

D and T Scheme of Work – Ashbourne Primary School (Revised 2019)

INTENT (Aims of the National Curriculum)

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.

Key stage 1

- Design functional and appealing products based on design criteria
- Use talking, drawing, templates and mock-ups to share ideas
- Select from and use a range of tools and materials including construction materials, textiles and ingredients.
- Explore and evaluate a range of existing products and their own products
- Build structures and explore how to make them stronger, stiffer and more stable
- Use mechanisms such as levers, sliders, wheels and axles
- Understand where food comes from
- Prepare dishes using the concept of a healthy, balanced diet

Key stage 2

- Research and develop design criteria to design functional, appealing products which are fit for purpose
- Communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design
- select from and use a range of tools and equipment to perform practical tasks, such as cutting, shaping, joining and finishing, accurately
- select from and use a range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.
- 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
- understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages.
- understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors.
- apply their understanding of computing to programme, monitor and control their products.
- 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.

Extra-curricular opportunities for children to develop talents and interest.

Gardening club

Coding club

Year 1 and 2

National Curriculum	Skills and Knowledge (Milestones)	Further detail
Food	<ul style="list-style-type: none"> • Cut, peel or grate ingredients safely and hygienically. • Prepare food, following a simple recipe • Understand what makes a healthy, balanced diet 	<p>Look at food labels to determine origin Investigate how our food grows Link: Science</p> <p>Encourage use of seasonal food.</p>
Materials/ Construction	<ul style="list-style-type: none"> • Cut materials safely. • Measure and mark accurately • Select tools and materials to cut, shape and join • Explore how to make structures stronger, stiffer and more stable • Build structures to a design 	<p>Link with maths – practical measuring [eg tearing, cutting, folding and curling].</p> <p>[eg gluing, hinges or combining materials to strengthen]</p>
Textiles	<ul style="list-style-type: none"> • Shape and cut textiles using templates. • Join textiles using running stitch. • Finish and decorate textile products using a number of techniques 	<p>Link with literacy – glove puppets</p> <p>[eg gluing, dyeing, sequins, felt]</p>
Mechanics	<ul style="list-style-type: none"> • Create products using mechanisms. 	<p>[eg levers, sliders, wheels, axles]</p>
Design, make, evaluate and improve	<ul style="list-style-type: none"> • Explore how products have been created • Design products that have a clear purpose and an intended user. • Plan and make products, including a mock-up • Evaluate their products against design criteria 	<p>Plan by suggesting what to do next</p> <p>Explain their choices and changes</p>

National Curriculum	Skills and Knowledge	Further detail
Food	<ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients using a range of techniques • Know how ingredients are grown/reared/caught 	<p>Control the temperature of the oven or hob, if cooking.</p> <p>(Eg baking, frying)</p>
Materials/Construction	<ul style="list-style-type: none"> • Cut and join materials accurately and safely by choosing suitable tools and techniques • Measure and mark out to the nearest ½ cm • Choose suitable materials/components according to their functional properties • Strengthen materials using suitable techniques 	<p>Explain their choice of tools and equipment in relation to the skills and techniques they'll be using</p>
Textiles	<ul style="list-style-type: none"> • Join textiles with appropriate stitching. • Choose textiles according to aesthetic qualities 	
Electronics and electricals	<ul style="list-style-type: none"> • Construct simple circuits • Use electrical systems in products 	<p>Link Science bulbs/buzzers etc)</p>
Design, make, evaluate, improve	<ul style="list-style-type: none"> • Design functional, appealing products • Use sketches and diagrams to communicate ideas • Refine work and techniques as work progresses, • Evaluate ideas and products and consider the views of others to improve 	<p>Order the stages of the making process.</p>
Take inspiration from design through history	<ul style="list-style-type: none"> • Study the work of some great designers to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work. 	

National Curriculum	Skills and Knowledge	Further detail
Food	<ul style="list-style-type: none"> • Understand the principles of a healthy, varied diet. • Use recipes, including scaling quantities up or down • Prepare and cook using a range of cooking techniques • Understand seasonality • Know where ingredients come from and how they are processed 	Link: Science Link Maths (ratio) (eg baking, stewing, assembling) Calendar of vegetable growing Link RE Fairtrade
Materials/Construction	<ul style="list-style-type: none"> • Cut materials with precision and refine the finish with appropriate tools . • Select and use a range of materials/components according to functional and aesthetic qualities • Choose suitable tools and equipment • Develop practical skills in construction 	(eg sanding wood after cutting, more precise scissor cut) (eg drilling, glueing, cutting etc)
Computing	<ul style="list-style-type: none"> • Write code to control and monitor models or products. 	
Mechanics	<ul style="list-style-type: none"> • Recognise that some mechanisms allow a smaller force to have a greater effect • Use mechanical systems in their products 	Link Science (eg gears, pulleys, cams, levers, linkages)
Design/make/improve/evaluate	<ul style="list-style-type: none"> • Design, with the user in mind, products fit for purpose • Make products through stages of prototypes, making continual refinements. • Use prototypes, cross-sectional diagrams and computer aided designs to communicate designs. • Determine design criteria and evaluate products against them 	Create their own list of tools, equipment and materials that they need. Create step-by-step plans to inform their making process..
Taking inspiration from design through history	<ul style="list-style-type: none"> • Investigate and analyse existing products • Study key events and individuals to inspire designs • Understand how design and technology have helped shape the world 	

General resources:

Large wooden cupboard at the back of the “music room”

wood, card, sewing equipment, examples of mechanisms

Old wooden cupboard in “music room”

Tool boxes with hacksaws, drills, glue guns, bench hooks