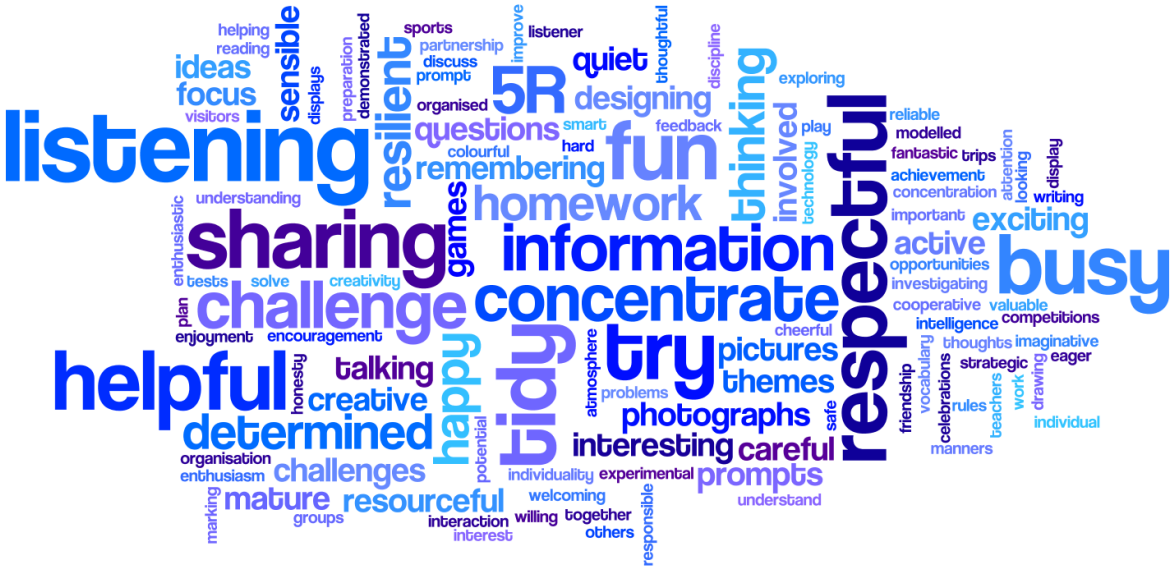
High Ercall Primary School



Design and Technology Policy

Date of Policy Creation	September 2020	**Named Responsibility**	Kate Caton
Date of review completion	September 2026	**Named Responsibility**	Leanne Carvell-Shepherd
Inception of new Policy	1st September 2026	**Named Responsibility**	Gemma Lingham
Date of Policy Adoption by Governing Body			

1. Intent and subject definition

Design and Technology is an inspiring, rigorous and practical subject in which pupils use creativity, technical knowledge and practical expertise to solve real and relevant problems. At High Ercall Primary School, pupils learn to design purposefully for users, make accurately and safely, evaluate products and ideas, and apply increasingly secure technical knowledge. Cooking and nutrition form an essential part of this entitlement.

Our curriculum is ambitious for all pupils. It is designed so that children know more, remember more and can increasingly apply what they know. We distinguish and connect substantive knowledge - knowledge of materials, components, mechanisms, structures, electrical systems, food, nutrition, designers and products - with disciplinary knowledge - the knowledge needed to think and work as designers: investigating needs, generating and communicating ideas, making decisions, prototyping, testing, evaluating and iterating.

2. Aims

- develop the creative, technical and practical expertise needed for everyday life and an increasingly technological world;
- build and apply a repertoire of knowledge and skills to design and make high-quality prototypes and products for a range of users;
- give every project a meaningful purpose, user and context wherever possible;
- develop pupils' ability to investigate existing products and learn from designers, engineers, inventors, chefs and manufacturers;
- develop accurate, safe and increasingly independent use of tools, equipment, materials, components and ingredients;
- develop secure technical knowledge of structures, mechanisms, mechanical systems, electrical systems and computing/control as appropriate;
- enable pupils to critique, test, evaluate and improve ideas and products against clear design criteria;
- develop food knowledge, practical cooking skills, understanding of nutrition, seasonality and food provenance;
- develop precise subject vocabulary and pupils' ability to explain design decisions;
- promote resilience, responsibility, reflection, respect and resourcefulness through iterative design and making.

3. Statutory curriculum expectations

The curriculum meets the National Curriculum for Design and Technology at Key Stages 1 and 2. Pupils engage in an iterative process of designing and making in relevant contexts, drawing appropriately on mathematics, science, computing, engineering and art.

