MARISH

ACADEMY TRUST

Design Technology Policy

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1. Introduction:

Marish Academy Trust prides itself on giving all students the opportunity to explore and build on their experiences and knowledge, developing resilience and building aspirations through research and investigating skills.
Design and technology prepares children to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. Through researching, planning, designing, creating and evaluating, children are encouraged to become autonomous and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems. Through the study of design and technology they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts on the world today. Design and technology helps all children to become discriminating and informed consumers and potential innovators of tomorrow, giving them motivation to become outstanding designers and technologists of the 21st century.

2. Aims

In Design and Technology, our intent is that children become explorative and inquisitive creators who, through research, discussion, practically making and evaluating, will develop a passion for the subject and the ability to work constructively and productively both independently and with others. Encouraging students to use their initiative and ask questions to become confident researchers.

- To research and understand the inventions that have been created by inventors and the impact this has on the world around them.
- Develop imaginative and creative thinking in children and to enable them to talk about what they like and dislike when designing and making.
- Enable pupils to discuss how things work, and to draw and model their ideas.
- To create prototypes to test out initial designs, to market research this by asking relevant questions and to make changes as necessary.
- To instil the love of cooking in pupils so they will be able to plan and make economically friendly meals.
- Encourage children to select appropriate tools and techniques for making a product.
- Prepare for adult life by exploring attitudes towards the world and how we live and work within it.
- Develop an understanding of technological processes, products, their manufacture, and their contribution to our society.
- Help children appreciate the need to take account of the necessity for hygiene (when preparing food) as well as health and safety, both for themselves and of those around them.

3. Delivery of Curriculum

Foundation Stage:

Teaching in the Foundation stage is cross-curricular over the seven areas of learning. We encourage the development of skills, knowledge and understanding that help nursery and reception children make sense of their world as an integral part of the school's work. This learning forms the foundations for later work in design and technology. These early experiences include asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction materials safely and with increasing control.

Pupils are provided with opportunities that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity.

Key Stage 1 and 2:

Design Technology is taught within our Creative Curriculum and at the beginning of each topic, pupils are introduced to the unit and acknowledge the product they are making and its purpose. They are then asked to identify the design specification as a written list to show what their intended product must be able to do. Pupils will then go on to research their product getting ideas for their own designs and identify similarities and differences. Next, they will identify and collate together a list of equipment/materials needed; plan potential designs for their final product; identify specified steps to make their selected end product; identify any problems they may encounter; make and lastly evaluate their final product. This will be done by self and peer assessment. All written work will coincide with practical elements of the unit and will be recorded in topic specific differentiated D&T work booklets.

A whole school overview of the subject has been provided, which has been carefully constructed so D&T skills are developed appropriately and in a systematic way. Learning units builds up the skills from previously taught topics where the product outcome will clearly demonstrate progression from Years 1-6. In addition to this, each unit includes the appropriate tiered vocabulary, which can also be added to throughout the topic by pupils and referred to in every lesson.

Additionally, The Essentials Curriculum taken from the Chris Quigley Education site has also been embedded for QFLs for individual units. These contribute to the planning stage of lessons.

Key stage 1 breadth of study

Key stage 1 pupils should:

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.

- By developing their ability to design purposeful, functional and appealing products for themselves and others based on design criteria.
- They should generate, develop, model and communicate their ideas through a range of means including: discussion, drawing computing and prototypes.
- They should select and use a range of tools and equipment to perform practical design tasks such as cutting, shaping, joining and finishing and make use of a range of materials, textiles and ingredients.
- Pupils should be able to explore and evaluate a range of existing products and evaluate their own ideas and products against their research and design criteria.

- They should build structures and develop their technical knowledge on how these can be made stronger, stiffer and more stable.
- Use technical knowledge in a range of design technology topics to explore mechanics, cooking and nutrition.

Key stage 2 breadth of study:
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.

