

# Christ the King Catholic Voluntary Academy

## Design and Technology Policy



Reviewed in Autumn Term 2022

### **Aims and Intent**

Design and technology offers children a chance to use creative thinking and activity within a defined purpose and tangible outcome. At Christ the King we follow the KAPOW scheme of work and implement this through carefully planned DT projects each half term. The aim of the scheme of work is to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through ideation, creation and evaluation. We want pupils to develop the confidence to take risks, through drafting design concepts, modelling and testing and to be reflective learners who evaluate their work and the work of others. Through KAPOW's scheme of work we aim to build an awareness of the impact of product design and technology on our lives and encourage pupils to be resourceful, enterprising citizens who will have the skills to contribute to future design advancements.

Our aims in the teaching of design and technology are to allow pupils to:

- Develop design and making skills
- Develop knowledge and understanding
- Use a wide range of tools and materials
- Learn about health and safety and protective measures
- Work individually and within a group in a variety of contexts
- Develop the capability to create products of a high standard through skill and understanding
- Promote creativity and innovation
- Explore the man-made world and encourage discussion of how we live and work within it
- Develop an interest in and understanding of technological processes and the role of manufacturing in society
- Learn the principles of nutrition, healthy eating and how to cook

### **EYFS**

Within the Early Years Foundation Stage, both in our Nursery and Reception Class, Design and Technology is covered under the following areas of learning; Expressive Arts and Design,

Physical Development, Communication and Language and Personal, Social and Emotional Development. In the EYFS our intent is to support children to develop the foundation skills they need to progress within Design and Technology through their school life and into adulthood.

Our aims are to enable children to:

- Develop design and making skills
- Develop knowledge and understanding in different joining and construction techniques
- Use a wide range of tools and materials safely and adeptly
- Learn about health and safety and protective measures when using specific tools such as scissors
- Develop their creativity
- Learn the principles of healthy eating and work with adults to cook or bake simple dishes

## **Implementation**

The Design and Technology National Curriculum outlines the three main stages of the design process; design, make and evaluate. Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical, and technical understanding required for each strand. Cooking and Nutrition has its own separate section with a focus on specific skills, principles, and techniques in food, including where food comes from, diet and seasonality. The National Curriculum for Design and Technology organises the attainment levels under 5 subheadings; design, make, evaluate, technical knowledge and cooking and nutrition.

Below are the requirements for Design and Technology for KS1 and KS2.

### **The National Curriculum Key Stage 1**

1.1. The National Curriculum prescribes that at Key Stage 1 pupils should be taught:

1.1.1. The knowledge, understanding and skills needed to engage in an iterative process of designing and making, and work in a range of relevant contexts.

1.1.2. Design 1.1.2.1. Design purposeful, functional and appealing products for themselves and other users based on design criteria.

1.1.2.2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

1.1.3. Make 1.1.3.1. Select from and use a range of tools and equipment to perform practical tasks accurately.

1.1.3.2. Select from and use a range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

#### 1.1.4. Evaluate

1.1.4.1. Explore and evaluate a range of existing products.

1.1.4.2. Evaluate their ideas and products against design criteria.

#### 1.1.5. Technical knowledge

1.1.5.1. Build structures, exploring how they can be made stronger, stiffer and more stable.

1.1.5.2. Explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.

#### 1.1.6. Cooking and nutrition

1.1.6.1. Use the basic principles of a healthy and varied diet to prepare dishes.

1.1.6.2. Understand where food comes from. 1.

### **The National Curriculum Key Stage 2**

1.1. The National Curriculum prescribes that at Key Stage 2 pupils should be taught:

1.1.1. 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.

#### **1.1.2. Design**

1.1.2.1. To use research and identify criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at particular individuals or groups.

1.1.2.2. To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design (CAD).

#### **1.1.3. Make**

1.1.3.1. Select from and use a wider range of tools and equipment to perform practical tasks accurately.

1.1.3.2. 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.

#### **1.1.4. Evaluate 1.1.4.1.**

Investigate and analyse a range of existing products.

1.1.4.2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

1.1.4.3. Understand how key events and individuals in design and technology have helped to shape the world.

#### **1.1.5. Technical knowledge**

1.1.5.1. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

1.1.5.2. Understand and use mechanical systems, such as gears, pulleys, cams, levers and linkages, in their products.

1.1.5.3. Understand and use electrical systems, such as series circuits incorporating switches, bulbs, buzzers and motors, in their products.

#### **1.1.6. Cooking and nutrition**

1.1.6.1. Understand and apply the principles of a healthy and varied diet.

1.1.6.2. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

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

### **EYFS**

Within the Nursery setting Design and Technology is supported through carefully planned resources and play opportunities that children can access freely throughout the day, e.g. junk modelling, construction (indoors and outdoors), wooden blocks and learning about healthy eating and oral health. These are integrated within the continuous provision with the support of an adult where needed to teach specific skills or knowledge. In Reception Class, design and technology is supported in the same way as the nursery, with carefully planned and accessible resources so the children can lead their own design and creations. In addition to this, Reception Class take part in the specific DT days every half-term, planned around the same theme as the rest of the school.

