Mugginton Church of England Primary School

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Design & Technology Policy

This policy has been written in accordance with the Christian ethos of our school, our recognition of British values, an awareness of our position in the Global community and taking account of all current Safeguarding and Child Protection guidance and the new national curriculum September 2014.

At Mugginton Church of England Primary School, Design and Technology (D&T) is an important part of our children's entitlement to a broad and balanced curriculum. D&T is an inspiring, rigorous and practical subject; indoor and outdoor lessons encourage children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. Children will use their creativity, imagination and developing skills/knowledge/skills to design and make products that solve real and relevant problems, considering their own and others' needs, wants and values.

Through a rich and progressive curriculum they will acquire a broad range of subject knowledge and, wherever possible, draw on disciplines such as mathematics, science, engineering, computing and art. Within a safe and nurturing environment, children will learn how to take risks, becoming resourceful, innovative, enterprising and responsible citizens. We aim to help children develop a critical understanding of the impact of past and present D&T to daily life and the wider world through meaningful opportunities to evaluate work.

It is our hope that all Mugginton children will use their design and technology skills to make a contribution to the creativity, culture, wealth and well-being of theirs and our future society.

At Mugginton, we promote pupils' spiritual, moral, social and cultural development through Design and Technology in the following ways:

The process of creative thinking and innovation inspires students to bring out undiscovered talents, which in turn breeds a self-confidence and belief in their abilities. It also challenges and appeals to the creative instincts that have driven humanity to discover, adapt and overcome.

We seek to develop a sense of 'moral conscience' in our pupils. We teach children to understand the wider impacts on the environment when designing and making new products, particularly at Forest Friday. We encourage sustainable living and consideration of the impact on environmentally sensitive areas of the world.

We teach the concept of self-regulation to ensure that pupils accept responsibility for their behaviour and the safety of others. We place an emphasis on developing the ability to work with others during the design and making process. Self and peer evaluation is used as a vehicle to improve the products being made and pupil's learning outcomes.

We seek to expand pupil's knowledge of cultural influences on design. We develop wider cultural awareness in Design Technology through projects that have a connection with our past heritage and how our industrial routes have shaped our nation.

Intent

Our Design and Technology curriculum encompasses the aims of the National Curriculum to ensure all pupils:

develop the creative, technical and practical expertise need 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.

At Mugginton, alongside the National Curriculum objectives we aim to

- To develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making.

- To foster enjoyment, satisfaction and purpose in designing and making.

- To provide a range of structured and appropriately-differentiated activities which develop a breadth of experience and progression in skills. Where possible, these will relate to the interests and everyday experiences of our pupils.

- To develop knowledge and to teach skills in order to assist in the design and making of products successfully.

- To develop the children's knowledge of tools and to encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures.

- To help children become aware of and to investigate simple products through disassembly and evaluation.

- To provide adequate time frames, access to information, skills and resources in order to develop an effective, useful and appropriate end-product.

- To enable children to talk about how things work, and to draw and model their ideas;

- To provide equal opportunities for access to tools and skills and to develop the qualities, aptitudes, skills and intelligences of individual pupils.

- To use ICT software such as Sketch-up, to assist our designing and learning.

In a D&T lesson at Mugginton, you will see:

Happy children, who feel safe and confident enough to contribute their ideas meaningfully and perform in front of their peers. The children will be able to name different D&T skills they use and will be able to talk about the ICT applications—such as Sketch-Up—which they have used to inform their design. The children's D&T vocabulary will be displayed and they will be able to talk about how they can enjoy D&T safely in the classroom. The visitor would see a wide variety of D&T ideas and creativity and children will be able to describe the strengths of their work and next steps to improve further. The children will be able to tell you what they are learning and what skills/knowledge they need to use in order to succeed (in an age-appropriate manner). Children will be engaged and excited by their class D&T lessons, including initiatives such as 'Stem Days' and our weekly Forest Friday sessions.

Implementation

Planning for each key stage ensures continuity and progression of skills/knowledge. D&T is planned on a four year cycle and is taught using the principles of the Model D&T Curriculum (March 2021). Topics that the children study in D&T build upon prior learning. There are opportunities for children of all abilities to develop their skills and knowledge and the children are increasingly challenged as they move through the school.

Implementation and Organisation:

- Teachers ensure that the children apply their knowledge and understanding when developing ideas, planning and making products and then evaluating them. All ideas will be treated with respect.

