



# Design and Technology

## SUBJECT POLICY

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## **VISION**

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. At Marton Manor Primary School children are taught to select and use appropriate tools safely and effectively to make a product. In all areas of Design and Technology the children are encouraged to consider the effectiveness of their designs and requirements of the product. Every child will have the opportunity to learn and extend their understanding, experience and application in the use of technology, including I.C.T, in as wide a variety of situations as possible.

## **INTENT**

### **Aims of the Design and Technology Curriculum:**

- To use creativity and innovation to design purposeful and appealing products for themselves and for others that solve real and relevant problems within a variety of contexts.
- To use a range of tools confidently and skilfully, selecting on a fit for purpose basis.
- To articulate their ideas in a variety of formats.
- To evaluate their work against a design criteria, considering their own and others' views in how to modify and improve work whilst demonstrating resilience and respect.
- To develop a critical understanding of the impact of design on our daily lives through a study inventors, designers, engineers and chefs who have developed ground breaking products.
- To have fun, be challenged, work with others and learn in a practical context

## **IMPLEMENTATION**

### **TEACHING**

In Key Stage 1

Pupils should be 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 [for example, 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 [for example, levers, sliders, wheels and axles], in their products.

### In Key stage 2

Pupils should be 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 [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 [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

### Food and Nutrition

#### Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

#### Key stage 2

- 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.

## Design and Technology is taught

The curriculum is written so pupils cover 3 blocks of learning per year, one each term. All year groups cover one Food and Nutrition topic per year. Textiles is covered once in KS1, lower KS2 and upper KS2. Where appropriate, DT lessons can be blocked into full or half days to help with practical issues such as resources, tools, classroom organisation and access to oven/ hob.

We have selected the 'Kapow' scheme of learning; this was carefully chosen for its sequential approach, careful thought to supporting children's progression in knowledge and skills and teacher knowledge support. All lessons are designed around the learning questions set out in the curriculum document and follow the school's lesson design format of retrieval, vocabulary, explain and model, check understanding, apply learning and review learning.

## RESOURCES

A range of resources, materials and tools are available for the teaching of Design and Technology are stored in the DT cupboard. Resources for Cooking and Nutrition are stored in the SEN hub kitchen. All consumable and non-consumable materials are ordered in accordance with the activities and tasks outlined within the curriculum. The DT Lead will audit the materials once a year in July. Food items are ordered in advance, using an online grocery delivery service. This is the responsibility of the individual teacher.

## RECORDING AND EVIDENCING LEARNING

The majority of pupils' learning will be evidenced in the recordings of their design ideas, final products and evaluations. In EYFS and KS1, some of this will be discussion based. Final products will be photographed and displayed in the children's books so the learning journey can be viewed as a whole.

Assessment is carried out in line with the school's Assessment Policy and is based on the principles of Assessment for Learning. We assess how well pupils embed concepts in their long-term memory and apply them fluently; developing their understanding. Pupils are assessed against the expected targets, using the terms working towards, expected and exceeding standard. KS1 and KS2 lessons are to be accompanied by a 'Can I ...?' statement. Teachers will assess outcomes of pupils by annotating these at the end of lessons.

## MEETING THE NEEDS OF ALL PUPILS

At Marton Manor all children have access to Design and Technology lessons and activities regardless of age, sex or ability. Teaching approaches provide equality of opportunity by making sure the work is suitable for all, considering religious and cultural beliefs and enabling those with disabilities to have full participation.

## **IMPACT**

After successful implementation of the Design and Technology curriculum children will:

- Understand the functional and aesthetic properties of a range of materials and resources.
- Understand how to use and combine tools to carry out different processes for shaping, decorating, and manufacturing products.
- Build and apply a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes, including models, prototypes and products to fulfil the needs of users and scenarios.
- Understand and apply the principles of healthy eating, diets, and recipes, including key processes, food groups and cooking equipment.
- Have an appreciation for key individuals, inventions, and events in history and of today that impact our world.
- Recognise where our decisions can impact the wider world in terms of community, social and environmental issues.
- Self-evaluate and reflect on learning at different stages and identify areas to improve.
- Meet the end of key stage expectations outlined in the National curriculum for Design and technology.

## **QUALITY ASSURANCE**

The Subject Leader, working in conjunction with the Headteacher and the Local Governing Body, is responsible for assuring the quality of the Design and Technology across school. This is done in the following ways:

- Assessment data analysis
- Learning walks
- Work scrutiny
- Pupil interviews