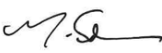




Ireby Church of England Primary School

Design Technology

Signed by:

_____ 

_____ Head Teacher

Date: 2^{1st} September 2026

Next review date: September 2028 or sooner if required

School Governance:

Responsibility of the school leadership

Design Technology (DT)

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

At Ireby, we are dedicated to creating a loving community for all, where all are celebrated as unique individuals and where passions and talents can flourish. We learn how God teaches us how to live our lives, how to grow relationships, accept others and use the words and example of Jesus as a foundation for all our learning.

Our Design technology policy supports our children's academic, social and spiritual development through studying a rich DT curriculum which enables all to flourish. DT topics are carefully selected so that we give our children the opportunity to develop skills, knowledge and understanding of designing and making functional products and nurture their creativity and innovation through design, and by exploring the designs in the world in which we all live and work.

INTENT

This section outlines the overall D&T curriculum plan, including its structure, sequencing and the specific knowledge and skills students are expected to acquire.

Our Design and technology curriculum aims to inspire pupils to become curious, creative and innovative thinkers with a broad understanding of how products are designed and made, in other words, to think like designers and engineers. The intention is for pupils to develop the confidence to identify problems, generate ideas, plan and create products and evaluate their outcomes.

Our curriculum aims to raise pupils' awareness of how design and technology shape the way they live, work and interact with the world. It encourages pupils to become resourceful, enterprising individuals who have the skills to contribute to and improve the world around them.

Our curriculum, supported by Kapow, supports teachers in developing their subject knowledge and skills, enabling the delivery of engaging, well-informed lessons with confidence. The curriculum is designed to be both accessible and ambitious, ensuring all learners' full participation and potential achievement.

Statutory and Non-Statutory guidance

National curriculum

Our curriculum fulfils the statutory requirements for Design and technology outlined in National curriculum (2014).

New research and developments

Our DT curriculum is continually evaluated and refined through regular curriculum reviews, internal audits and feedback from subscribing schools.

Updates are informed by the latest subject-specific research, changes to National curriculum guidance and developments in pedagogy. This ensures the curriculum remains current, effective and relevant.

