

# Design and Technology Strategy

LEIGHTON PRIMARY SCHOOL

SUBJECT LEAD	Amy Hagan and Tracy Wells
ADOPTED BY GOVERNORS	SUMMER 2023
REVIEW TIMETABLE	Annually
RENEWAL DATE	SPRING TERM 2025

## **Subject Rationale and Aims (Intent)**

At Leighton Primary School, we believe that 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, becoming resourceful, innovative, enterprising and capable citizens.

### **Aims**

- All pupils 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.
- 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.

### **Implementation**

#### **Early Years and Foundation Stage**

The essential building blocks of children's design and technology capability are established in the Early Years classroom. 'Designing and Making' is identified as a strand within Knowledge and Understanding of the World, Physical Development and Expressive Art and Design.

In EYFS, we develop children's artistic and cultural awareness to support their imagination and creativity. It is important that children have regular opportunities to engage with the arts and design, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.

#### **Key Stage 1**

##### **Curriculum Subject Content**

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, e.g. 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 e.g 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, e.g. levers, sliders, wheels and axles in their products

## **Key Stage 2**

### **Curriculum Subject Content**

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, e.g. the home, school, leisure, 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 e.g cutting, shaping, joining and finishing accurately.
- Select from and use a wide 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 knowledge of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products e.g. gears, pulleys, cams, levers and linkages.
- Understand and use electrical systems in their products e.g. series circuits, incorporating switches, bulbs, buzzers and motors
- Apply their knowledge of computing to program, monitor and control their products.

## **Cooking and Nutrition**

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 savory dishes using a range of cooking techniques.
- Understand seasonality and know where and how a variety of ingredients are grown, reared and processed.

### **Values and attitudes**

Children should:

- work both independently and with others, listening to others' ideas and treating these with respect.
- can be creative, flexible and show perseverance.
- critically evaluate existing products, their own work and that of others.
- develop a respect for the environment and for their own health and safety and that of others.
- recognise the strengths and limitations of a range of technologies and appreciate which are appropriate for particular situations.
- develop their cultural awareness and understanding and appreciate the value of differences and similarities.
- develop an understanding that all people are equal regardless of age, race, gender, or ability and that there needs to be alternative solutions to meet the needs of individuals and groups of people.
- find enjoyment, satisfaction and purpose through designing and making.
- apply value judgements of an aesthetic, economic, environmental, moral, scientific, and technical nature.

### **Assessment in DT**

Assessment is carried out in accordance with our assessment policy. On-going teacher assessment ensures that knowledge and skills are developed and progress made in the area of DT. At the end of each unit, pupils from Y1-Y6 are assessed against criteria in the progression of knowledge and skills document, as well as the end points identified on the curriculum map.

Pupils are assessed against the criteria of the curriculum using a 4 point scale. Those achieving above age-related expectations are assessed as a 4; those meeting age-related expectations as a 3; those approaching age-related expectations as a 2; and those well below age-related expectations as a 1. Formal assessments are recorded termly by teachers and reported to parents at the end of each year.

The class teacher also evaluates each pupil by....

At Leighton, displaying pupils' work also plays a positive part in the appraisal of DT in the school; this gives it value and reminds pupils what has been achieved and enables them to share and talk about their work with others. As a form of real assessment, this gives the class teacher opportunities to focus on the different ways pupils may have responded to the teaching of the unit. Thus, the public display of DT of each year group demonstrates the sequence and development of what has been learnt across the school.