



## **Overstone Combined School** **Design and Technology Policy**

### **Rationale**

Design and Technology prepares children to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages the children to make positive changes to their quality of life. The subject encourages children to become autonomous and creative problem-solvers, both as individuals and as part of a team. Design and Technology enables pupils to become familiar with existing products and techniques, identify needs and opportunities and respond by developing ideas. The subject allows them to make innovative products and systems, evaluating their effectiveness and the process they have worked through to create these. Through the study of design and technology, they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as of functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Design and technology helps all children to become discriminating and informed consumers and potential innovators.

### **Aims**

The core curriculum for Design and 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 principles of nutrition and learn how to cook.

### **Teaching Objective**

National Curriculum 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 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].

Using a familiar and revisited process, 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**

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, using a familiar and revisited process, 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 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.

#### **Key stage 1**

Pupils should be taught to :-

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

#### **Key stage 2**

Pupils should be taught to :-



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.

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- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

### **Design and Technology curriculum planning:**

The school uses a variety of teaching and learning styles in design and technology lessons in order to cover the areas of learning outlined in the National Curriculum. The principle aim is to develop children's knowledge, skills and understanding in design and technology. We plan the activities in Design and Technology so that they build on the children's prior learning. Teachers ensure that the children apply their knowledge and understanding when developing ideas, planning and making products, and then evaluating them. When appropriate we give the children the opportunity both to work on their own and to collaborate with others, listening to other children's ideas and treating these with respect. They have the opportunity to use a wide range of materials and resources, including ICT/Computing.

To support learning and skill development within the subject, the teaching and learning in Design and Technology will be related to topic areas being covered during the term, through this links made between learning is strengthened.

### **Differentiation and Additional Educational Needs**

In all classes, there are children of differing ability so Design and Technology will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEND the task will be adjusted or pupils may be given extra support through peer supported or adult supported work. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence.

### **Equality of Opportunity**

All children have equal access to the Design and Technology curriculum and its associated practical activities. The Leadership Team, Class Teachers and TAs at Overstone Combined are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

### **Health and safety**

Pupils are taught to use materials, tools and techniques safely and in accordance with the school's health and safety policy. Teachers are responsible for ensuring that pupils have sufficient and suitable space for safe practical work and that tools and materials are suitable for the activity being undertaken. Staff will check equipment regularly and report any damage, taking defective equipment out of action. They are to also identify the safety hazards and risks, and beware of them at all times during practical activities.



### **Assessment for Learning, recording and reporting**

Throughout the school teachers will assess whether children are working at/above or below the expected level for their age based on their understanding and application of the content of the National Curriculum 2014. Teachers will use Target Tracker statements to record the progress for individual pupils at the end of a sequence of lessons or at the end of a term. Progress and attainment is reported to parents through parents' evenings and end of year reports.

### **Monitoring and Evaluation**

The Design and Technology co-ordinator, together with the Senior Leadership Team is responsible for monitoring and evaluation. Lesson observations take place to monitor quality of teaching. Discussions take place between the co-ordinator and the rest of the staff in whole staff meetings and recommendations for developing the subject are shared as appropriate. The coordinator attends courses and advice is sought if the need arises. The Design and Technology co-ordinator assesses the effectiveness of the Policy and Scheme of Work, adapting, improving and advising as appropriate to maintain a high quality of teaching and effective learning.

### **Resources**

The Design and Technology co-ordinator is responsible for ordering all resources and monitoring their use. However, staff are responsible for informing the co-ordinator when resources run low or required for upcoming lessons.

Design and Technology resources are stored in the locked cupboard, within the Key Stage 2 area. All staff are responsible for checking equipment regularly and reporting any damage, taking defective equipment out of action.