



Shining Together Through Courage, Connection and Curiosity.

Guided by Christian values, we inspire every child to let their light shine through a love of learning.

'Let your light shine for all to see' Matthew 5:16

Design Technology

Intent

At Huby, we believe that every child can become a **confident, purposeful, and innovative designer and maker**. Design and Technology is a vital vehicle through which children explore problems, express creative solutions, shape the physical world, and improve the lives of others. We want our children to develop a lifelong curiosity for how things work and to recognise that their creations have the power to solve real-world problems, inspire others, and make a tangible difference.

Our DT curriculum is designed to equip children with the technical knowledge, specialized vocabulary, and practical skills they need to design, make, and evaluate products for a range of meaningful contexts and users. Through a carefully sequenced, progressive curriculum, children develop their understanding of mechanisms, structures, textiles, electrical systems, digital programming, and food technology. They learn to work safely and effectively with varied tools and materials alongside developing the resilience to iterate and improve their designs.

We want every child to **shine as a designer**. Through Design and Technology, children develop the **courage** to take creative risks and learn from failure; the **curiosity** to dismantle, question, and explore the engineered world; and the **connection** to design empathetically for others and understand the global impact of technology.

Our curriculum is highly ambitious for all pupils. We maintain high expectations for every child, using targeted adaptation, scaffolding, adaptive tools, and appropriate practical challenges to ensure all pupils make strong progress while growing in practical independence.

Through encounters with real-world design briefs, historical inventions, and diverse modern engineers, children experience the wonder of human ingenuity. Ultimately, we want our pupils to leave Year 6 with the technical literacy to thrive in a digital and mechanical world, and the deep-rooted understanding that their creativity matters. We want them to have the courage to **let their light shine** through their innovative designs, practical skills, and collaborative spirits.

Implementation

Our Design and Technology curriculum is meticulously sequenced from EYFS to Year 6 to ensure children progressively build the technical knowledge, practical skills, and design vocabulary required to become successful creators.

We use the **Kapow Primary scheme of work** as the framework for our DT curriculum. Kapow's units provide a highly structured progression across distinct key areas—*Structures, Mechanisms/Mechanical Systems, Textiles, Electrical Systems, Digital World, and Cooking and Nutrition*—while allowing teachers to adapt projects to fit our local context, wider curriculum themes, and pupils' distinct experiences.

The Design Process

Across the school, pupils are explicitly taught that Design and Technology is an iterative process. They are supported through three core phrases of learning:

Investigate and Evaluate → Design → Make → Evaluate

Teachers explicitly model technical skills, tool safety, and engineering concepts, thinking aloud so that pupils understand *why* certain materials are chosen or *how* structural stability is achieved.

DT units are blocked or delivered in dedicated weekly sessions to ensure deep immersion in the projects. Lessons provide a balance of:

- Explicit teaching of technical knowledge, safety rules, and subject-specific vocabulary.
- Product analysis (disassembling and evaluating existing products).
- Focused practical tasks to practice specific skills (e.g., cutting, joining, sewing, stitching).
- Designing with a specific user and purpose in mind.
- Supported and independent making using a variety of tools and components.
- Constant testing, evaluating, and iterative refinement.
- Opportunities to celebrate, test, and share finished products with their intended audience.

Key Stage Breakdown

Early Years Foundation Stage (EYFS)

In EYFS, children develop the physical and creative foundations for DT through Expressive Arts and Design (EAD) and Physical Development. Expressive and construction opportunities are embedded throughout continuous provision, both indoors and outdoors.

Children develop fine motor control by using scissors, hole punches, and introductory joining techniques. They are encouraged to explore different materials, textures, and structures, giving meaning to their models. Adults model safe tool use, introduce basic structural language, and prompt children to solve simple problems, such as how to make a paper bridge stronger.

Key Stage 1 (KS1)

In KS1, children build increasing manual dexterity and begin working to design criteria. Following the Kapow progression, they explore stable structures (such as freestanding structures), simple mechanisms (sliders, levers, and wheels/axles), basic textiles (joining fabrics), and the fundamentals of preparing fruit and vegetables safely. Learning is anchored heavily in oral rehearsal and visual design drawings. Children begin to evaluate their work against their initial brief, identifying what worked well and what they could change to make it better.

Key Stage 2 (KS2)

In KS2, pupils build advanced independence, technical sophistication, and structural control. Through Kapow's units, they tackle complex, multi-layered design challenges. They explore advanced mechanisms (linkages, cams, pulleys, and gears), reinforce complex structures, use running and blanket stitches in textiles, and master seasonal cooking techniques.

In upper Key Stage 2, they integrate STEM concepts by designing electrical systems with switches and buzzers, and programming micro-bits within the "Digital World" units. Pupils take full ownership of their design portfolios—documenting their cross-sectional diagrams, material selections, step-by-step assembly plans, and rigorous final evaluations.

Technical Vocabulary and Language

Vocabulary development is highly intentional within our DT curriculum. Technical terms are taught, displayed on working walls, and utilised during practical tasks. Pupils are expected to use technical vocabulary when explaining their design choices or evaluating their prototypes.