Key stage 2 pupils should:

- Use research to develop design criteria to inform the creation of innovative, functional, appealing products that fit a purpose; these can be aimed at particular individuals or groups.
- Continue to generate, develop, model and communicate their ideas; building on their experiences in key stage 1 to create 4D learning through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design.
- Build on their experience to select from and use a wider range of tools and equipment to perform practical tasks.
- Investigate and analyse a range of existing products and evaluate their ideas and own products against their design, considering how to improve their own and others work.
- Understand how key events and individuals within design and technology have helped shape the world they live in today, making links to their own lives.
- Continue to develop technical knowledge to understand reinforcement in complex structures; mechanical systems and their products; electrical systems and products and apply an understanding of computing to programme, monitor and control their products.
- Build on knowledge of cooking and nutrition by applying principles of a healthy and varied diet; to prepare and cook dishes and understand seasonality of ingredients and how they are grown, reared and caught.

4. Inclusion

Equal Opportunities and EAL:

At Marish Academy Trust we aim to provide equal opportunity for all pupils whatever their age, ability, gender, race or background. We want all our pupils to achieve their full potential during their time with us. As such, teachers work to ensure that our expectations, attitudes and practices enable all pupils to reach their potential.

Where particular pupils have learning and assessment requirements which must be addressed in order to overcome barriers to learning, for example as a result of disability, or linked to the pupils' progress in learning, learning support assistants or class teachers consider these requirements by:

- Providing all pupils with EAL equal opportunities to achieve in this subject area as their peers. Where and when appropriate, activities are differentiated so that all learners can access the curriculum. At specific times, the EAL support team work alongside pupils to support them with their learning. Topic specific word mats are provided with key vocabulary, together with relevant pictures and a word bank to refer to throughout their learning.

- Marish Academy Trust is committed to ensuring equal opportunities of all pupils with any form of disability and will ensure that disabled pupils are treated favourably in any procedures and practices. Children bring different experiences and talents to D&T and the qualities they already possess should be valued, whilst opportunities for widening their experiences need to be created. When a pupil's disability has been disclosed, the school will ensure reasonable adjustments are put in place so that they can have full access to the curriculum.

Special Educational Needs:

Design and Technology should be an enjoyable, stimulating experience for all pupils. Its Visual, Auditory and Kinaesthetic skills approach enables any pupil with Special Educational Needs to fully participate in lessons. The varieties of areas in D&T (woodwork, textiles, cooking, graphic designing etc) mean that pupils with abilities in different areas will be able to achieve in this subject. The newly introduced D&T work booklets are differentiated for each year group and specific to each unit/topic in the D&T curriculum. These booklets are further differentiated for the more and less able learners to provide an all-inclusive and approachable curriculum for all.

Well-managed group work and/or allowing children to collaborate means that pupils with reading or writing difficulties can be helped by other pupils. Teachers should be prepared to adapt activities or give extra help where needed. Well prepared stimulating activities should increase motivation and reduce problems of a behavioural or emotional nature.

In many cases, the action necessary to respond to an individual's requirements for curriculum access will be met through greater differentiation of tasks and materials. Where pupils need access to specialist equipment or adapted activities, teachers will refer to and implement the pupils' statement of special educational needs and work closely with representatives of other agencies who may be supporting the pupil. In addition, during the 'making' element of each unit there will be extra adult support (in addition to the class teacher) to support any learners who are experiencing difficulty to achieve the QFL and to hone the skills of the unit.

5. Assessment, roles and resources:

Assessment and record keeping:

The D&T subject leaders, Creative Curriculum leaders and senior management are responsible for observing practice and monitoring the quality and impact of the teaching and learning of D&T. Termly in-depth monitoring is completed where planning and learning scrutiny takes place. As a result of this, relevant feedback is provided to relevant year groups and leads for the improvement of the teaching, learning and delivery of the subject. Teachers analyse pupils' progress at the end of each school year to complete annual reports to parents.

In the past year, D&T project files for years 1-6 have been introduced for each year group to place the unit booklets in. These booklets are evidence of the completed work showcasing skills throughout the years and across the key stages. These skills entail the researching, planning, developing, making and evaluating elements of each topic. Pictures are also being taken and placed in these booklets to showcase work produced and evidence of skills.

