



# Buckden CE Primary Design Technology Subject Guidance

It is our intention to help children develop skills and knowledge that will enable them to be effective users within Design and Technology.

*“The nature of design and technology is such that it should provide opportunities for pupils to engage in activities that are challenging, relevant and motivating. This should give pupils enjoyment, satisfaction and a sense of purpose.” (DATA Primary Guidance, p4).*

*Design and Technology intends to educate children for sustainability in a progressive, student-centred way. We are focused on preparing young people to thrive in a changing world. The curriculum content is delivered aligned to the Sustainable Development Goals (SDG's) to provide the opportunity to learn within a relevant context. We aim to develop intellectual knowledge, skills, understanding and curiosity by understanding the significance of the past, the world and their role in changing the future. The curriculum content is mapped to relevant year groups to ensure there is progression in design, making and evaluating skills, as well as technical knowledge through a design brief that is linked to our SDG's which aims to prepare children for the changes that they may be faced with so that they may be ready to solve problems in their future.*

## **Purpose of this statement:**

- ◆ To establish an entitlement for all pupils in the subject of Design and Technology;
- ◆ To establish expectations for teachers and pupils
- ◆ To promote continuity and coherence across the school;
- ◆ To promote a shared understanding of Design and Technology, within the community;
- ◆ To explain how Design and Technology is taught in Buckden CE School
- ◆ To give further guidance about Design and Technology.

## **Entitlement:**

All pupils, appropriate to their ability, have the entitlement to:

- ◆ Develop imaginative thinking and talk about what they like and dislike when designing and making.
- ◆ Talk about and explain how things work, and to draw and model their ideas.
- ◆ Encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures.
- ◆ Explore attitudes towards the made world and how we live and work within it.
- ◆ Develop an understanding of technological processes, products, and their manufacture, and their contribution to our society.
- ◆ Foster enjoyment, satisfaction and purpose in designing and making.
- ◆ Understand and apply the principles of a healthy diet.
- ◆ Understand where food comes from and the issues of seasonality.

## **Time Allocation**

All classes have access to Design and Technology resources so that it is possible for all pupils to enjoy a wide range of learning experiences using a variety of mediums. Design and Technology is not taught in isolation, although it can sometimes require its own creative approaches, skill set and techniques throughout the design process. Design and Technology is taught through the Sustainable Development Goals, and wherever possible the design objective is linked to the goal and gives children the opportunities to apply learning from across the curriculum to give their work practical context and apply skills to “real world” problem solving. Within this “real world” approach, opportunities are available to promote children’s spiritual, moral, social and cultural development in Design and Technology.



## **Teaching and Learning**

The National Curriculum forms the outline of teaching and learning in Design and Technology for KS1 and KS2, with the Foundation Stage Profile covering the necessary criteria for Reception. Design and Technology is incorporated into the Sustainable Development Goals that link with a variety of areas within the curriculum. Lessons should allow the children to be taught specific skills and gain confidence which in turn allows them to put these skills into practice during a final piece.

The main areas covered, in Design and Technology, are:

Electrical systems

Food

Mechanisms

Structures

Textiles

Computer Aided Design (Upper Key Stage 2)

Throughout all areas of teaching pupils should be taught the skills that they will need to apply in order to create these final pieces; design, make and evaluate.

Through the teaching of our curriculum pupils will be able to:

- ◆ Generate ideas through discussion and experimentation
- ◆ Extend knowledge and understanding of a wide range of materials, including construction kits, textiles, food, wood, plastic, and reclaimed/junk materials.
- ◆ Work within groups and as individuals.
- ◆ Make use of drawings and models to communicate their ideas.
- ◆ Evaluate their work and identify strengths and weaknesses in a positive way.
- ◆ Experiment with simple components, mechanisms and structures.
- ◆ Learn about health and safety aspects when working with a variety of materials and tools.
- ◆ Consider risk to themselves and to others and build up a knowledge and understanding of the dangers inherent in certain products and tools.
- ◆ Experience design technology through off-site visits, where practicable, in order to see technology used in a real environment.

Use of I.C.T Information and communication technology enhances the teaching of design and technology, wherever appropriate, in all key stages. Children use software to enhance their skills in designing and making things. The children also use ICT to collect information and to present their designs through a range of design and presentation software. Along with ICT, Design and Technology can also be linked with English, Maths, Art and Science.

## **Planning, Assessment and Marking**

These are carried out in line with the School's Planning, Assessment and Quality Marking and Feedback policies.

## **Resources**

We have a range of resources for use within Design and Technology lessons. Design and Technology resources are mainly kept in the cupboards in the corridor between KS1 and KS2. Most of the primary resources (material, construction kits, sewing equipment) are kept here. It is important to ensure that resources are labelled, tidy and ready for use. In addition to these resources there are also 2 transportable trolleys containing equipment such as drills, saws etc which can be moved into the classroom when required. These trolleys are both fully stocked and should be returned after use, having been refilled and ready for the next user. Cooking equipment is stored in the dedicated cooking area in Mrs Tarpey's classroom, which also contains a fixed cooker. If ICT equipment is required, then prior booking of the laptop trolleys is required. Any specific software should already be loaded onto each computer, however please see co-ordinator if you require anything new.

## **Health and safety**

Health and safety is important, particularly when working with tools, equipment and resources. Children should be given suitable instruction on the operation of all equipment before being allowed to work with it. Children need to be taught how to

- ◆ use tools and equipment correctly
- ◆ recognise hazards and risk control

Children should be;

- ◆ strictly supervised in their use of equipment at all times.
- ◆ taught to respect the equipment they are using and to keep it stored safely while not in use.
- ◆ taught to recognise and consider hazards and risks and to take action to control these risks, having followed simple instructions.



