

## Design and Technology Long Term Plan

| Year Group: 1 | Autumn                                      | Spring  | Summer                                    |
|---------------|---|---|---|
| Reception     |   |   |   |
| Year 1        | Cooking and nutrition: Fruit and vegetables | Structures: Constructing a windmill             | Mechanisms: Wheels and axles              |
| Year 2        | Mechanisms - Making a Monster               | Cooking and Nutrition - A Balanced Diet         | Textiles - Pouches                        |
| Year 3        | Electrical Systems – Electric Posters       | Structures - Constructing a Castle              | Textiles - Egyptian Collars               |
| Year 4        | Textiles – Fastening                        | Digital World – Mindful moments timer           | Cooking and Nutrition – Adapting a recipe |
| Year 5        | Mechanical Systems – Pop-up book            | Cooking and Nutrition - What could be healthier | Structure - Bridges                       |
| Year 6        | Cooking and Nutrition – Come dine with me   | Textiles - Waistcoats                           | Structures - Playgrounds                  |

### 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

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### **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.

### **Cooking and nutrition**

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

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### 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]



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- 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**

- 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