



St. Merryn Design and Technology Curriculum Overview

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Rationale for the curriculum, including the purpose and the key ideas

Design and technology is essentially a practical subject that allows children to think imaginatively and creatively and to become more autonomous and effective problem solvers, both as individuals and as part of a team. Our aim is to provide children with a rich and enjoyable experience of design and technology, in which they can acquire and develop their own designing and making skills in line with our school's identified "curriculum drivers" and learning skills initiative.

The objectives in teaching design and technology are:

- To develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making
- To enable children to think and talk about how things work, and to draw and model their ideas
- To encourage children to select appropriate tools and techniques to make quality products, whilst following safe procedures
- To use and explore a range of materials, resources and equipment
- To explore attitudes towards the made world and how we live and work within it
- To develop an understanding of technological processes, products, their manufacture and their contribution to our society
- To use the internet to explore ideas and already made products
- To foster enjoyment, satisfaction and purpose in designing and making things.

Food in the Curriculum:

Food, by its very nature, lends itself to many learning opportunities. The school curriculum can be used to enrich pupil's experience of food and healthy eating.

Curriculum content which all children will focus on:

- Food groups leading to good health/ growth.
- The development of healthy bodies and teeth through good nutrition.
- Food from different cultures/ beliefs explored through a cross-curricular rolling programme.
- Cooking as part of DT lessons across all age ranges.
- Producing attractive displays promoting healthy lifestyles.
- Internet research and other learning materials to be accessed by pupils.

When designing and making, the children 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 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
- understand and use electrical systems in their products
- apply their understanding of computing to program, monitor and control their products

Impact

We ensure the children:

- 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 and 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.

1. Subject planning, delivery and assessment

Planning

Over each term, the children will have the opportunity to investigate, design, make and evaluate a DT project. This project may be completed during a weekly 45 min- 1 hour lesson, blocked over

several afternoons or as a DT day. Their learning journey will be recorded in their topic books, with their final pieces being showcased through video or picture.

DT activities may be carried out individually, as a small or large group, or as a whole class activity.

Planning for DT is provided for in medium and long-term plans.

Delivery

Through a flexible curriculum, the school uses a variety of teaching and learning styles in design and technology lessons. The principal aim is to develop children's knowledge, skills and understanding in the subject.

Teachers ensure that children apply their knowledge and understanding when developing ideas, during planning and making products and when evaluating them. This is done through a mixture of whole-class teaching and individual or group activities. Within lessons, children are given the opportunity both to work on their own and to collaborate with others, listening to other children's ideas and treating these with respect. Children critically evaluate existing products, their own work and that of others. They have the opportunity to use a wide range of materials and resources, including ICT.

In all classes there are children of differing ability. This fact is recognised and suitable learning opportunities are provided for all children by matching the challenge of the task to the ability of the child. This is achieved through a range of strategies such as:

- Setting common tasks that are open-ended and can have a variety of results;
- Setting tasks of increasing difficulty where not all children complete all tasks;
- Providing a range of challenges through the provision of different resources;
Grouping children by ability and setting different tasks for each group;
- Using additional adults to support the work of individual children or small groups;
- Providing support where individual children have particular gifts or talents.

Assessment

Teachers assess children's work in design and technology by making assessments as they observe them working during lessons, allowing for different learning styles. They record the progress that children make by assessing the children's work against the learning objectives for the lessons. Children are encouraged to make judgements on ways in which their work can be improved.

During the Foundation Stage children will be assessed as part of Understanding the World against the development matters statements and early learning goals.

Assessment and feedback to pupils is usually carried out by observation and oral feedback during lessons.

At Key Stage 2, pupils are required to show their progression in their sketchbook. Progression and achievement is tracked against learning objectives. Photographic records and some work may be kept until the end of the year

2. A clear rationale for the curriculum, including the purpose and the key ideas

[See point 1 for curriculum rationale](#)

3. Monitoring and evaluation of intent, implementation and impact of lessons

Monitoring implementation and impact of lessons

Subject leadership time is allocated to allow for the subject leader to carry out learning walks and planning scrutiny to ensure that the above curriculum delivery is followed as per this document and the subject policy.

Impact of lessons will be monitored by teachers formatively throughout a project. Teachers can be supported by the subject leader in order to aid the impact of lessons where required.

4. Action plans related to whole school SIP

See the [Action plan](#)

5. Connectivity: a statement on how the subject works alongside other subjects

Our cross curricular, topic led approach at St. Merryn enables us to incorporate DT projects designed to enrich topic knowledge and understanding. Therefore, allowing children to make connections and learn about different historical times, countries, cultures and belief systems.

Literacy - Design and Technology contributes to the teaching of Literacy by providing valuable opportunities to reinforce prior learning. Discussion, drama and role-play are important ways for the children to develop an understanding that people have different views about design and technology. The evaluation of products requires children to articulate their ideas and to compare and contrast their views with those of other people. Through discussion, children learn to justify their own views and clarify their design ideas.

Numeracy – In design and technology, children learn to measure and use equipment correctly, generate nets of shapes in order to create packaging and weigh and measure accurately. They will also learn about size and shape and make “real” use of their mathematical knowledge in order to be creative and practical in their designs and modelling.