Key Stage 1

- Design purposeful, functional and appealing products for themselves and other users, based on design criteria, and communicate ideas through talk, drawing, templates, mock-ups and appropriate technology.
- Select and use tools, equipment, materials and components for cutting, shaping, joining and finishing.
- Explore and evaluate existing products and evaluate their own ideas and products against design criteria.
- Build stronger, stiffer and more stable structures and explore mechanisms such as levers, sliders, wheels and axles.
- Use principles of a healthy and varied diet to prepare dishes and understand where food comes from.

Key Stage 2

- Use research and design criteria to develop innovative, functional, appealing products that are fit for purpose for identified users.
- Generate, develop, model and communicate ideas through annotated sketches, diagrams, prototypes, pattern pieces and computer-aided design where appropriate.
- Use a wider range of tools, equipment, materials and components accurately, considering functional properties and aesthetic qualities.
- Investigate existing products, evaluate against their own criteria, consider user views and understand how key events and individuals have shaped design and technology.
- Apply technical knowledge of stronger structures, mechanical systems, electrical systems and computing to program, monitor and control products.
- Apply principles of a healthy and varied diet; prepare and cook predominantly savoury dishes; understand seasonality and how ingredients are grown, reared, caught and processed.

4. Curriculum organisation and progression

DT is taught through the school's two-year rolling programme for mixed-age classes. The long-term plan ensures full coverage without unnecessary repetition and is supported by progression, vocabulary, book and enhancement documents. Units are sequenced so that component knowledge is taught and revisited before pupils are expected to combine it in increasingly complex design-and-make outcomes.

- Each unit identifies the intended user, purpose and design context.
- Pupils investigate relevant existing products before or alongside generating ideas.
- Technical knowledge is taught explicitly, not left to emerge incidentally from making.
- Practical skills are modelled and rehearsed before pupils apply them independently.
- Designing and making are iterative: pupils test, evaluate and refine rather than following a fixed linear recipe.
- Cross-curricular links are used when they strengthen DT learning; DT retains its own subject purpose and assessment.

5. Evidence-informed pedagogy

Teaching combines explicit instruction with purposeful design freedom. When pupils are novices, teachers reduce unnecessary cognitive load by modelling tools, techniques and processes clearly, teaching in manageable steps and providing guided practice. As knowledge and fluency increase, scaffolds are reduced and pupils take greater responsibility for planning, selecting, testing and improving.

- activate relevant prior knowledge before new content is introduced;
- model practical techniques, safe routines and design thinking using worked examples and think-alouds;
- teach and revisit technical vocabulary explicitly;
- use examples and non-examples of products, joins, mechanisms, structures and design decisions;
- provide frequent checks for understanding and immediate feedback during practical work;
- teach pupils to plan, monitor and evaluate their own design process through metacognitive prompts;
- use prototyping as a purposeful tool for learning, testing and refinement rather than as decoration or an additional finished product;
- build independence gradually by fading prompts, templates and adult support.

6. Assessment, retrieval and responsive teaching

Assessment in DT is primarily formative, curriculum-linked and proportionate. Its purpose is to identify what pupils know, understand and can do; diagnose misconceptions or insecure practical knowledge; and adapt teaching. It does not rely on the visual quality of a final product or on extensive summative data collection.

Unit mind maps and DT Retrieval Wall

At the beginning of each unit, the class teacher creates a shared mind map. This is organised around four consistent branches

- Design and evaluation - user, purpose, design criteria, research, communicating ideas, testing, evaluating and improving;
- Making skills and technical knowledge - tools, processes, structures, mechanisms, electrical systems, textiles, food techniques or computing relevant to the unit;
- Designers, inventors and existing products - key people, products and real-world examples that illuminate the unit;
- Vocabulary - precise technical and design language pupils are expected to understand and use.

The mind map becomes a working document. As learning develops, teachers and pupils add the essential knowledge that all pupils should remember. A small number of carefully designed retrieval

questions are generated from this knowledge and displayed on a DT Retrieval Wall. These are revisited through brief, low-stakes oral or written quizzing during the unit and at spaced points later in the year.

Retrieval is used for knowledge that can validly be recalled - for example vocabulary, material properties, names and functions of components, safety routines, mechanisms, electrical knowledge, food provenance and key designers. It does not replace assessment of practical competence, design reasoning or iterative problem-solving.

