



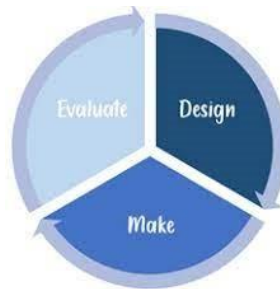
Hennock Community Primary School Design and Technology Curriculum

Our Curriculum statements are designed to be used as a supportive tool to plan teaching and learning across our school. The key skills are derived from the National Curriculum and spilt into individual year groups to support a progressive approach and mixed age classes.

The concept of future and innovation underpins our design and technology curriculum - we want pupils to view themselves as designers: risk taking, trialling and evaluating sitting centrally to their experience.

Pupils are encouraged to exercise their creativity through our designing, making and evaluating cycle. Combining designing and making skills, with knowledge and understanding ensures pupils have a rounded, progressive experience and provides skills that can be drawn upon for life.

Evaluation is an integral part of the design process, allowing children to improve and adapt their products and providing a platform to build and practice resilience.



Our D&T curriculum is delivered as a two-year rolling programme as we have classes in curriculum phases. This is taught weekly every other half term.

We build on a child's vocabulary by including key vocabulary at the start of each lesson. Teacher's will continually model the use of these Tier 3 words throughout the unit, which the children will become more secure in as they develop their understanding of the topic they are learning about.

Vocabulary

Children's command of vocabulary is fundamental to learning and progress across the curriculum. Vocabulary is developed actively, building systematically on pupil's current knowledge and deepening their understanding of etymology and morphology (word origins and structures) to increase their store of words. Simultaneously, pupils make links between known and new vocabulary and discuss and apply shades of meaning. In this way, children expand the vocabulary choices that are available to them. It is essential to introduce technical vocabulary which define each curriculum subject. Vocabulary development is underpinned by an oracy culture and a tiered approach. High value is placed on the conscious, purposeful selection of well-chosen vocabulary and appropriate sentence structure to enrich access to learning and feed into written work across the curriculum.

Year 1 & 2 A	Shade and Shelter Absorbent, clay, den, design criteria, durable, fabric, flexible, glass, material, metal, opaque, permanent, plastic, shade, shelter, stone, strong, tarpaulin, temporary transparent, waterproof, wood	Taxi Axle, chassis, design criteria, dowel, fixed axle, moving axle, passenger, taxi, vehicle, washer, wheel	Chop, Slice, Mash Chop, dairy, flowering head, fruit, grate, leaf, mash, peel, root, salad, salad dressing, seed, slice, stem, tear, texture, tool
Year 1 & 2 B	Remarkable Recipes Beef, chop, design criteria, edible, equipment, grate, ingredients, lamb, mash, mixed diet, mutton, peel, pork, preserves, pulses, recipe, slice, vegan diet, vegetarian diet	Beach Hut Apex roof, beach hut, bench hook, butt joint, cladding, design criteria, frame structure, G-clamp, junior hacksaw, mitre joint, sand, score, stilts, strengthen, triangular corner	Push and Pull Arc, bar, component, design criteria, fixed pivot, guide, lever, linkage, machine, mechanism, moving pivot, pivot, slider, slit, split pin
Year 3 & 4 A	Cook Well, Eat Well Bake, barbecue, boil, calcium, carbohydrate, design criteria, Eatwell Guide, fry, grill, microwave, mineral, nutrient, protein, ratatouille, roast, simmer, slow, cooking, steam, taco, vitamin	Making It Move Automaton, axle, cam, circular cam, design criteria, follower, heart cam, lever, linkage, machine, mechanism, pear cam, rotation, slider, snail cam, wheel	Tomb Builders Compound machine, effort, first-class lever, force, friction, fulcrum, inclined plane, lever, load, prototype, pulley, pyramid, rigidity, score, screw, second-class lever, simple machine, third-class lever, wedge, wheel and axle
Year 3 & 4 B	Fresh Food, Good Food	Functional and Fancy Fabrics	Greenhouse

	Best before date, canning, chop, cling film, decay, design criteria, drying food poisoning, freezing, grate, healthy snack, mash, microorganism, net, packaging, pasteurising, peel, pickling, preservation, refrigerating, salting, slice, tear, Tetra Pak, Tupperware, use by date	Applique, block printing, breathable, colour palette, cotton, denim, design criteria, durable, embellishment, embroider, fabric, Gore-Tex, hem, industry, lace, leather, Lycra, motif, natural fabric, nylon, polyester, synthetic fabric, versatile, wool, woven	Biome (Eden Project), butt join, cloche, cold frame, conservatory, design criteria, diagonal strut, frame structure, greenhouse, hot glue gun, plastic, rigid, stability, strength, translucent, transparent, triangular corner, vent
Year 5 & 6 A	Engineer Abutment, aqueduct, arch, arch bridge, beam, beam bridge, bridge, compression, concertina, distort, engineer, iron, span, steel, support pier, suspension bridge, tension, truss, truss bridge	Eat the Seasons Balanced diet, boil, carbon footprint, dice, food hygiene, grate, import, nutritional value, peel, saute, seasonality, steam	Architecture Architecture, capital, caryatids, column, computer-aided design, Corinthian column, cornice, Doric column, entablature, fluting, frieze, Ionic column, limestone, lintel, marble, pediment, post and lintel, stability, stiffness, support
Year 5 & 6 B	Make Do And Mend Bias binding, blanket stitch, bunting, coupon, darn, fastening, ration book, rationing, recycle, running stitch, tacking stitch, utility, whip stitch	Food For Life Additive, flavouring, knead, minimally processed food, organic food, pasteurise, preservative, processed food, prove, shelf life, ultra-processed food, unprocessed food, whole food, yeast	Moving Mechanisms Actuator, compress, compressor, deflate, force, gas, inflate, jack, lever, liquid, nozzle, particle, piston, plunger, pneumatic systems, pneumatics, pressure, reservoir, solid, syringe, system, valve

The National Curriculum

Key stage One

Through a variety of creative and practical activities, pupils should be taught 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 [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

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 Two

Through a variety of creative and practical activities, pupils should be taught 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 [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

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.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage One

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key stage Two

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world;
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users;
- critique, evaluate and test their ideas and products and the work of others;
- understand and apply the principles of nutrition and learn how to cook.

