and understanding, in order to design and make products'.

The Aims, in summary, of teaching Design & Technology at Bretherton Endowed school are;

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 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, as well as chopping and slicing) accurately.
• select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties, aesthetic qualities and, where appropriate, taste.

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.
• apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
• understand and use mechanical systems in their products.
• understand and use electrical systems in their products.
• apply their understanding of computing to program, monitor and control their products

• understand some of the ways that food can be processed and the effect of different cooking practices (including baking and grilling).

Special Educational Needs Disability (SEND) / Pupil Premium / Higher Attainers

All children will have Quality First Teaching. Any children with identified SEND or in receipt of pupil premium funding may have work additional to, and different from, their peers in order to access the curriculum dependent upon their needs. As well as this, our school offers a demanding and varied curriculum, providing children with a range of opportunities in order for them to reach their full potential and consistently achieve highly from their starting points. We recognise the fact that we have children of differing abilities in all our classes, and so we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies which are differentiated by task, expected outcome and/or support from peers or adults. D&T education is one particular area of the Curriculum which allows a great deal of pupil creative expression and non-verbal communication. Therefore, we aim to use the area of Design, Art and Craft as a means of supporting children with SEND to develop their own learning skills and levels of personal self-esteem. Each teacher will make every effort to adapt all areas of the D&T Curriculum to suit the individual needs of the children in their class. Children who have been identified as Gifted and Talented in D&T will be provided with opportunities to take part in any extra-curricular activities, such as making costumes or props for performances, visiting our partner High School or enhancing school displays.

How we do this?

Design and Technology is taught through a topic approach alongside Projects on a Page. Our process is carefully planned to engage and excite all our learners with teachers afforded the freedom to utilise their own passions to enhance curriculum links alongside Projects on a Page, as well as their professional judgement, to expand the outcomes. All staff have participated in training on delivering Projects on a Page and further D&T continuing professional development is always on offer for staff should they feel further support is needed. Our school works in collaboration within a cluster of local schools; here the subject leaders meet and discuss aspects of the D&T curriculum, sharing good practice and ideas for purposeful teaching and learning and we have a connection to our feeder High School for subject specialism support. The activities in Design and Technology throughout Key Stages 1 & 2 build upon the prior learning of the children. Children in their designing and making will apply knowledge and skills of:

• Textiles
• Food
• Mechanical Systems
• Structure
• Electrical Systems – Key Stage 2

At Bretherton Primary School we also have in place a skills progression document, which enables continuity over our two- year cycle and ensures that there is an increasing challenge for the children as they move up through the school. As well as making its own distinctive contribution to the school curriculum, Design & Technology aids the wider aims of primary education by making links between all areas of learning. The context for the children's work in Design & Technology is also well considered and children learn about real life structures and the purpose of specific examples, as well as developing their skills throughout the programme of study. The time dedicated to Design & Technology ensures that each topic can be delivered to a high standard and children can create

important and useful products. Resources are plentiful and allow children to be clever and creative when designing and making their products. All children are challenged during Design & Technology lessons through continuous verbal feedback and through problems presented to them. Subject Monitoring Forms are completed termly and a thorough Design & Technology audit is completed each year by the coordinator, with input from all other members of staff, so that resources can be replenished on a regular basis and schemes of work re-assessed. Year specific materials are delivered to class teachers and are stored in classrooms until they are needed. Perishable items for cookery are purchased by class teachers as and when required. In an effort to create an environment for learning, the use of effective display work is promoted throughout the Key Stages at all times, including 2D and 3D materials and using photography and school Blogs where it is impractical to display. Children are encouraged to actively participate and be responsible for creating displays, thus demonstrating the value placed on their work. Pupils can access up-to-date technology including through our 3D Printer and CAD apps on our school iPads. Our children also find out about famous designers and their designs and gifts to the world.