Broad and balanced curriculum

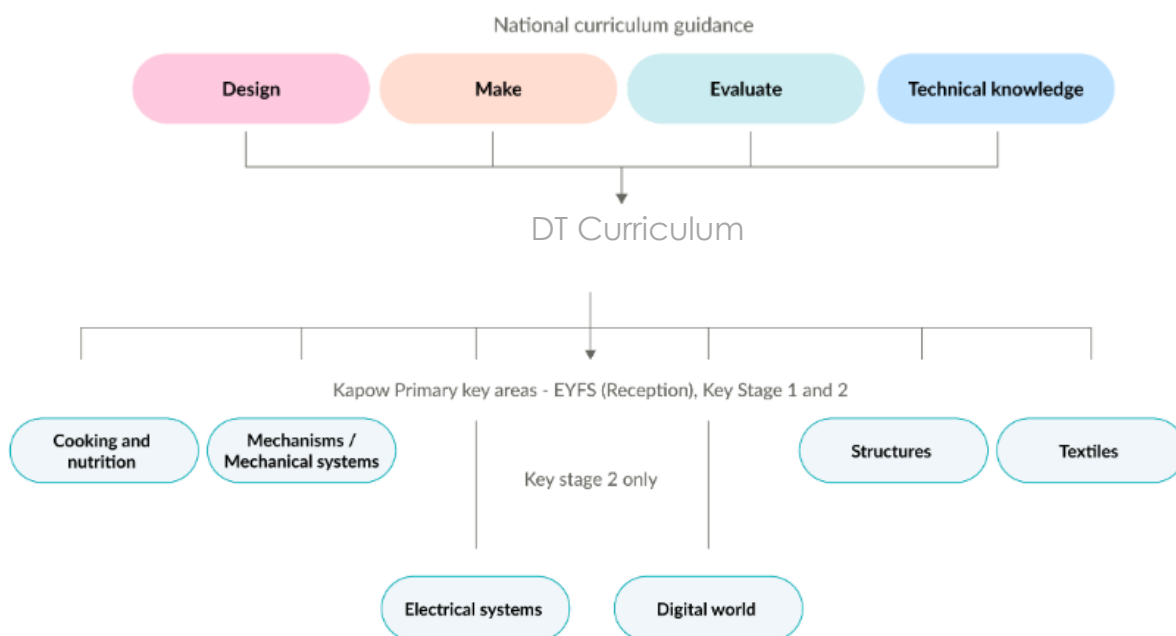
The strands

Our Design and technology curriculum is structured around four strands that run through every unit:

- Design
- Make
- Evaluate
- Technical knowledge

These strands ensure a balanced coverage of the substantive, disciplinary and procedural knowledge pupils need to progress in Design and technology.

They support the development of creativity, problem-solving and technical understanding, preparing pupils to design purposeful, functional products with increasing independence and confidence.



Progression

The D&T: Progression of skills and knowledge document provides an overview of the skills and knowledge covered in each phase and strand. It explains how D&T skills and knowledge are developed to support pupils in reaching key stage outcomes as outlined in the National curriculum.

New learning is weighted toward the start of each key stage, allowing ample opportunity for it to be revisited and applied in later years. As a result, knowledge accumulation may appear heavier in some year groups than others.

Spiral curriculum



Our DT curriculum has been designed as a spiral curriculum with the following key principles in mind:

- **Cyclical** – pupils return to the key knowledge and skills again and again during their time in primary school.
- **Increasing depth** – each time a skill is revisited, it is covered with greater complexity.
- **Prior knowledge** – pupils build upon previous foundations rather than starting again.

Progressing through practice

Building on the principles of a spiral curriculum, the D&T curriculum supports pupils in developing from early understanding of materials and hands-on exploration to refining ideas, evaluating existing products and solving real-world problems.

Types of knowledge

While there is currently no Ofsted research review specifically for Design and technology, our curriculum is informed by research reviews in related subjects such as Art and design, Science and Computing.

In our D&T curriculum, knowledge is defined using three interrelated categories:

- **Substantive knowledge** – the factual and conceptual understanding that underpins the design and creation of products, such as knowing how structures gain stability or how nutrients contribute to a healthy diet.
- **Disciplinary knowledge** – the thinking processes used by designers, including how problems are explored, decisions are justified and ideas are refined through evaluation and feedback.
- **Procedural knowledge** – the practical skills and techniques pupils need to make products effectively and safely, such as joining, cutting, shaping or finishing.

Substantive knowledge

Substantive knowledge in D&T refers to the factual and conceptual understanding pupils need to design and make effective products.

This includes knowledge of materials and their properties, mechanical and electrical components, nutrition and food sources and the purpose and features of existing products.

Disciplinary knowledge

Disciplinary knowledge in D&T refers to understanding the practices and thinking processes that underpin the work of designers and engineers.

It encompasses recognising what makes a product effective, approaching problems creatively and testing and refining ideas in response to real needs.

Procedural knowledge

Procedural knowledge in D&T is the knowledge of how to perform tasks: the hands-on skills, techniques and methods needed to design, make and evaluate products effectively.

It encompasses everything from how to cut, shape, join and finish materials to using tools, equipment and ingredients safely and accurately.

Wider skills and knowledge

Digital literacy

Our D&T curriculum goes beyond basic digital literacy by giving pupils hands-on experience with digital tools and programmable technologies.

Through the Digital world key area, pupils develop confidence in coding, Computer-Aided Design (CAD) and control systems. This supports building the skills to design, monitor and adapt real-world products in a digitally connected world.

Oracy

Lessons encourage discussion, debate and presentations on D&T topics, allowing pupils to articulate their understanding, justify design decisions and engage in collaborative problem-solving.

Pupils use oracy to enhance their learning by thinking aloud, questioning and discussing activities. They develop essential skills such as choosing appropriate technical vocabulary, organising their ideas clearly and listening effectively to others.

