Design Technology Curriculum

Purpose of Study

Design and Technology involves applying knowledge and skills when designing and making products. The activities undertaken will enable our children to consider the needs of individuals and society within a caring community.
Undertaking design and technology activities in school will give our children opportunities to use a range of materials and processes and allow them to work independently or as part of a team. We would hope that the activities undertaken here at St John Fisher & Thomas More will also reflect the children's local environment and support them in the wider world.

Rationale

Our work reflects the National Curriculum requirements for Design and Technology.

'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 and are innovative. Through the evaluation of past and present design and technology they develop a critical understanding of its impact on daily life in the wider world.'

Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in an iterative process of designing and making. The children work in a range of relevant contexts (for example home, school, leisure, culture, enterprise, industry and the wider environment).

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

We ensure that 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. Children will design and make a range of products. A good quality finish will be expected in all design and activities made appropriate to the age and ability of the child

Children 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.

Implementation

Whilst considering the delivery of the Design Technology curriculum at St John Fisher & Thomas More we:

- Plan using the National Curriculum.
- Enhance the curriculum using progression grids.
- Use subject Progression grids to develop long term planning.
- As teachers use the long term planning to plan units of work and deliver individual lessons.
- Knowledge organisers - Children have access to key knowledge, language and meanings to understand Design Technology and to use these skills across the curriculum

The Design Technology National Curriculum and EYFS is planned for and covered in full within the EYFS, KS1 and KS2 school curriculum. Whilst the EYFS and National Curriculum forms the foundation of our curriculum, we make sure that

children learn additional skills, knowledge and understanding and enhance our curriculum as and when necessary.

All teaching of Design Technology follows the design, make and evaluate cycle.

Each stage of this process is rooted in technical knowledge and the language that supports this. All design processes are rooted in real life, relevant contexts to give meaning to learning. In design technology children may well be asked to solve problems and develop their learning independently. This allows the children to have ownership over their curriculum and lead their own learning in Design Technology.

While conducting the making stage of each project, children are given choice and a range of tools to choose from freely. During the evaluation stage, children are able to evaluate their own products against a set design criteria. Each of the teaching steps (design, make, evaluate) are rooted in technical knowledge and vocabulary. Design Technology is taught to a high standard and to an extent where each stage of development is of equal weight and importance. There is evidence of each of these stages in the children's creative learning journeys. Records of work develop over time to show clear progression across the key stages (in line with progression maps) as the children travel through each year group across school.

In KS1 this looks like:

Design: Design is rooted in real life, relevant contexts to give meaning to the learning and is planned through appropriate formats: drawing, templates, talking and mock-ups.

Make: Children are given a range of tools to choose from for their projects. Children use a wide range of materials and components; textiles, construction equipment and ingredients.

Evaluate: Children are able to evaluate existing products through discussion and are given the opportunity to evaluate their own products against a specific design criteria.

In KS2 this looks like:

Design: Is rooted in real life, relevant contexts to give meaning to the learning. Researched designs are based on functional, appealing products with purpose. Projects are planned by appropriate methods; annotated sketches, cross-sectional diagrams, prototypes, pattern pieces and computer aided design.

Make: Children have the opportunity to select from a wider range of tools than KS1 and use and select a wider range of materials and components; textiles, construction equipment and ingredients.

Evaluate: Evaluations are in comparison to existing products and children evaluate against a set design criteria. Children understand how key events and individuals have helped shape design and technology globally – products are in context!

Impact

At St John Fisher & Thomas More, Design and Technology is taught as a stand-alone subject, in addition to cross-curricular activities planned by each year group. Stand-alone lessons are planned from Reception through to Year 6 in accordance with the school's Design and Technology Scheme of Work. This in turn follows the Design and Technology National Curriculum and EYFS expected standards. Additional cross-curricular lessons and activities are planned by year groups to support children's learning in other subjects, and reinforce key Design and Technology skills.

The delivery of Design and Technology across the school, as set out above, will have the following impact on children.

Children will

- Develop the expertise needed to perform everyday tasks confidently and participate successfully in an increasingly technological world.
- Develop their knowledge, and learn the techniques and skills needed to design and make high-quality prototypes and products.
- Learn how to critique, evaluate and test their ideas and products, as well as the work of others.
- Understand and apply the principles of nutrition and learn how to cook. develop an enjoyment, satisfaction and purpose in designing and making.

Our DT Curriculum is developing to provide well thought out lessons and topics that demonstrate progression.

Assessment of children's learning in Design Technology is an ongoing monitoring of children's understanding, knowledge and skills by the class teacher, throughout lessons. This assessment is then used to inform differentiation, support and challenge required by the children.

Summative assessment is conducted termly by class teachers across each year group of the school to inform the subject leader of progress or skills and knowledge still to be embedded. This is recorded on our school assessment trackers. Summative Assessments are analysed on a termly basis using the school's own band tracker 1-5 to inform and address any trends or gaps in attainment. This system highlights those children that are working below, at age expected and above the National

Average. From this, teachers are able to use this data to plan future lessons; ensuring children are supported and challenged appropriately.

Design Technology is also monitored by the subject leader throughout the year, looking at outcomes and pupil interviews to discuss their learning and understanding and establishing the impact of the teaching taking place.
EYFS pupils' progress and attainment is tracked using the Tapestry tracker system, telling us whether each individual child is below expected, at expected or above expected attainment for their age.

In addition, we measure the impact of our curriculum through the following methods:

- Reflection on standards achieved against the planned outcomes
- Termly teacher assessments against National Curriculum and EYFS standards.
- Pupil discussions about their learning, which includes discussion of their thoughts, ideas, processing and evaluations of work (in and out of class).
- A celebration of learning for each term which demonstrates progression across the school (DT displays updated termly).