- ◆ Glue Guns - Key Stage 2 children should use low temperature glue guns under supervision in a designated work area, wearing safety goggles.
- ◆ Craft Knives - Children may use cutting equipment under supervision, using a cutting mat and wearing safety goggles.
- ◆ Sawing - Bench hooks and clamps must be used when sawing any material.
- ◆ Safety goggles must be worn and any loose items of clothing/hair must be tucked in.
- ◆ Risk assessments are carried out by the class teacher for activities where a risk assessment is deemed appropriate.

### **Food Hygiene**

- ◆ Pupils and staff will take care to undertake appropriate hand washing and other hygiene related activities prior to preparing food.
- ◆ Pupils and staff working with food must wear aprons designated for cooking.
- ◆ Painting equipment must not be washed up or used in the sink in the kitchen areas.
- ◆ All jewellery should be removed and hair tied back.

### **EYFS**

The different aspects of the arts and design are encompassed within Creative Development in the Foundation Stage Curriculum, however elements can also be found in other areas of learning (Understanding the world, Physical development, Literacy and Mathematics). This curriculum lends itself to an integrated approach to learning. Reception teachers plan quality learning opportunities for art and design using the Early Years Curriculum. There is an emphasis on independence and self-initiated learning, which enables foundation stage children to freely explore resources and pursue their own creative interests and talents in addition to the planned learning experiences. The environment is designed so children have free access to a full range of resources in order to achieve this.

### **Inclusion**

Lessons and activities are planned to include all children by using a range of approaches. This includes: questioning, use of equipment, and mixed ability grouping to enable children to offer peer support. Lessons are planned to facilitate the identification of children at either end of the ability range within each class. The Disability Discrimination Act (2006) requires schools to promote equality of opportunity for all pupils. As a school we have done this through improving the learning environment to increase the extent to which disabled pupils can participate and take advantage of the design and technology curriculum both inside and outside school.

### **Dyslexia Friendly School**

We recognise that some pupils, despite intellectual and other abilities, have unexpected difficulty learning to read and/or to spell and write fluently. These pupils may be described as having dyslexia.

We recognise that some of these pupils have special educational needs; that these needs have to be met to the best of our ability and resources; and that these pupils have the same right of access to the Design and Technology curriculum and to all the activities of the school as all other pupils.

### **British Values**

Though Design and Technology pupils learn not only to be able to develop higher order visual literacy skills but to encompass all areas of the curriculum from numeracy and literacy, through to social and cultural awareness. It is not just about if you can draw or make but about understanding what you see, how you communicate your ideas and develop your logical processes by thinking outside the box in a creative and imaginative way. We encourage children to have a sense of enjoyment and fascination in learning about the world around them and participate actively in designing, making, evaluating and cooking activities. Through collaborative working they are taught to develop tolerance and understanding of other's viewpoints.

By giving our children a range of resources, artefacts, photos and equipment they are able to understand and appreciate the history, heritage and wide ranging cultural influences that underpin our individual and shared experience of life in modern Britain.

By connecting our British Values through the teaching of Design and Technology, we explore issues that affect us all in our lives and this helps inform decisions that will shape our future. An example is the right to have a different opinion and the need to respect the views and opinions of others when discussing different designs and creations.

**In Year 1** children learn to use basic construction skills using a range of materials as this is a familiar concept, where children can use their understanding to build prototypes of classroom tables, linking this to their learning about quality education, and to make cars using wheels and axles, linked with their learning about industry, innovation and infrastructure. This builds on the children's learning from EYFS where they create their own models using reclaimed materials. Children then connect their learning in science



with food technology where they learn about different fruits and vegetables, using them to create simple dishes and learning how to clean and chop the food safely.

**In Year 2** the children begin by learning about simple mechanics to make a moving picture using sliders and levers. The inspiration for their design comes from their research work about Grafham Water, part of our local community. Then they further develop their understanding from Year 1 by connecting their learning of construction skills to make a model of a bug house out of wood, linking with their science learning about minibeasts. This enables the children to further explore how materials are joined together in order to make a finished product.

**In Year 3** the children reconnect with their learning about mechanisms from Year 1 where they learn about wheels and axles, as well as incorporating new learning about electrical circuits by building cars. Within food and nutrition, children learn about Fairtrade products and incorporate their knowledge of this into their design and creation of a cereal bar.

**In Year 4**, the curriculum covers textiles which connects with the children's learning of history of decent work and economic growth, with values underpinning the intended audience. Their understanding of mechanisms from Year 2 is further developed as the children learn about different pulley systems by designing a rain gauge using levers and linkages. In food technology, the children use local and seasonal produce to design and make a fajita recipe.

**In Year 5**, learning about textiles connects with the children's learning from Years 1 and 3 through their topic of responsible production and consumption by designing and making a tote bag using recycled clothes/materials. Their learning about structures is further developed through looking at sustainable materials to make shell structures when designing a building. In food technology, the children use local and seasonal produce and ingredients to design and make their own bread recipe.

**In Year 6**, the children connect all their previous learning in order to work independently to apply their understanding of mechanisms, electronics and construction, as well as textiles. The children further develop their knowledge and understanding of sustainability within food technology through designing and making a menu using perishable foodbank ingredients.

#### **Review**

This guidance statement will be reviewed regularly in order to reflect current trends and practice.