Inclusion and Adaptation

We recognise that barriers to DT can arise from fine-motor difficulties, sensory sensitivities, working memory overload, or communication needs. Teachers adapt lessons proactively while maintaining high, ambitious expectations for final outcomes.

Adaptations include:

- Pre-cutting complex materials or providing easy-grip adaptive tools.
- Visual step-by-step photographic or video guides (Kapow's instructional media is very comprehensive and useful for this).
- Sentence stems and word banks for design portfolios and evaluation sheets.
- Peer-collaboration roles that pair complementary strengths (e.g., a master builder working with a lead designer).
- Tiered challenges that encourage advanced pupils to add extra functionality or electronic elements to their designs.

Spiritual Development Through Design and Technology

Spiritual development is intrinsically woven through our DT curriculum. Creating things out of raw materials allows children to reflect on their own talents, connect deeply with the needs of others, marvel at the beauty of well-engineered solutions, and contemplate the ethical stewardship of our planet.

We use the **Mirrors, Windows, Doors, and Candles** framework to intentionally map out spiritual growth within our Kapow units:

Mirrors – Looking Inwards (Myself)

DT acts as a powerful mirror for personal growth, character, and self-awareness. When a mechanism fails or a structure collapses, children must look inward to find the **courage** and patience to try again.

- Pupils reflect on their unique creative talents, problem-solving preferences, and personal style.
- They evaluate their own work honestly, identifying personal strengths and areas where they can improve.
- They experience the emotional journey of design—moving from the frustration of an error to the profound joy and satisfaction of a working creation, discovering how their individual light shines.

Doors – Looking Outwards (Others)

Excellent design requires intense empathy. Through Kapow’s user-focused design briefs, DT opens a door to understanding and serving the needs, experiences, and comfort of other people.

- Pupils design products specifically tailored to others, such as toys for EYFS children, accessible packaging for the elderly, or healthy meals for families with specific dietary constraints.
- They practice deep **connection** through collaborative construction tasks, learning to value, respect, and integrate the voices and skills of their team members.
- They discover how design can be an act of service, care, and Christian love for their neighbour.

Windows – Exploring Possibilities (Beauty & The World)

DT acts as a window, allowing children to gaze upon the wonder of human innovation, the elegance of mechanics, and the structural brilliance found within God’s creation.

- Pupils look through this window to study iconic structures, historical inventions, and brilliant designers, sparking a sense of awe at how human ingenuity shapes our lives.
- They use their **curiosity** to look closely at the beauty of form and function—appreciating how a product can be both exceptionally strong and visually stunning.
- They experiment with diverse materials, tools, and digital platforms, opening their eyes to the infinite, creative possibilities of what can be built.

Candles – Looking Beyond (The Big Questions)

DT pushes children to look beyond the physical object in front of them to consider deeper questions of meaning, impact, values, and global responsibility.

- Pupils engage with ethical questions surrounding mass production, plastics, material origins, and sustainability.

- They consider their role as stewards of creation, exploring how eco-design and recycling can limit our footprint on the planet.
- Through cooking and nutrition units, they pause to reflect on the beauty and complexity of natural ingredients, food security, and global resource distribution, connecting their learning directly to our core Christian values.

Impact

The impact of our Design and Technology curriculum is clearly visible in pupils who:

- Confidently navigate the iterative design process (Investigate, Design, Make, Evaluate).
- Select tools, components, and materials purposefully based on their technical properties.
- Apply accurate mechanical, structural, electrical, and digital knowledge to construct functional prototypes.
- Use ambitious, subject-specific technical vocabulary fluently when presenting or assessing work.
- Demonstrate immense resilience, viewing structural failures or design glitches as necessary steps toward improvement.
- Work safely, cleanly, and independently with an array of manual workshop tools.
- Take deep pride in the structural integrity, functionality, and aesthetic finish of their completed products.
- Exhibit genuine empathy by designing items that genuinely match the needs of an explicit end-user.
- Articulate how technology affects the wider world, displaying a conscious awareness of sustainability and ethical manufacturing.
- Let their light shine brightly by boldly showcasing unique, creative solutions to complex problems.

Monitoring and Assessment

Formative assessment is embedded naturally throughout the practical elements of every lesson. Teachers provide immediate, actionable verbal feedback at the workbench—guiding tool technique, challenging structural choices, and addressing technical misconceptions instantly.

Summative judgments are recorded at the end of each Kapow unit, evaluating child performance against the specific design, make, and evaluate criteria.

The Subject Leader routinely evaluates curriculum impact through:

- **Design Portfolio Scrutiny:** Reviewing design drawings, iterations, and evaluation writes-ups across all year groups.

- **Photographic & 3D Product Showcases:** Reviewing the functional quality and ambition of finished physical models.
- **Pupil Voice Interviews:** Speaking with children to check vocabulary retention, understanding of the design process, and their grasp of the Mirrors, Windows, Doors, and Candles spiritual reflections.
- **Lesson Visits:** Observing the level of independence, courage, and safe tool use during practical construction phases.

By the end of Year 6, every child leaves Huby Primary School knowing that they are a capable creator, that their unique ideas can shape a better physical environment, and that they possess the skills and courage to **let their light shine out** into the wider world.