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GPS

Gawsworth Primary School

Learning Together to Achieve Our Best

Policy devised by H Jepson – Design & Technology Coordinator Oct 2019

# Design and Technology Curriculum Intent

## Design and Technology at Gawsworth Primary School

**Intent**

Design and Technology is an inspiring, rigorous and practical subject that encourages children to learn to think and intervene creatively to solve problems, both as individuals and as members of a team.
At Gawsworth Primary School, we encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts. We also aim to make links to designs and designers throughout history, providing opportunities for children to critically reflect upon and evaluate their designs.
We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. This gives the learning purpose and relevance to the children.

**Implementation**
Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in an interactive process of designing and making:
Design – use research and develop design criteria to design for a purpose and communicate their ideas through a range of mediums.
Make – use a wider range of tools and equipment with accuracy and use a wider range of materials and components according to their qualities.
Evaluate – evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

Through this process, the aim is to develop the pupils' technical knowledge and vocabulary in relation to structural design, mechanical and electrical systems, the integration of technology and food production and nutrition. In addition, the school aims for these tasks to be completed collaboratively and therefore links directly with the school values of TEAMWORK.

**Impact**
We use a range of Key Performance Indicators and quizzes to ensure pupils develop the following:
- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently.
- 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.
- Develop a critical understanding of its impact on daily life and the wider world.

# Gawsworth Primary School
# Design Technology Policy

**What is 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.

**Why teach Design and Technology?**
Design and Technology gives children the opportunity to develop skill, knowledge and understanding of designing and making functional products. We feel it is vital to nurture creativity and innovation through design by exploring the designed and made world in which we all live and work.

Children should be taught Design and Technology so that they:

- acquire a broad range of subject knowledge
- draw on disciplines such as mathematics, science, engineering, computing and art
- learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens
- develop an understanding of how past and present design and technology impacts their daily life and the wider world
- understand that design and technology can make a contribution to the creativity, culture, wealth and well-being of the nation

**Aims**
As a result of learning about Design and Technology pupils should be able to:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and 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
- critique, evaluate and test their ideas and products and the work of others.
- provide children with the opportunity to explore food and cooking techniques along with healthy eating and environmental issues within food production.
- develop design and making skills, knowledge and understanding to the best of each child's ability; using and selecting a range of tool, materials and components.
- become creative problem solvers as individuals and members of a team.
- be able to use computing in conjunction with the Designing and Making process.
- develop an ability to criticise constructively and evaluate their own products and those of others.

To achieve our aims, we ensure that the planned activities our children undertake are challenging, motivating, relevant and enjoyable. We give children confidence in their work by providing continual support and encouragement. The children are extended in their work in a way which develops their expertise. The children are provided with the very best resources possible, while constantly reviewing this provision in the light of curriculum changes, development and budget constraints.

**Foundation Stage:**
Design and Technology in the Foundation Stage comes under the heading of Expressive Arts & Design.

**In the Foundation Stage we provide opportunities for children to:**

- develop a curiosity and interest in the world through investigating, talking and asking questions about familiar products
- develop confidence and enthusiasm through frequent exploration
- develop construction skills to build and construct objects, and provide activities for exploring joining, assembling and shaping materials to make products
- extend their vocabulary through talking about and explaining their designing and making activities

**Key Stage 1 and 2:**
All maintained primary schools in England are required to follow the National Curriculum, which includes Design and Technology as a compulsory subject at Key Stages 1 and 2. A new statutory programme of study was introduced in September 2014. Below is what the programmes of study state should be taught at KS1 and KS2:

**Subject content**
**Key stage 1**
Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative[1] process of designing and making. They should work in a range of relevant contexts (for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment).

When designing and making, 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.

**Key stage 2**
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. They should work in a range of relevant contexts (for example, the home, school, leisure, culture, enterprise, industry and the wider environment).

When designing and making, 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.

**Cooking and nutrition**

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

**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.

**School curriculum principles**

When planning a unit of work, the characteristics of genuine Design and Technology experience will be followed:

- **User** - Pupils should consider who their projects are for.
- **Purpose** - Pupils should decide which tasks their products will perform.
- **Functionality** - Pupils should think about how their products should work..
- **Design decisions** - Pupils should have opportunities to make informed choices
- **Innovation** - Pupils should have scope to be original with their thinking.
- **Authenticity** - Pupils should design and make products that are real, believable and evaluated through use.

