Trimley St Mary - Design Technology Policy

The National Curriculum states that:

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.

The National Curriculum for Design and Technology 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.

Rationale

At Trimley St Mary we believe that Design and Technology is essential to prepare pupils to participate in tomorrow's rapidly changing technologies. Teachers encourage children to develop their investigating, designing, making and evaluating skills by thinking and intervening creatively. Staff at Trimley St Mary review and adapt the Design Technology curriculum in accordance with statutory updates.

The main recent changes to Design Technology include:

- The focus of mouldable materials is now a major part of the curriculum in both key stages
- There is now far more emphasis on computing in the DT curriculum
- Textiles also plays a major part across the school
- In DT a greater time is given to developing ideas and prototypes.
- The design cycle has become more explicit, and more emphasis is now placed on regular evaluations.
- Production of food for consumption

National Curriculum statutory requirements for Design Technology

Key Stage 1

Through a variety of creative and practical activities, pupils are taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They work in a range of relevant contexts, such as the home and school, gardens and playgrounds, the local community, industry and the wider environment. When designing and making, pupils are 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 such as 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, such as 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

Through a variety of creative and practical activities, pupils are taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They work in a range of relevant contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.
When designing and making, pupils are 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, such as 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, such as gears, pulleys, cams, levers and linkages.
• understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors.
• apply their understanding of computing to programme, 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.

Trimley St Mary Primary School - VISION & VALUES

OUR VISION - We provide an environment that allows children to thrive, developing the independence and resilience needed to reach their full potential, while becoming active members of the wider community.

OUR DRIVERS

At the heart of Trimley St Mary School, lies clearly defined and understood "curriculum drivers" that are the guiding principles that accurately shape the personality of our curriculum. These drivers underpin our curriculum and drive the teaching and learning in our school and therefore the pupil's experiences.

COMMUNITY	EMOTIONAL WELLBEING	ENQUIRY	POSSIBILITIES
Our school is a friendly and welcoming setting, with a strong sense of belonging, care and support. We recognise parents and the wider community as active partners in the education process and life of the school. By fostering strong community links, and working closely with families, local businesses, and other agencies, we support, motivate, and inspire all children to achieve and be successful in their own right.	As a THRIVE school, we provide a powerful way of working with children to support optimal social and emotional development. The way we interact with our children has a huge impact on the way they think about themselves and their levels of personal resilience. We improve empathy or the ability to understand what another person is thinking or feeling, which improves children's awareness of others and helps them to build positive relationships. We develop happy, healthy confident children who are ready and open to learning.	We recognise the importance of fostering an enquiring mind and love of learning by choosing the right context to engage our children in their learning. Our curriculum uses engaging topics and open-ended questions to promote curiosity, interest, and motivation. Children are encouraged to develop and deepen their understanding as well as drive their learning forward by questioning, investigating and solving problems.	Through our broad and balanced curriculum, we recognise the importance of providing our pupils with knowledge and experience of the wider world. We encourage them to develop self-belief, ambition, and the sense of what it is possible for them to achieve.

OUR GOALS	To ensure that pupils are fully active citizens within the school community.	To ensure all pupils are reflective, analytical and active independent learners.	To ensure that staff subject knowledge and pedagogy builds over time, translating into improvements in the teaching of the curriculum.	To ensure all pupils achieve highly in order to fulfil interests, aspirations for the future and meet their academic, sporting & creative potential.	To ensure that pupils acquire a wide vocabulary, communicate effectively and acquire a knowledge of phonics, giving them the foundations for future learning.
	PERSONAL DEVELOPMENT	BEHAVIOURS & ATTITUDES	LEADERSHIP & MANAGEMENT	QUALITY OF EDUCATION	EARLY YEARS

Curriculum Intent

The 8 Cs - Our curriculum is underpinned by core learning skills that all children need in order to be effective learners. Children use these skills to evaluate themselves as learners, in addition to their knowledge and understanding of concepts within Design Technology.

As Designers we will:-

- Show significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes.
- Demonstrate an excellent attitude to learning and independent working.
- Establish an ability to use time efficiently and work constructively and productively with others.
- Carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- Act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- Possess a thorough knowledge of which tools, equipment and materials to use to make their products.
- Apply mathematical knowledge.
- Manage risks exceptionally well to manufacture products safely and hygienically.
- Display a passion for the subject and knowledge of, up-to-date technological innovations in materials, products and systems.

Curriculum Implementation

Sequence

Design technology is a foundation subject in the National Curriculum. Our school follows the objectives from The National Curriculum as a basis for planning Design Technology alongside the Chris Quigley Essentials Curriculum, which exceeds new national curriculum expectations. Planning is progressive and skills are revisited from Years 1 to 6 to ensure children have deeper understanding of concepts and techniques. Knowledge, skills and understanding are progressively built upon through each of the areas of experience of designing, making, evaluating, technical knowledge and cooking and nutrition. Within each discipline this has been provided through gradually extending the breadth of content, increasing the depth of knowledge and understanding and focusing on improving the quality of responses and outcomes.

In Key Stage 1 children are taught to follow the three part design, make and evaluate process through practical and creative activities linked to their topic. These skills are developed in Key Stage 2 where they are also linked to topics being studied.