At Hennock we use Cornerstones Education's subject scheme to deliver the DT curriculum. We have organised the scheme so that art projects are delivered in a two-year rolling programme in half-termly blocks across the year. The design and technology projects are well sequenced to provide a coherent subject scheme that develops children's designing, planning, making and evaluating skills. Each project is based around a design and technology subject focus of structures, mechanisms, cooking and nutrition or textiles. The design and technology curriculum's electronic systems and IT monitoring and control elements are explicitly taught in our science projects to ensure the links between the subjects are highlighted. Where possible, meaningful links to other areas of the curriculum have been made. For example, the cooking and nutrition project Eat the Seasons is taught alongside the geography project Sow, Grow and Farm. All the projects follow a structure where children are introduced to key concepts and build up knowledge and skills over time, using a more comprehensive range of equipment and building, cutting, joining, finishing and cooking techniques as they progress through school. All projects contain focused, practical tasks in the Develop stage to help children gain the knowledge and skills needed to complete their Innovate tasks independently. Throughout Key Stages 1 and 2, children build up their knowledge and understanding of the iterative design process. They design, make, test and evaluate their products to match specific design criteria and ensure they fit their purpose. Throughout the projects, children are taught to work hygienically and safely.

Links with EYFS

The DT curriculum begins as soon as the children start school in the EYFS. Learning in DT links to the EYFS Statutory Educational Programme: Expressive Art and Design. The activities and enhanced provision in our early years curriculum provide children with the opportunity to construct and create with a range of materials. They are encouraged to work collaboratively and use a range of small and large-scale construction kits to create models. They are introduced to joining techniques and explore products to inspire their own designs. Throughout their time in the EYFS they build essential knowledge and understanding that they will apply in DT in KS1.

Key Stage 1

Children learn about food sources, begin to follow recipes and learn simple cooking techniques in the projects Chop, Slice and Mash and Remarkable Recipes. The projects Shad and Shelter and Beach Hut develop their knowledge of structures, and children learn to cut, join and strengthen wood for the first time. Children learn the term 'mechanism' and assemble and test wheels and axles in the project Taxi! They also explore using sliders, levers and linkages in the project Push and pull

Lower Key Stage 2

In Lower KS2, children continue to learn about food, understanding the concept of a balanced diet and making healthy meals in the projects Cook Well, Eatwell and Fresh Food, Good Food. They extend their understanding of mechanisms by exploring cams and using joining and finishing techniques to make automaton toys. They learn about six simple machines and use their knowledge to create a lifting or moving device prototype in the project Tomb Builders. Children design and build a greenhouse, using their understanding of opacity and transparency and the needs of plants from science learning to inform their design. They explore textiles, learning about the work of William Morris before designing, embellishing and finishing a fabric sample. They also explore and use electrical systems and IT monitoring and control in the science project Electrical Circuits and Conductors for the first time.

Upper Key Stage 2

Children continue to explore food and nutrition, learning about seasonal foods and the benefits of eating seasonally. They also learn about processed and whole foods in the project Food for Life, creating healthy menus from unprocessed foods. Children deepen their understanding of mechanisms by studying pneumatic systems in the project Moving Mechanisms. They learn about the forces at play and create a prototype for a functional, pneumatic machine. Children learn more about structures in the project Architecture, studying the history of architecture and developing new ways to create structural strength and stability. They use computer-aided design and consolidate their making skills to produce scale models. In the project Engineer, children consolidate their knowledge of structures, joining and strengthening techniques and electrical systems by completing a bridge-building challenge. They extend their knowledge of textiles by learning new stitches to join fabrics and using pattern pieces to create a range of products. They also explore the electrical conductivity of materials before making products incorporating circuits in the science project Properties and Changes of Materials.

In order to assess impact - a guide

Teachers are responsible for the regular assessment of their pupils against knowledge and key skills to judge the impact of teaching and learning in Design and Technology. As a measure of key skill coverage at the end of every lesson, teachers complete a coverage assessment for key skills taught to monitor that children are being taught key skills regularly throughout the year. At the end of each unit, children are assessed on the knowledge and skills they have learnt throughout the unit.

Teachers will regularly complete Knowledge ROCKs (Retrieval of Core Knowledge) where they ask children questions on identified knowledge from previous units to:

- ensure that children's learning and understanding is fully secure,
- that children are regularly retrieving and refreshing what they have learnt,
- that any gaps in children's knowledge are closed.

Children's progress is monitored against National Curriculum expectations, core knowledge and key skills. Judgement is informed through observing children's skills, use of children's books, dialogue, Tapestry, and AFL pieces.

We measure the impact of D&T through the following methods:

- Using ICT, to gather images and videos of the children's learning
- Observing children's creation and exploration process
- Assessing children's design and evaluation process
- Moderation of children's learning in staff meetings, allowing opportunities for dialogue between staff members
- Annual reporting to parents on their child's progress
- Learning Walks
- Interviewing the children about their learning (Pupil Voice)
- Lesson observations
- Book scrutiny
- Ensuring knowledge and progression of skills is being taught