# Ireby Church of England Primary School

# Design Technology

# Design Technology (DT)

## Christian vision: 'Created to do Good' Ephesians 2:10

By instilling our values through our learning and play, it is our hope that our children develop a deeper understanding of themselves and the world around them. We want our children to know that they are part of our local, national and global community and that, in their own way, they can help to make our world better place.

Design Technology gives our children the opportunity to develop skills, knowledge and understanding of designing and making functional products. We feel it is vital to nurture creativity and innovation through design, and by exploring the designs in the world in which we all live and work.

## Our Aim

To build our children's Design and Technology skills and knowledge so that they achieve specific '**end points**' at each key stage of their learning, and commit this learning to their long-term memory, enabling them to know more and do more and fulfil our Christian vision of being healthy, active citizens who can contribute positively to making our world a  better place both during their time at Ireby and beyond.

## Design Technology

## Intent

Our Design and technology curriculum aims 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 our curriculum, we aim to build an awareness of the impact of design and technology on our lives and encourage pupils to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements.

Our Design and technology curriculum enables pupils to meet the end of key stage attainment targets in the National curriculum and the aims also align with those in the National curriculum. EYFS (Reception) units provide opportunities for pupils' to work towards the Development matters statements and the Early Learning Goals.

**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 a separate section, with a focus on specific principles, skills and techniques in food, including where food comes from, diet and seasonality.

The National curriculum organises the Design and technology attainment targets under five subheadings or strands:
● Design
● Make
● Evaluate
● Technical knowledge
● Cooking and nutrition*

Our Design and technology curriculum has a clear progression of skills and knowledge within these five strands across each year group. Our Progression of skills shows the skills and knowledge that are taught within each year group and how these skills develop to ensure that attainment targets are securely met by the end of each key stage.

Through our Design and technology curriulum, pupils respond to design briefs and scenarios that require consideration of the needs of others, developing their skills in six key areas:

● Mechanisms
● Structures
● Textiles
● Food
● Electrical systems (KS2) and
● Digital world (KS2)

Each of our key areas follows the design process (design, make and evaluate) and has a particular theme and focus from the technical knowledge or cooking and nutrition section of the curriculum. The Kapow Primary scheme is a spiral curriculum, with key areas revisited again and again with increasing complexity, allowing pupils to revisit and build on their previous learning.

Lessons incorporate a range of teaching strategies from independent tasks, paired and group work including practical hands-on, computer-based and inventive tasks. This variety means that lessons are engaging and appeal to those with a variety of learning styles. Knowledge organisers for each unit support pupils in building a foundation of factual knowledge by encouraging recall of key facts and vocabulary.

At Ireby, we understand that strong subject knowledge is vital for staff to be able to deliver a highly effective and robust Design and technology curriculum. Each sequence of lessons includes multiple teacher videos to develop subject knowledge and support ongoing CPD.

Implementation will be in-line with our [Curriculum intent, implementation and impact policy.](#)

**Impact**

The impact of our DT curriculum is constantly monitored through both formative and summative assessment. Every lesson we teach has a clear Learning Objective and success criteria against which assess. We use a variety of teaching strategies such as quizzing, questioning and feedback (see our teaching and learning policy) to inform our assessments.

After the implementation of our Design and technology curriculum, pupils should leave school equipped with a range of skills to enable them to succeed in their secondary education and be innovative and resourceful members of society.

The expected impact of following the Kapow Primary Design and technology curriculum is that children will:

- 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 apply a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes, including models, prototypes, CAD, and products to fulfil the needs of users, clients, and scenarios.
- Understand and apply the principles of healthy eating, diets, and recipes, including key processes, food groups and cooking equipment.
- Have an appreciation for key individuals, inventions, and events in history and of today that impact our world.
- Recognise where our decisions can impact the wider world in terms of community, social and environmental issues.
- Self-evaluate and reflect on learning at different stages and identify areas to improve.
- Meet the end of key stage expectations outlined in the National curriculum for Design and technology.
- Meet the end of key stage expectations outlined in the National curriculum for Computing.

**Timetabling and organisation**

EYFS and Key Stage 1 are taught in their class, Key Stage 2 are taught as one class.

In EYFS, Key Stage 1 and 2, the DT curriculum is delivered through a weekly 1-hour lesson. DT is focussed on:

- Designing
- Making
- Evaluating
- Technical knowledge

Design Technology is taught by qualified teachers. We invest in equipment and resources, including continued professional development, to support the delivery of our curriculum.

**End points**
Our Design Technology curriculum supports every child to reach a required 'end point' by the end of each Key Stage. These 'end points' reflect both the requirements of the National Curriculum 2014, and the needs of the children in our school context.

**End Points Design Technology**

**Key Stage 1**

**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**

**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

**Our Curriculum design**
Design Technology is planned on a two-year rolling programme for key Stage 1 and a two-year rolling programme for Lower and Upper Key Stage 2 in order

to support our Christian vision and aims i.e to build knowledge and skills, commit these to memory and reach 'end points' identified above. It runs for ½ a term in each term, for 2-hours per week.

## Key Stage 1 and 2  (Two-year rolling programme – KS 1, 2-year)

| | | Autumn Term | | Spring Term | | Summer Term | |
|---|---|---|---|---|---|---|---|
| **CYCLE A** | **KS1** | Painting | Digital Media | Textiles | Mechanics & Construction | Drawing | Collage & Materials |
| | **KS2** | Painting | Food | Sculpture | Mechanics & Construction | Collage | Digital Media |
| | | | | | | | |
| **CYCLE B** | **KS1** | Food | Print | Sculpture | Construction | Painting | Textiles |
| | **KS2** | Textiles | Drawing | Construction | Painting | Sculpture | Print |
| | | | | | | | |

**Greyed out boxes denote DT curriculum**

**Our sequence of learning**

Units of work are carefully sequenced in order to support our aim to build children's Design Technology skills and knowledge towards specific '**end points**' at each key stage of their learning, and commit this learning to their long-term memory. For example, structure: constructing a windmill, is taught in Key Stage 1 in order to support children's learning of structures. Pavilions and playgrounds are taught in Key Stage 2. To find out more about our progression of skills and knowledge click on our design technology progression link.

**Monitoring and evaluation of effectiveness of this policy**

The headteacher and DT subject leader are responsible for monitoring and evaluating the effectiveness of this policy towards meeting our stated vision and aims. This will be achieved through:

| Activity | Frequency |
|---|---|
| Lesson observations | Our DT leader will sample lessons during the year |

| Pupil voice | Samples on DT during year |
|---|---|
| Collecting and evaluating summative assessment | Termly<br><br>Teachers will review learning towards 'end points' and record data on Scholarpack for evaluation by the subject leader |

**The role of governors**

Our governors determine, support, monitor and review the school's approach to teaching and learning. In particular they:

- support the use of appropriate teaching strategies by allocating resources effectively;
- ensure that the school buildings and premises are used optimally to support teaching and learning;
- check teaching methods in the light of health and safety regulations;
- seek to ensure that our staff development and our performance management both promote good-quality teaching;
- monitor the effectiveness of the school's teaching and learning approaches through the school's self-review processes, which include reports from the headteacher, senior leaders and subject leaders, and a review of the continuing professional development of staff.

**Monitoring and review of this policy**

Senior leaders monitor the school's DT Policy and carry out reviews so that we can take account of new initiatives and research, changes in the DT curriculum, developments in technology or changes to the physical environment of the school. We will therefore review this policy every three years or sooner if required.