Sustainability

Our D&T curriculum embeds sustainability within the design process, encouraging pupils to consider the environmental impact of the products they design, make and evaluate.

Units across the curriculum explore material choices, food miles and digital solutions that reduce waste or energy use.

The curriculum develops practical problem-solving skills and a deeper understanding of sustainable thinking by engaging pupils with real-world challenges, such as designing for reuse or responsible sourcing.

Pupils learn that thoughtful design can lead to positive change, promoting a sense of agency and responsibility for the world they are helping to shape.

Critical thinking

Pupils analyse design briefs, explore different user needs and perspectives and evaluate materials and production methods.

This helps them to question assumptions and make informed decisions when developing creative, functional and sustainable solutions.

Personal development in DT

SMSC

The curriculum supports Spiritual, Moral, Social and Cultural (SMSC) development by encouraging pupils to:

- Explore different perspectives
- Reflect on ethical issues
- Collaborate with others
- Appreciate cultural diversity through subject-specific content

British values

Lessons promote British values (democracy, the rule of law, individual liberty, mutual respect and tolerance) by incorporating activities that encourage debate, respect for differing opinions and an understanding of societal structures.

Cultural capital

Our D&T curriculum broadens pupils' experiences by introducing them to key designers, inventors, historical and cultural contexts, and a variety of design traditions.

It ensures pupils gain the knowledge and skills needed to engage meaningfully with the designed world and contribute to society. This includes knowledge of the design cycle, a transferable skill applicable to many different disciplines beyond D&T.

Transition from EYFS to KS 1

Continuity of learning

Our DT curriculum aligns with the statutory EYFS (Reception) guidance.

Key themes and skills introduced in EYFS (Reception) are revisited and developed further in KS1, ensuring continuity and progression.

This transition is aided by the continuity of learning created by the curriculum strands, which run from EYFS to Year 6. Subject leaders can pinpoint how knowledge develops in EYFS (Reception) and how this creates the foundation for their learning in KS1.

Building on early experiences

Lessons build on curiosity, exploration and discussion, which are central to EYFS learning. As pupils move into Year 1, more structured activities are gradually introduced.

In KS1, oracy, questioning and storytelling help pupils transition from informal to more formal subject-based learning.

Development of key skills

The D&T scheme supports the progressive development of skills, such as observation, reasoning and problem-solving, which are introduced in EYFS and strengthened in KS1.

Adaptive teaching strategies ensure all learners are supported as they transition to more formal learning approaches.

Cross-curricular links

The D&T scheme aligns with EYFS Early Learning Goals, making links with communication and language, understanding the world and expressive arts to create a smooth transition.

It promotes independence and confidence, supporting pupils as they adapt to the expectations of KS1 learning.

Inclusion and diversity

Our D&T curriculum is designed to be inclusive and representative, ensuring all pupils see themselves reflected in the products, users and contexts they explore.

It features a diverse range of design traditions, food cultures, materials and technologies from around the world and encourages pupils to design with empathy and respect to a variety of users.

This approach helps challenge stereotypes, broaden perspectives and celebrate design as a practical, creative and culturally-rich human endeavour.

IMPLEMENTATION

This section outlines how the curriculum is taught in the classroom – including teaching strategies, learning activities and the use of resources.

Timetabling and structure

Our DT is timetabled for up to two hours per week in KS 1 and 2, alternating with art and design every half-term. There are two classes, Key Stage 1 and Key Stage 2. This allows us to plan a two-year rolling programme in KS 1 and a 4-year rolling programme in KS 2.

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

CPD

Kapow Primary supports teachers in delivering the D&T curriculum effectively through clear and informative CPD videos. These videos are designed to help teachers feel confident in their role by providing guidance on key concepts, teaching strategies and best practices.

Long term Plan

Our Long term curriculum plan is constructed from carefully sequenced units of work.

Unit Structure

Each unit comprises of up to 7 carefully sequenced lessons designed to support children's progression of skills and knowledge and vocabulary progression.