Impact

Within Design and Technology, we strive to prepare children to take part in the development of tomorrow's rapidly changing world. We aim to encourage children to become creative problem solvers, both as individuals and as part of a team. Through the study of Design & Technology children combine practical skills with an understanding of aesthetic, social and environmental issues, as well as of functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impact. Our Design & Technology curriculum is high quality, well thought-out and is planned to demonstrate progression. We focus on progression of knowledge and skills and discreet vocabulary progression also form part of the units of work. Each topic ends with all children creating a final product; these products are a fantastic way for children to demonstrate the skills they have learnt. Throughout the school, children are given the opportunity to consolidate their skills by creating their final product independently. Each lesson builds on the previous and children's skills are improved upon throughout each topic. It is also clear to see the progression of skills throughout the school through the quality of products that each year group creates. Subject leaders monitor the impact of our curriculum provision through completing regular monitoring, which includes listening to the voice of our children.

We also measure the impact of our curriculum through the following methods:

- Assessing children's understanding of topic linked vocabulary before and after the unit is taught.
- Summative assessment of pupil discussions about their learning.
- Images and videos of the children's practical learning recorded through Blogs and teacher discussion.
- Interviewing the pupils about their learning (pupil voice).
- Moderation staff meetings where pupil's workbooks are scrutinised and there is the opportunity for a dialogue between teachers to understand their class's work.
- Annual reporting of standards across the curriculum.

Health and Safety

In teaching certain practical elements of D&T to pupils, we recognise that safety is a key issue. All safety precautions must be taken. This is done by recognising health and safety in the classroom

organisation and, furthermore, by giving children guidance on how to use the equipment provided. Monitoring the pupils in small groups helps overcome the problems of safety when using potentially dangerous D&T equipment. Children will be introduced to the correct techniques for handling D&T equipment and will develop these techniques as they progress through the school. The co-ordinator is always available to guide staff in the safest ways of using various equipment including;

- Glue Guns
- Circle Cutters
- Craft Knives
- Saws
- Hammers
- Bradawls
- Drills
- Rasps

When working with tools, equipment and materials in practical activities, pupils are taught about hazards, risks and risk control in order to:

- recognise hazards, assess subsequent risks and take steps to control risks
- use information to assess the immediate and cumulative risk
- manage their environment to ensure the health and safety of themselves and others

Spiritual, moral, social and cultural development and British Values

Social

During DT there are many opportunities to promote social responsibilities. All the children have a collective responsibility to ensure they contribute to a safe working environment, where the use of tools and equipment are involved. Pupils are often asked to design and make products to meet the needs of others and value the feedback they receive; they must show mutual respect when working individually and collaboratively. Peer evaluation and self-evaluation of designed and made items plays a big part in Design & Technology work. Pupils learn to articulate their thoughts and feelings about their own and others' work, and learn to give and take criticism without offence.

Moral

Pupils are faced with moral decisions through designing, selecting materials/ingredients, methods of manufacture, considering the needs of others, as well as the sustainability and environmental impact. The 3 R's are routinely discussed throughout the design & make process – Reduce, Reuse, Recycle. Within the classroom and the wider community, the pupils are expected to show respect to others and take responsibility for their own actions and of those around them, taking into consideration the consequences.

Spiritual

Through the projects we offer and the curriculum we deliver at both Key Stages, the pupils are taught how to investigate products, aesthetic and functional, past and present and examine how they affect the quality of our daily lives. They are encouraged to develop their thinking skills and explore the wider world around them, to reflect upon what they see and develop an open mind and use this inspiration and creativity when approaching their design work.

Cultural

Pupils are taught that all their design work should be sensitive to the needs and beliefs of different backgrounds, ensuring all imagery, text and products won't cause offence. They think about how their ideas and products could impact on the world around them. Pupils are encouraged to use the work of artists and designers from a wide range of cultures and historical contexts to influence and support the development of their work.

Equality Statement

At Bretherton Endowed CE Primary School, we actively seek to encourage equity and equality through our teaching. As such, we seek to advance the equality of opportunity between people who share any of the following characteristic:

- gender;
- ethnicity;
- disability;
- religion or belief;
- sexual orientation;
- gender reassignment;
- pregnancy or maternity.

The use of stereotypes under any of the above headings will always be challenged.

Adopted by the Governing Body of Bretherton Endowed CE Primary School.

All aspects of our policy intends to comply within the Data Protection (GDPR) legislation.