In relation to marking, teachers should also refer to the school's marking policy for detailed guidance. This year, changes have been made for D&T, where subject leads have created a skills-based end of unit assessment. DT skills that the child has achieved are to be highlighted in green and the skills that have not yet been achieved or met will be highlighted in pink. These end of unit assessments are specific to each DT unit in each year group. In addition to this, teachers can add any further comments if they wish. Teachers are to assess their pupils in-line with the marking policy.
Through the use of Proof of Progress assessments (POP Tasks), teachers can identify and analyse a pupil's progression alongside the individual milestones of the threshold concepts which are available in the milestone document. This in turn will inform the teacher of the progress, which leads to an accurate and fair assessment of that child ready for the end of year assessments and pupil reports.

Resources:

Each school has a wide range of resources to support the teaching and learning of D&T. These are ordered and gathered as the budget allows. Resources for each year group are stored in the subject leader's classroom and/or in the D&T/Art cupboard and shared as needed.

In addition, the subject leaders can provide access to a range of practical resources and external experts to enhance pupils' learning across the key areas studied.

ICT:

ICT enhances our teaching and learning in D&T, wherever appropriate, in each key stage. Pupils will be provided with opportunities to develop and apply their ICT capability to support their learning in Design and Technology. They will use the internet selectively to find information (researching), digital cameras to take pictures, email to communicate with people in other places and databases/word processors/spreadsheets to handle and present information. Opportunities for embedding ICT as a tool to support learning and teaching are identified in curriculum planning.
In Key Stage 2, the expectation is for pupils to use software to create a computer-aided design. Year 5 are now using ICT for this unit to create a box packaging for their mini-enterprise unit. See Year 5 planning – Spring 1 for topic specific plans.

Role of the subject leader:

- Monitoring and supporting planning and ensuring the coverage of key skills.
- To provide accurate feedback for impact.
- Leading CPD training to ensure that teachers are aware of the threshold concepts as set out in the subject overview.
- Analyse each topic of planning across the trust, creating POP tasks to accommodate topics taught.
- Access to practical resources, materials and equipment in order to enable students to explore and develop.
- Lesson observations/sharing good practise.
- Ensuring common standards and formats for recording and assessment.
- Providing constructive feedback to move the learning in the subject on and for the development of skills.

6. Health and Safety

A safe working environment and ways of working need to be encouraged from the earliest stage and safe practices should be understood by voluntary helpers.

All areas must be in the direct vision of the teacher and there should be enough space for each child and group to work comfortably.

Teachers should be aware of any physical limitations which a pupil may suffer, for example, poor eyesight or hearing, dominance of left or right hand, poor fine motor skills or other special educational needs and make suitable arrangements to allow the pupil to operate effectively.

THE USE OF SHARP EDGE TOOLS SUCH AS WOOD CHISELS AND LARGE KITCHEN KNIVES SHOULD BE AVOIDED IN PRIMARY SCHOOLS.

Craft knives should only be used by older children (Year 6) and under direct supervision of an adult. Always use with a safety metal ruler and preferably on a cutting mat. Children to be taught to keep their fingers behind the cutting edge of sharp tools.

Tools

Tools which present a safety hazard, such as a glue gun, saws and other tools which possess sharp blades or points, need to be secured away from general tools. The safe use of tools should be modelled, by the teacher, before any practical work is undertaken.

(a) Saws

Never saw directly on the table. Always use a bench hook or G-cramp the material in some way. Show the children how to start a saw cut by drawing the saw towards them to make a notch. When sawing, the effort is needed on the push stroke. Keep your hand and arm in line with the saw cut. Support the material when nearly finished to prevent splintering.

(b) Drills

Children need to be shown how to change twist drills, how to hold a hand drill and how to keep it at right angles to their work. When drilling, turn the handle in a clockwise direction and continue turning the same way when removing the drill bit from the hole.

(c) Glue guns

Children should experience a variety of ways of joining materials other than with a glue gun. However, a glue gun is very useful for joining wood, metal and certain plastics. It is recommended that the cooler type of glue gun should be used only by children from Year 4 upwards, under the close supervision of a teacher.

(d) Working with food

Cooking utensils and work areas should be kept meticulously clean. Children should learn simple personal hygiene rules such as wearing a clean apron, washing hands before handling food and not eating food as they are cooking.

7. Revision History

Version	Date	Author	Comments
1.0	29/01/16	K.L	
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3.0	29/01/19	K.L	
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8. Approval History

Version	Approved	Comments