### **DT day strands**

KAPOW organises the strands of design and technology into six key areas, which are spread over the school year in six DT days. These are:

- Mechanisms
- Structures
- Textiles
- Cooking and Nutrition
- Electrical Systems (KS2)
- Digital World (KS2)

The KAPOW scheme of work is a spiral curriculum which allows the children to return to, revisit and build upon skills and knowledge.

### **Progression of Skills**

Christ the King uses a progression of skills map which shows the skills, knowledge and vocabulary taught within each year group from EYFS to Year 6. This is broken down into each DT projects and shows how the skills develop to ensure attainment targets are securely met by the end of each key stage. This map also allows all teaching staff to see the skills taught prior to the current year group and how the skills they teach translate into the next year group. The progression map is available on the school website in the Design and Technology area with the other curriculum materials.

### **Teaching**

Principles for effective teaching include:

- Setting task in the context of pupils' prior knowledge
- Promoting active learning
- Inspiring, exciting and motivating pupils to know more

Strategies for effective teaching include:

- The use of a variety of teaching methods including, whole class work, paired work, independent work, practical hands-on work, computer based and inventive tasks
- Ensuring the method used suits the purpose and needs of the children
- Providing a meaningful context and clear purpose when assigning tasks
- Including investigate, disassembly and evaluative activities
- Using focused practical tasks to help the children make and evaluate products
- Ensuring tasks are built on skills and understanding

Learning environment:

- Activities are organised at the teacher's discretion and according to the availability of materials
- Teachers will make provision for the differing needs of individual children to be met so each child is able to participate and reach their potential

### **Impact**

The aim for the design and technology curriculum at Christ the King is to enable children to build on and develop a repertoire of skills and knowledge in design and technology to

enable them to ultimately be innovative and resourceful members of society. By the end of their time at Christ the King we would like children to be able to:

- Understand the functional and aesthetic properties of a range of materials and resources
- Understand how to use and combine tools to carry out different processes for shaping, decorating and manufacturing products
- Build and acquire a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes, including models, prototypes, CAD and products to fulfil the needs to users, clients and scenarios
- Understand and apply the principles of healthy eating, diets and recipes, including key processes, food groups and cooking equipment
- Self-evaluate and reflect on learning at key stages and identify areas to improve

### **Assessment and recording**

Teachers will use the Design and Technology objectives on Insight to make a judgement on children's attainment and progress at the key assessment periods throughout the year. Teachers will use the assessment matrix to support their judgements. Teachers check and refer to previous related knowledge at the beginning of each new Design and Technology topic. Parents and Carers will be informed on children's progress at key points throughout the year and this information will be communicated to the child's next teacher.

Teacher's will keep evidence of Design and Technology work undertaken. The subject leader will collate this evidence as part of the on-going monitoring process.

Displays within the classroom and hall areas will reflect a range of work across key stages, to celebrate and exhibit children's varied responses to the brief.

### **Further Information**

The curriculum coordinator:

The school's appointed curriculum coordinator will oversee the continuity of the subject and the progression of teaching and learning using the progression map and curriculum plans from KAPOW. They will monitor the quality of teaching and the standard of work produced using a variety of methods such as work scrutinies, lesson observations and analysing data on FFT. Evidence will be kept from year to year. The subject leader will offer support to colleagues and share their expertise and experience.

### **Resources**

Each classroom has basic design and technology resources maintained by the individual teachers.

Learning resources, such as videos can be accessed via the KAPOW website.

Food technology resources are kept in the Staffroom.

Further DT resources will be stored in the cupboard up from the photocopying room.

Materials such as card, glue sticks and fabrics, will be ordered by the curriculum coordinator to enable all teaching staff to have the required resources prior to their DT projects.

### **Health and Safety**

Certain health and safety concerns are inherent with design and technology, including the storage of materials and tools and the use of equipment within lessons.

Children are instructed in the correct use of equipment and tools and the specific dangers of using heated or sharp resources.

Children are supervised at all times during activities.

A risk assessment covering the use of saws and other sharp tools, along with heated tools, such as glue guns, has been conducted and is updated as needed.

Children are only allowed to use a lower temperature glue gun under 1:1 supervision. An adult must use a glue gun at all other times. The use of glue guns will be considered alongside all viable alternatives such as adhesive tapes, blue tack, string and other fasteners, to ensure the most suitable materials are used for each project.

A fire safety blanket must be kept with the cooker at all times.

If cooking is taking place in the classroom, the cooker must be returned in a suitably clean and tidy condition after use.

Teaching assistants may take a maximum of eight children to cook in the staffroom.

Parent helpers must be supervised when cooking with groups of children.

Children must follow hygiene procedures and obey rules during cooking sessions.

### **Equal Opportunities**

Our whole school policy on equal opportunities will be adhered to in Design and Technology activities. Teachers ensure that children have access to the range of Design and Technology activities and use opportunities within Design

and Technology to challenge stereotypes. Children are encouraged and supported to develop their Design and Technology capability using a range of materials. Children with special needs or disabilities will be differentiated for and supported appropriately, to ensure development of skills and equal access to the Design and Technology curriculum.

Updated Autumn Term 2022 by Sophie Rouse