Lessons



Lesson 1: From farm to fork

- ✓ To understand how ingredients are reared and processed.

[Get started >](#)



Lesson 2: Different choices

- ✓ To make adaptations to design a recipe.

[Get started >](#)



Lesson 3: Nutritional value

- ✓ To evaluate nutritional content.

Key skills

- ✓ Explaining the farm-to-fork process.
- ✓ Researching existing recipes.
- ✓ Suggesting alternative ingredients.
- ✓ Analysing nutritional content.
- ✓ Writing an alternative recipe.
- ✓ Understanding food safety and food hygiene.

[Show all](#)

Key knowledge

To know:

- ✓ That beef comes from cows reared on farms.
- ✓ That recipes can be adapted to suit nutritional needs and dietary requirements.
- ✓ That nutritional information is found on food packaging.
- ✓ That coloured chopping boards can prevent cross-contamination.

Lesson Structure

Recap and recall

Each lesson begins with a short activity revisiting prior learning. This helps reinforce key knowledge, activate long-term memory and create connections between past and new learning.

Recap and recall activities are varied to keep the start of the lesson engaging and fun while still supporting active recall.

Attention grabber

A short, engaging activity designed to hook pupils into the new learning in the lesson.

This could be a thought-provoking question, a quick investigation or an interactive discussion to spark curiosity and enthusiasm for the topic.

Main event

The core part of the lesson, where pupils engage in activities that develop their understanding of the learning objective.

This includes a mixture of teacher modelling, guided practice and independent or collaborative tasks tailored to support all learners.

Wrapping up

A final reflective activity that consolidates learning.

This could involve reviewing the success criteria, discussing key learning or applying knowledge in a different context to assess understanding and encourage deeper thinking.

SEND

Our DT curriculum is designed to be fully adaptable for SEND pupils.

Children learn in a variety of ways and our D&T lessons include a range of strategies to support and challenge every pupil, including:

- **Scaffolding** – activities are designed with flexibility in mind, allowing for additional support or challenge where needed.
- **Multi-sensory approaches** – lessons incorporate different elements to engage all learners.
- **Clear instructions and structured tasks** – ensuring clarity and reducing cognitive load for pupils who benefit from additional support.
- **Opportunities for collaborative and independent learning** – allowing pupils to work at their own pace while building confidence and independence.

By embedding adaptive teaching throughout, the scheme ensures that all pupils, regardless of their starting points, can access and succeed in their learning.

In addition, the step-by-step curriculum design supports pupils with SEND, avoiding sudden jumps in complexity at transition points and allowing for steady, manageable progression.

Knowledge Retention

Spiral curriculum



Our DT curriculum incorporates a spiral curriculum model, ensuring that pupils revisit and develop their understanding of key themes and concepts as they progress. This approach allows them to make meaningful connections, reinforce their learning and achieve mastery over time.

- **Revisiting key concepts** – pupils encounter the same ideas multiple times throughout their education, with each revisit adding more complexity
- **Progressive depth** – concepts are not just repeated but expanded upon, helping pupils to make connections and develop a richer understanding over time.
- **Knowledge retention** – regular exposure to key ideas strengthens memory and prevents knowledge from being forgotten.
- **Skill development** – pupils refine and apply their skills in different contexts, improving their ability to think critically and solve problems.
- **Adaptive learning** – by building on prior knowledge, the curriculum meets pupils at their current level and supports all learners, including those who need extra reinforcement and those who are ready for greater challenges.

Knowledge organisers

Knowledge organisers are a structured document designed to support pupils' learning by clearly outlining the key knowledge, vocabulary and concepts covered in a unit of work. They can be found in children's books at the start of each unit of work.

Knowledge organisers serve as a reference tool for both teachers and pupils, helping to consolidate learning and support knowledge retention.