Assessment evidence

- class discussion, questioning and explanations;
- responses to retrieval questions and annotated mind maps;
- observation of practical techniques, accuracy, safety and increasing independence;
- design ideas, annotations, models, prototypes, pattern pieces and CAD where relevant;
- pupils' ability to select tools, materials, components and ingredients for a reason;
- testing and evaluation against design criteria and user needs;
- pupils' ability to identify problems and make purposeful improvements;
- finished products as one source of evidence, considered alongside the design-and-make process;
- pupil voice and photographic/Seesaw evidence where practical work cannot be retained in books.

Teachers use this evidence responsively. Misconceptions and insecure techniques are retaught; pupils who are secure are given appropriate opportunities to apply knowledge with greater independence. Summative judgements are made judiciously against the taught curriculum and progression expectations. The school does not create additional assessment paperwork solely for inspection.

7. Designing, making, evaluating and technical knowledge

These National Curriculum headings are closely connected rather than isolated lesson stages. Pupils may move repeatedly between research, ideas, modelling, making, testing and evaluation. Evaluation is strongest when it influences a subsequent decision or improvement.

8. Cooking and nutrition

Cooking and nutrition is taught as a practical, knowledge-rich part of DT. Pupils learn about healthy and varied diets, food provenance, seasonality, ingredients and appropriate preparation/cooking techniques. Food units include a genuine design context and user wherever possible, so that pupils make informed decisions about taste, texture, nutrition, appearance, cost and sustainability.

9. Early Years Foundation Stage

In Reception, foundations for DT are developed through Expressive Arts and Design, Physical Development and Understanding the World. Children investigate how things work, build and join using construction materials, select tools and materials, solve practical problems, adapt their ideas and

develop fine-motor control. Adults model safe tool use and design vocabulary while preserving purposeful play, exploration and child-initiated making.

10. Adaptive teaching, SEND and inclusion

All pupils are entitled to the same ambitious DT curriculum wherever possible. Teachers remove barriers through high-quality adaptive teaching rather than routinely reducing the curriculum goal.

- pre-teach and revisit technical vocabulary;
- model practical procedures explicitly and break complex processes into manageable steps;
- provide additional guided practice and carefully chosen examples;
- adapt tools, grips, materials, work surfaces or positioning where needed;
- use visual sequences, WIDGET symbols, checklists, templates or jigs where these support access;
- provide additional processing time and chunked instructions;
- use flexible grouping and purposeful adult support;
- fade scaffolds as pupils become more secure and independent;
- use assistive technology or alternative recording methods when appropriate without removing the core DT learning.

11. Enrichment, careers and cultural capital

The school uses visits, visitors, local industry, engineers, designers, makers, chefs and family/community expertise to deepen planned curriculum knowledge. Local opportunities across Shrewsbury, Telford, Ironbridge and Shropshire are used where they strengthen the intended learning. Pupils encounter diverse designers, engineers and inventors and learn that DT connects to manufacturing, construction, food, textiles, electronics, architecture, computing and sustainability.

12. Health and safety

Safe practice is part of the curriculum. Pupils are explicitly taught safe use of tools, equipment, electrical components, food-preparation equipment and materials. Staff follow school risk assessments, food hygiene and allergy procedures, and relevant educational-visit requirements. Risk is managed so that pupils can develop appropriate practical independence rather than being unnecessarily prevented from using suitable tools.

13. Resources and professional development

Resources are maintained to support the planned curriculum, including specialist equipment stored centrally. The subject leader supports colleagues with subject knowledge, practical techniques, assessment, health and safety and curriculum planning, and disseminates relevant professional development.

14. Monitoring and impact

- lesson visits and professional dialogue;
- review of DT books, design records, prototypes and photographic evidence;
- review of mind maps and retrieval walls;
- pupil voice, including recall of technical knowledge and explanation of design decisions;
- review of curriculum coverage and progression;
- monitoring of access and outcomes for pupils with SEND, disadvantaged pupils and other groups who may face barriers;
- staff feedback, resource review and CPD needs;
- governor monitoring and subject action planning.

Monitoring focuses on whether the intended curriculum is being learned: whether pupils retain important knowledge, develop practical competence and increasingly make purposeful, independent design decisions. Ofsted's September 2026 inspection materials emphasise well-planned, sequenced curricula, evidence-informed teaching, effective use of assessment to check understanding and adapt teaching, and the consideration of pupils' work alongside wider evidence.

15. Policy review

This policy will be reviewed every three years, or earlier where statutory requirements, curriculum design or relevant evidence change.