



## **Sandfield Close Primary School – Design & Technology**

### **Vision Statement:**

At Sandfield Close, our teaching of Design and Technology provides children with the skills to develop their creativity and imagination.

We follow a 'design, make, evaluate' approach to teaching Design and Technology where technical skills and knowledge are acquired and built upon.

Purposeful activities provide children with the opportunity to apply their problem-solving skills in order to work through the challenges that they face.

Design and Technology is taught in conjunction with other areas of the curriculum so that children are able to explore subjects in more depth.

### **National Curriculum Aims:**

The national curriculum for design & technology aims to ensure that 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.

## Curriculum Overview:

|               | <b>Unit 1</b>                                  | <b>Unit 2</b>                        | <b>Unit 3</b>                            | <b>Unit 4</b>                            | <b>Unit 5</b>                            |
|---------------|--|--------------------------------------|--|--|--|
| <b>Year 1</b> | Structures: Constructing Windmills             | Mechanisms: Moving Storybook         | Mechanisms: Wheels and Axles             | Textiles: Puppets                        | Cooking and Nutrition: Smoothies         |
| <b>Year 2</b> | Mechanisms: Fairground Wheel                   | Cooking and Nutrition: Balanced Diet | Structures: Baby Bear's Chair            | Textiles: Pouches                        | Mechanisms: Moving Monster               |
| <b>Year 3</b> | Textiles: Cross Stitch and Appliqué - Cushions | Structures: Constructing a Castle    | Cooking and Nutrition: Eating Seasonally | Digital World: Wearable Technology       | Mechanical System: Pneumatic Toys        |
| <b>Year 4</b> | Mechanical Systems: Making a Slingshot Car     | Textiles: Fastenings                 | Structures: Pavilions                    | Cooking and Nutrition: Adapting a Recipe | Electrical Systems: Torches              |
| <b>Year 5</b> | Cooking and Nutrition: Developing a Recipe     | Electrical Systems: Doodlers         | Mechanical systems: Making a Pop-Up Book | Digital World: Monitoring Devices        | Structures: Bridges                      |
| <b>Year 6</b> | Structure: Playgrounds                         | Mechanical Systems: Automata Toys    | Electrical Systems: Steady Hand Game     | Digital World: Navigating the World      | Cooking and Nutrition: Come Dine with Me |

## Curriculum 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 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.

