

Design and Technology at The Mill Academy



Intent

At The Mill Academy, we provide a design and technology curriculum which allows children to exercise their creativity, imagination and build resilience through the designing and making process, to solve real problems within a variety of contexts. The children create a range of project that are underpinned by the key drivers of design and technology which are structure, mechanisms, electrical, textiles and food. This allows children to learn and use a range of different skills and knowledge. The children are taught to combine their designing and making skills with knowledge and understanding in order to design and make a product. Skills are taught progressively to ensure that all children are able to learn and practice in order to develop as they move through the school. Specific vocabulary in each area will provide challenge for the children. Evaluation is an integral part of the design process and allows children to adapt and improve their product, and are encouraged to become innovators and risk takers. Where possible, D&T allows children to apply the knowledge and skills learned in other subjects, particularly Maths, Science and Art. Children's interests are captured through theme learning, ensuring that links are made in a cross curricular way, giving children motivation and meaning for their learning.

Implementation

Using creativity and imagination, pupils at The Mill Academy will 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 will learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, pupils will develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education – encompassing a progressive range of skills and knowledge – is vital.

Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in the process of designing and making.

When designing and making, the children are taught to:

Design

- 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

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. 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

Through our Design and Technology Curriculum, 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. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Design & technology is monitored by the subject leader throughout the year in the form of book monitoring, photos and examples of work, lesson observations and pupil voice to discuss their learning and establish what children know and can remember once a unit of work has been completed.

We assess the progress that children make in Design and Technology using the progression strands detailed in the National Curriculum and from the progression documents. Teachers make their judgments based on the skills that children are able to demonstrate for each part of the design process and the summative statements for each topic.

Strategies to support children with SEN

At The Mill Academy, in Design and Technology, we use a number of evidence-based strategies to support children with SEN. Strategies include:

Scaffolding

Support for SEN children with learning vocabulary; this may include flash cards.

Support in writing sentences eg, missing words rather than writing the whole sentence.

All scaffolding follows a 'I do, you do, we do' approach.

Explicit Instruction

Pupils may be supported in their thought process in Design and Technology.

Pupils will be given specific opportunities by adults to practise specific skills that are barriers to learning. They will – where necessary – use adapted equipment in order to support them to meet the learning intention.

Visual aids and concrete examples will be used to support learning.

Cognitive and Metacognitive Strategies

Tasks may be 'chunked' into smaller steps.

Vocabulary prompts may be used to support sentence work.

Depending on ability, children with SEN may be asked to evaluate their own progress and discuss what they can do to move their learning forward.

Flexible Grouping/Fading

Temporary groups may be established to support learning a particular concept.

Pre-teaching and support with new vocabulary may be used.

Use of technology

Tasks set may include useful apps/websites to move learning forward.

Speech generating apps may be used for recording.

Books for Design Technology

<https://www.waterstones.com/category/childrens-teenage/education/technology/design-and-technology>