- Design and Technology learning in the EYFS takes place within Understanding of the World and Expressive Art and Design and is based on the Early Years Outcomes Guidance for EYFS.

- The Design and Technology programme of study (for KS1 and KS2) is divided into 4 main areas:

1) Design
Pupils will design purposeful, functional, appealing products for themselves and other users based on design criteria that are fit for purpose and aimed at particular groups or individuals. Pupils will generate, develop model and communicate their ideas through discussions.

2) Make
Pupils will select from and use a range of tools and equipment to perform practical tasks. They will select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics and functional properties.

3) Evaluate
Pupils will explore, evaluate, investigate and analyse a range of existing products. They will evaluate their ideas and products again design criteria and consider the views of others to improve their work.

4) Technical knowledge
Pupils will build structures, explore how they can be made stronger and apply their understanding of how to strengthen, stiffen and reinforce structures. They will explore and use mechanical systems in their products. In KS2 they will understand and use electrical systems in the products (for example series circuits incorporating switches, bulbs, buzzers and motors)

Planning for KS1 and KS2 is organised in line with the frame work for Design and Technology as set out by the National Curriculum 2014. Planning in Nursery and Reception is based on the Early Outcomes documents for the EYFS.

Design and Technology is taught as a class activity each week, on a half termly cycle, alternating with Art and Design. Further opportunities for design and technological learning will also present themselves within other subject areas.Our D&T curriculum is further supplemented by our weekly Forest Friday work, led by Mrs Wallen and Mrs Bennett.

A range of teaching styles, taking advantage of the use of ICT (microscope / IWB / video / DVD as well as the available hardware and software available in the school) helps to promote a positive attitude towards design and technology.

Health and Safety

• Teachers always teach the safe use of tools and equipment and insist on good practice. Children should be strictly supervised in their use of equipment at all times.
• Direct safety instructions should be given to children each time they undertake a design and technology activity.
• The craft knives and rotary cutters will only be used by responsible Year 4, Year 5 and Year 6 children under direct supervision.
• The glue guns will be used by Key Stage 2 children only when supervised.
• Food will be brought and used on the same day it is needed as storage is difficult.
• Food safety procedures will be followed when preparing for food activities. Design & Technology Policy Page 7
• Staff will ensure that allergies and permissions are planned for before any food items are used (lactose-intolerant/vegan/allergens etc.)

Resources:

• Resources for each unit are stored in appropriate year groups or in the central resources room. Specialist resources need to be requested from the Design and Technology Co-ordinator in anticipation of teaching the unit.
• The Design and Technology Co-ordinator is available for support in areas of the curriculum where it is needed.

Impact

Through learning the principles of design and technology in conjunction with other areas of the curriculum (Science/Maths/Computing etc.), pupils will develop their own capacity for individual excellence. Through individual and team endeavours, they will learn the necessity of clear planning, effective/efficient production, collaboration with others, self and peer-evaluation and flexibility. It will also provide them with opportunities to use computing skills in a range of practical applications.

These skills will have a clear impact on their ability to function in the world of work at a later stage of their lives as well as in the classroom and local community.

Additionally, they will learn to be resourceful and pro-active in everyday problem-solving situations through knowledge of the importance of flexibility of approach and through listening to the ideas of others. They will come to understand that they must take into consideration the function of the product and its users. Throughout the course of a project, they will be able to consider the implications of their choices of materials and, thereby, engage meaningfully with the Reduce, Re-use, Recycle agenda.

This policy will work to equip our children with the key skills of project-management, team-building and a sense of pride in their creativity. They will become more pro-active, more able to lead and more practical in their thinking and solving of problems that affect society.

Assessment and recording

Teachers assess children's work in design and technology by making assessments as they observe them working during lessons. They record the progress that children make by assessing the children's work against the learning objectives for their lessons. At the end of a unit of work, teachers record children's attainment in a three column grid. Teachers then use the levels that they record to plan the future work of each child and to make an annual assessment of progress for each child, as part of the annual report to parents. Each teacher passes this information on to the next teacher at the end of each year.

The design and technology subject leader keeps evidence of the children's work in a portfolio.

Monitoring and review

The monitoring of the standards of children's work and of the quality of teaching in design and technology is the responsibility of the design and technology subject leader. The work of the subject leader also involves supporting colleagues in the teaching of design and technology, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The design and technology subject leader gives the headteacher an annual report in which s/he evaluates the strengths and weaknesses in the subject and indicates areas for further improvement.

Be the best person you can be