Science – Science helps in design and technology, looking at and drawing electrical circuits. It also helps children to think about using materials to create structures, which can withstand a force.

ICT - Information and Communication Technology (ICT) enhances the teaching of design and technology, wherever appropriate, in all key stages. Children may use software to enhance their skills in designing and making things. Younger children are able to use simple software to enhance their learning. Older children use an ICT control program to control mechanisms and to get them to move in different ways, either in a virtual world or via an infrared connection to working models. The children also use ICT to collect information and to present their designs through a range of design and presentation software.

Personal, Social and Emotional Education (PSHE) – Design and technology contributes to the teaching of PSHE, encouraging children to develop a sense of responsibility in following safe procedures when making things. They also learn about health and healthy diets. Their work encourages them to set targets and meet deadlines. They will also learn how to prevent disease from spreading and about personal hygiene when working with food.

6. Budget

The budget is monitored by the Executive Head and Head of School and resources are allocated according to priorities on the action plan.

7. Governance

At St Merryn LAB members work together and share time between subject areas.

During subject area discussions, the subject leader will compile a presentation to update the LAB members on the position and direction of the subject area.

8. Risk assessments

Certain health and safety concerns are inherent with DT, including the storage of materials and tools and the use of equipment within lessons. Children are instructed in the correct use of equipment and tools and the specific dangers of using heated or sharp resources. Children are supervised at all times during activities. A risk assessment covering the use of craft knives, saws and other sharp tools has been conducted and is updated as needed.

Off-site visits and peripatetic staffing

For off-site visits such as visiting farms, museums and residential trips, risk assessments will always be sought, reviewed and approved by Exec. Head, Head of School and Subject leader before any trips can go ahead.

Relevant risk assessments will be kept in a folder on the Staff shared drive and also a paper copy will be taken on the relevant trip with the off-site trip leader.

9. Peripatetic staffing and non-teaching staff

Peripatetic staff are permitted to work within the school setting again following the outbreak of COVID-19.

Internal non-teaching staff

Other non-teaching staff are encouraged to come forward with their skill sets within a particular area of the national curriculum.

10. Extra-curricular activities.

Here at St Merryn we ensure there are opportunities to experience DT through extra-curricular activities.

After-school clubs are a regular and permanent fixture (outside of COVID restrictions). The clubs offered are offered to whole key stages and led by teachers with a particular interest in an area.

There are a range of activities for the children throughout the year, from prop making for the school play to designing digital animations encouraging acquisition of skills and use of varied media.

There are indoor Lego and construction kit clubs but we also encourage the children to make the most of our wonderful outside spaces by running woodland clubs teaching the children to work with different materials and use basic tools. The woodland is also available to the children at playtimes, weather permitting, where they have materials to make sculptures, shelters and dens.

The outside literacy shed also provides books, information and drawing and making resources to encourage DT skills. It also houses a shadow puppet screen which can be used in the summer, hung from the trees and the children can design their own puppets and shows.

We also encourage the children to share any projects they embark on at home and encourage a range of designing and making activities through the year 5/6 creative homework.

EYFS: how the subject is working to the standards set out in the EYFS framework

We encourage the development of skills, knowledge and understanding that help Nursery and Reception children make sense of their world. 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.

We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking, discussion and decision making. These activities take place both indoors and outdoors, and are designed to arouse the children's interest and curiosity.

Throughout the Foundation Stage, activities and opportunities are planned where children can learn through talk, play and their own life experiences.

Children in the Foundation Stage will experience a variety of activities including:

- Choosing and exploring a variety of materials such as fabric, card, paper, wood, boxes etc.
- Learning how to use scissors safely and correctly,
- Exploring a variety of joining techniques such as PVA glue, Pritt stick, masking tape, elastic bands, Sellotape, split pins, paper clips and string to join materials together,
- Taking part in both cooking and non-cook food activities, learning about the importance of food hygiene and tasting and exploring food using all their senses
- Having opportunities to explore creating models using a wide range of construction kits that fit together in a variety of different ways,
- Having opportunities to talk about and explain how they will/have made their model and to discuss what they like/dislike about it,
- Folding and shaping paper in order to create a range of structures.

11. EYFS – information on outdoor play facilities

The children at St Merryn are very fortunate to have many resources readily available to them to encourage and enhance their play and discovery through artistic creativity and design.

Examples of fine motor skill resources:

Building blocks, trains, pebbles, sand, conkers, stacking blocks, abacus, insect hotels, chalks, paints, pencils, pegs, tweezers, magnets, ribbon, marbles run, cars and other toys, magnifying equipment, binoculars

Examples of gross motor skill resources:

Sand pit, spade, rake, brushes, scooters, tyres, balance beams, ride on toys, tuff tray, balls, logs to balance, water pipe/hose, guttering, crates, wheel barrows, mud kitchen, oversized abacus, large construction kits and other toys.

Further to the resources and equipment available, the children also have use of large outdoor spaces that are entirely focussed around moving, playing and discovering. The children have their decking area under canopy where children can get outside in poor weather as well as the outdoor area where there is space for water play and sand play. The EYFS children do also have the chance to go to the outdoor areas to make use of the garden allotment, outdoor classroom, stage and woodland areas.