- **Essential knowledge at a glance** – summarises the most important facts, concepts and skills that pupils need to learn for a particular unit.
- **Key vocabulary** – provides a list of subject-specific terms with definitions to develop pupils' language and understanding.
- **Clear and visual layout** – organised in a way that makes information easy to digest and revisit, often using diagrams, timelines or key images.
- **Support for retrieval practice** – helps pupils engage in self-assessment, recall activities and revision, reinforcing long-term memory.
- **Teacher and pupil-friendly** – acts as a quick reference for teachers when planning lessons and an accessible learning aid for pupils to develop independence in their studies.

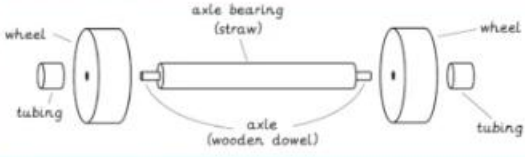
D&T - Mechanical cars



The parts of a machine that move together are called a mechanism. When a machine has more than one mechanism, it is a mechanical system.

Wheel mechanism: the axle spins freely inside the bearing, while the wheels are secured to the axle so they spin with it, allowing the car to roll.

Exploded diagrams are used to show how different parts of an object fit together.



A prototype is a simple model built to test a design before making the final product.



Prototype one mechanism: an inclined plane (ramp) is used to make the car roll.



Prototype two mechanism: a rubber band is used to slingshot the car forwards.



Prototype three mechanism: a rubber band is wound around the back axle and unwinds to make the car move.

Assessment during the lesson

Formative assessment is embedded throughout our D&T lessons to ensure that teachers can gauge pupils' understanding in real time and adapt their teaching accordingly.

- **Questioning** – Lesson plans include targeted and open-ended questions to check understanding, promote critical thinking and address misconceptions.
- **Observation** – Teachers are supported to observe pupils during tasks, noting how they approach activities, collaborate and apply design skills.
- **Discussion and peer interaction** – Pair and group discussions are built into lessons, providing opportunities for pupils to articulate their thinking and for teachers to assess understanding through dialogue.

- **Lesson pauses** – Plans include strategic pause points for checking comprehension, summarising learning and addressing any common errors before progressing.
- **Retrieval practice** – Recap activities, such as short recall tasks and oral explanations, are embedded to reinforce prior knowledge and assess retention.
- **Use of success criteria** – Success criteria are shared within lessons, allowing pupils to self-assess or peer-assess their work and reflect on their progress.
- **Short reflections in the Wrapping up** – Lessons end with brief written or verbal reflections, enabling pupils to consolidate learning and teachers to gauge understanding.

Cross-Curricular

Our DT curriculum supports cross-curricular learning by making clear connections between subjects, helping pupils develop a broader understanding of key concepts and skills.

Cross-curricular links are explicitly highlighted: each unit includes identified cross-curricular connections, detailed in the unit and long-term plans. These allow teachers to integrate learning across different subjects.

In addition, each lesson has a 'Cross-curricular links' section that shows the links to the National curriculum in other relevant subjects.

IMPACT

This section outlines how the curriculum checks what pupils know, understand and are able to do as a result of studying Design and technology.

Assessment

Formative

D&T lessons include ongoing assessment opportunities, such as questioning, retrieval practice and interactive activities.

These enable teachers to assess understanding in real time and adapt their teaching accordingly.

Summative

Each unit provides an Assessment quiz and Knowledge catcher, which allow teachers to measure pupils' understanding at key points. These are completed at the beginning and end of each unit and support teachers' professional judgement.

These tools help gauge how well pupils have retained key knowledge and skills over time.

Evidencing Progress

Written outcomes

Pupils demonstrate their learning and provide tangible evidence of progress through a variety of activities, including structured written work, annotated diagrams and creative responses.

Pupil voice

Lessons encourage discussion, reflection and verbal explanations. This allows teachers to capture pupils' understanding through questioning, class discussions and recorded responses, supporting a broader view of progress beyond written work.

Assessment spreadsheet

The Assessment spreadsheet helps track pupils' D&T attainment over time.

This tool allows teachers to record progress against learning objectives and assessment statements, making it easier to monitor development and identify areas for support.

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

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 Teachers will review learning towards 'end points' and record data on spreadsheet 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.