Teaching and Learning

Long term plans ensure that that children experience key skills in the three threshold concepts, across all Year Groups. These include:-

'To master practical skills',
'To design, make, evaluate and improve'
'To take inspiration from design throughout history'

Design Technology teaching within our school maximises the use of a 'Creative, cross-curricular' approach, and all DT units are linked to each phase's termly topics, clearly shown on Medium Term plans. Teachers plan in accordance with the 'Chris Quigley Essentials' Creative Curriculum document, which exceeds new national

curriculum expectations. Teachers are encouraged to use the 'Chris Quigley Essentials Curriculum online resources' to inform short term planning. This provides a comprehensive guide on the three threshold concepts and the corresponding progression of skills that need to be taught. Staff are encouraged to make the scheme their own, to adapt and modify it as necessary to suit their own needs and requirements. We aim to plan for strong cross-curricular links in order to maximise DT learning opportunities, while ensuring that lessons are meaningful and purposeful for the children. Long and medium term plans are available for parents to view on the school website, and addition to this, Curriculum Newsletters on year group pages are updated half-termly. The planning process involved in developing this scheme of work, has ensured a progression and continuity of learning experiences from Year 1 to Year 6. Knowledge, skills and understanding are progressively built upon through each of the areas of experience of the seven main areas: Food, Materials, Textiles, Electricals and Electronics, Computing, Construction and Mechanics. Within each discipline Milestones ensure that teachers are planning and teaching to facilitate 'basic', 'advancing' and 'deep' skills.

Extra Curricular Design Technology Opportunities

At Trimley St Mary Primary School we give children the opportunity to take part in enterprise experiences where they get to plan, make and evaluate products which they then sell to their grown ups. Children have produced a variety of different products linked to the different topics and themes in each phase.

Special Educational Needs

Design Technology adheres to the whole-school Equal Opportunities policy. DT is planned to ensure that it meets the varied needs of all learners, regardless of their gender, background, culture, physical or cognitive development. Differentiation is provided in a range of ways when implementing short term plans, including a variety of individual, paired or group work, higher-order questions from Blooms Taxonomy, use of SFA pedagogy and strategies, as well as both open-ended and structured tasks. Opportunities are provided to reflect and promote positive attitudes towards cultural diversity, and Medium Term plans ensure that relevant and appropriate SMSC links are evident and included.

Spiritual, Moral, Social and Cultural

We promote ***spiritual*** development by:-

- Enjoying and celebrating personal creativity.
- Reviewing and evaluating created things.

We promote ***moral*** development by:-

- Raising questions about the effect of technological change on human life and the world around them.

We promote ***social*** development by:-

- Exploring dilemmas that individuals may face and developing practical solutions to these problems.

We promote ***cultural*** development by:-

- Considering cultural influences on design.

- Asking questions about functionality v aesthetics.

Use of Computing

The 'cross-curricular' approach ensures that children have the opportunities to practise and develop their DT skills through a variety of Computing programmes. The 'Chris Quigley Essentials Curriculum' provides clear guidelines and suggested Computing links for each year group, and each of the key areas. Children have access to IPads as well as digital cameras.

Health and Safety

When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:
-About hazards, risks and risk control
-To recognise hazards, assess consequent risks and take steps to control the risks to themselves and others
-To use information to assess the immediate and cumulative risks
-To manage their environment to ensure the health and safety of themselves and others
-To explain the steps they take to control risks

It is the responsibility of the Design Technology subject leader to pass on any relevant health and safety information to all staff who teach Design Technology. It is the responsibility of each individual member of staff to ensure that they have read and understood the information passed onto them and act accordingly.

Our curriculum incorporates new online safety guidelines. These are outlined in the Department for Education's new guidance document 'Teaching online safety in school' (DfE, June 2019). We recognise the importance of helping children and young people not only use the internet safely, but also give them opportunities to learn how to behave online. Throughout, the guidance emphasises the importance of teaching that is always age and developmentally appropriate, regardless of the curriculum subject that is being taught. The "Teaching online safety in school" guidance, reminds us that when teaching about various safeguarding topics, staff should be mindful that there may be a child or young person in the lesson who is or has been affected by these harms. We recognise that it is good practice to consult the Designated safeguarding Lead 'when considering and planning any safeguarding related lessons or activities (including online) as they will be best placed to reflect and advise on any known safeguarding cases, and how to support any pupils who may be especially impacted by a lesson'.

The guidance 'Teaching online safety in school' can be downloaded here:
https://www.gov.uk/government/publications/teaching-online-safety-in-schools
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Assessment and Recording

Records are kept in accordance with the school's current Assessment Policy. Children's work is recorded in school through photographs and written work which are stored either in art books, topic folders or online learning journeys such as 'Tapestry' or 'Seesaw'. Assessments of children's attainment are made against the Chris Quigley

Milestones from the Essentials Curriculum, where children are identified as 'basic', 'advancing' or 'deep'. Assessments are uploaded to Insight. Staff share assessment information with the DT subject leader regularly, and data analysis is conducted to evaluate progress and attainment.

Monitoring and Review

The planning and teaching of Design Technology is monitored and evaluated across both Key Stages, and EYFS in accordance with the school's current Monitoring Policy, by both the subject leader and the DT Governor. Evidence is collected in a variety of ways, such as book scrutiny, pupil perceptions, learning walks, team teaching and co-planning. Areas of strength and development are identified and fedback to staff and the Headteacher. The subject leader is responsible for identifying targets for development that form part of the whole-school action plan. Targets are reviewed and evaluated regularly, and the staff and DT Governor are informed. Furthermore, the DT lead shares the DT Raising Attainment Plan with the Governor so that they are aware of the next steps to improve the subject whilst monitoring DT across the school. Learning walks and book scrutinies are then undertaken to assess art in all year groups in line with the DT RAP and Chris Quigley 'BAD' assessments.

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