**Curriculum and school organisation**

At Gawsworth Primary School, we use a skills based cross-curricular approach to teaching and learning using objectives taken from the National Curriculum. We teach DT skills discretely and through our Curriculum themes, ensuring all children access all areas of the Design Technology Curriculum.

In Early Years Foundation Stage, Design and Technology is an integral part of topic work, relating aspects of the children's work to the objectives set out in the Early Learning Goals, and Expressive Arts and Design. To facilitate our objectives different teaching styles and methods are used as appropriate. These include:

- Direct teaching of skills and opportunities to apply these skills.
- Individual, group and class work.
- Teacher taking on the role as provider and facilitator, to directly teach skills and to act as a consultant to the children.

**Special Educational Needs**
Most tasks will be differentiated by outcome or by varying the criteria for success but children with special needs can also be catered for by receiving more adult help whether for support with a basic skill or by one to one supervision for very able children with an advanced skill, e.g. using a glue gun.

**Equal Opportunities**
All children receive full provision regardless of gender, race etc.

**Personal, social and health education (PSHE)and citizenship**
Design and technology contributes to the teaching of personal, social and health education and citizenship. We encourage the 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 be responsible and to set targets to meet deadlines, and they also learn through their understanding of personal hygiene, how to prevent disease from spreading when working with food.

**Spiritual, moral, social and cultural development**
The teaching of design and technology offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons. Our groupings allow children to work together, and give them the chance to discuss their ideas and feelings about their own work and the work of others. Through their collaborative and co-operative work across a range of activities and experiences in design and technology, the children develop respect for the abilities of other children and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety and for that of others. They develop their cultural awareness and understanding, and they learn to appreciate the value of differences and similarities. A variety of experiences teaches them to appreciate that all people are equally important, and that the needs of individuals are not the same as the needs of groups.

**Assessment of Design and Technology**
Here at Gawsworth Primary School we use the Design and Technology Progression Framework to assess attainment and progress in this subject. This document has been produced by a National Curriculum Expert Group for D&T and provides an age-related interpretation of the requirements as set out in the statutory programme of study.

Assessing a child's performance is a continuous process carried out over the full seven years of Primary school and our assessing methods include the following as appropriate:-

1. Looking at a child's recorded work i.e. model, photographs, written work.

2. Individual discussion.

3. Listening to the children's ideas as they discuss between themselves.

4. Group discussions in both planning and reporting back sessions.

5. Observing the children's skills in Design and Technology.

6. Record the progress that children make by assessing the children's work against the learning objectives for their lessons. At the end of a unit of work, teachers make a judgement against the Key Learning Skills.

**Recording**

It is essential that the type of recording be matched to the type of Design and Technology activity as well as to the needs and abilities of the child. A variety of recording methods are therefore used. These include pictures, structured worksheets, sketches, diagrams, flow charts, model making, written explanations, photographs, school displays and the occasional video recording.

**Resources**

Our school has a wide range of resources to support the teaching of design and technology across the school. Classrooms have a range of basic resources, with the more specialised equipment being kept in the design and technology store.

**Safety in Design and Technology**

The safety of the children is the responsibility of the class teacher. The children are made aware of the safe use and correct procedure involved when using tools and equipment in a learning environment and how to follow proper procedures for food safety and hygiene. The children are made aware of the need to be careful and to understand that their actions can affect others.

The children build up a range of skills when using equipment to reduce unnecessary risk. Rotary cutters are to be used with a safety ruler. Craft knives are used only by 5/6 under direct supervision of an adult. Glue guns are used (low temperature) under supervision. All staff, including helpers, are made aware of food safety procedures when working with food to minimise any risks. The children wear protective clothing if necessary.

**Monitoring and review**

The monitoring of the standards of children's work and of the quality of teaching in design and technology is the responsibility of the design and technology subject leader. The work of the subject leader also involves supporting colleagues in the teaching of design and technology, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The design and technology subject leader has specially-allocated, regular management time in order to review evidence of the children's work and undertake lesson observations of design and technology teaching across the school.