Ashbourne Primary School's
Design and Technology Scheme Of Work with skills and knowledge progression

Intent:

Design and Technology at Ashbourne Primary School inspires pupils to be resourceful, enterprising and imaginative. Through practical experiences, they develop the knowledge and skills needed to design, create, evaluate and improve purposeful products, preparing them to solve real-world problems with confidence and creativity.

Our curriculum is built upon our Golden Threads of Language and Literacy, Resilience and Regulation, and Belonging and Becoming, which underpin all teaching, learning and relationships across our school and ensure pupils develop secure knowledge alongside confidence, aspiration and readiness for life beyond school.

Our PRAISE aims bring these expectations to life in daily practice by teaching pupils to take pride in their work, show respect for all, act with kindness, become independent achievers, stay resilient and demonstrate excellent behaviour. These shared expectations shape how pupils approach learning, relationships and challenges, helping them develop confidence, responsibility and positive attitudes that support success across the curriculum and beyond.

Pupils participate in projects that take them through the full design process, from initial ideas to creation, testing and modification. They develop practical skills, learn to take risks, embrace mistakes and solve problems thoughtfully. The curriculum equips pupils with the knowledge and skills necessary to design and make products with clear purpose and relevance.

The curriculum is carefully planned and sequenced over a two-year cycle across Key Stage 1, Lower Key Stage 2 and Upper Key Stage 2. Pupils first develop foundational knowledge and skills in design and technology concepts. They then deepen their understanding and apply what they have learned across a range of projects and contexts. This approach reflects our understanding that learning is secured when knowledge is stored in long-term memory, which requires time, practice and revisiting.

High expectations for all pupils are central to our curriculum. Teaching is adapted to remove barriers and ensure that every learner can access, participate in and succeed.

By the time pupils leave our school, they are equipped with the knowledge, skills and confidence to continue learning successfully at the next stage of their education and beyond.

National Curriculum Aims

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.

KS1 Content	KS2 Content
• 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.	• 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. • Apply understanding of how to strengthen, stiffen and reinforce structures.

• Explore and use mechanisms [such as levers, sliders, wheels and axles] . • Understand where food comes from. • Prepare dishes using the concept of a healthy, balanced diet.	• 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.

EYFS:

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. The aim of this document is to help subject leaders to understand how the skills taught across EYFS feed into national curriculum subjects.

This document demonstrates which statements from the 2020 Development Matters are prerequisite skills for DT within the national curriculum. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for DT.

The most relevant statements for DT are taken from the following areas of learning:

- Physical Development
- Expressive Arts and Design

3–4-year-olds	Personal, Social and Emotional development	• Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.
	Physical Development	• Use large-muscle movements to wave flags and streamers, paint and make marks. • Choose the right resources to carry out their own plan. • Use one-handed tools and equipment, for example, making snips in paper with scissors.
	Understanding the World	• Explore how things work •
	Expressive Arts and Design	• Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Explore different materials freely, in order to develop their ideas about how to use them and what to make. • Develop their own ideas and then decide which materials to use to express them. • Create closed shapes with continuous lines, and begin to use these shapes to represent objects.
Reception	Physical development	• Progress towards a more fluent style of moving, with developing control and grace. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.
	Expressive Arts and Design	• Explore, use and refine a variety of artistic effects to express their ideas and feelings.

			• Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively, sharing ideas, resources and skills
ELG	Physical Development	Fine motor skills	• Use a range of small tools, including scissors, paintbrushes and cutlery.
	Expressive Arts and Design	Creating with Materials	• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used.

Design and Technology skills and knowledge progression from Y1-Y6

Year Group	Food	Materials/Construction	Textiles	Mechanics	Design, make, evaluate, improve	KEY VOCABULARY
KS1 **Year 1**	- I can cut ingredients safely - I can follow a simple recipe - I can say which foods we can eat frequently and which we should eat in moderation	- I can begin to cut my own materials - I can mark materials for cutting - I can select materials to cut and tear - I can explore how to make materials stronger - I can build a simple structure	- I can cut textiles using a template - I can join textiles using glue - I can add detail to a textile product using glue	- I can create a product using a simple lever based on an example	- I can explore how products have been created - I can design products that have a clear purpose and an intended user - I can plan my design - I can make a product - I can evaluate my product	Ingredients Safe Hygienic Recipe Healthy Materials Cut Tear Strength Structure Mechanism Lever Design Plan Make Evaluate
	Food	**Materials/Construction**	**Textiles**	**Mechanics**	**Design, make, evaluate, improve**	**KEY VOCABULARY**
KS1 **Year 2**	- I can cut, peel and grate ingredients safely - I can follow a simple recipe - I can explain what makes a healthy, balanced diet - I can name	- I can cut materials safely - I can measure and mark materials - I can cut, shape and join different materials - I can explore how to make structures more stable - I can build	- I can shape and cut textiles using templates I have made - I can join textiles using glue or sewing - I can add detail to a textile product using glue or paint	- I can design a product that involves a lever - I can create a product using a lever	- I can explore how products have been created - I can design products that have a clear purpose and an intended user - I can plan my design - I can make a product - I can evaluate my product	Ingredients Safe Hygienic Recipe Healthy Balanced Food groups Materials Cut Shape Join Strength

	some food groups	structures to a design				Stability Structure Mechanism Lever Design Plan Make Evaluate

	Food	Materials/ Construction	Electronics and electricals	Design, make, evaluate, improve	Take inspiration from design through history	KEY VOCABULARY
LWKS2 **Year 3**	- I can prepare ingredients using appropriate utensils - I can measure ingredients accurately - I can follow a recipe - I can use a variety of cooking techniques e.g. baking, frying	- I can cut and join materials accurately by selecting appropriate tools and techniques - I can measure and mark to the nearest ½ cm - I can choose materials based on their properties and explain my choices - I can strengthen materials using a variety of techniques, e.g. folding, combining		- I can design products with a function and user in mind - I can use sketches to communicate ideas - I can make a product - I can edit and improve my design - I can evaluate my product	- I can name a designer - I can use the work of a designer to generate ideas for my own design - I can disassemble an existing design to understand how it works	Ingredients Accurate Utensils Recipe Processed Mark out Function Three dimensional Corrugated Adhesive

	Food	Materials/ Construction	Electronics and electricals	Design, make, evaluate, improve	Take inspiration from design through history	KEY VOCABULARY
LWKS2 **Year 4**	- I can select and use ingredients and utensils for what I am making - I can measure to the nearest gram accurately - I can create a recipe - I can control the cooking temperature of an oven or hob - I can explain how ingredients are grown, reared or		- I can construct simple circuits - I can use electrical systems in products	- I can design functional, appealing products - I can use sketches and diagrams to communicate my ideas - I can make a product, refining work and techniques as my work progresses - I can evaluate my ideas and products - I can consider the views of others to improve	- I can name a range of designers throughout history and explain their designs - I can disassemble products to understand how they work and how they can be improved - I can improve upon existing designs, giving reasons for my choices	Ingredients Utensils Nearest gram Recipe Temperature Production Harvested Reared Caught Adapt Tools Nearest ½ cm Series Circuit Insulator

	caught					Conductor Parallel Input Resistor Function Diagram Refine Evaluate Designer
	Food	**Materials/Construction**	**Mechanics**	**Design, make, evaluate, improve**	**Take inspiration from design through history**	**KEY VOCABULARY**
UPKS2 **Year 5**	- I can explain the principle of a healthy, varied diet - I can use and create recipes for a healthy meal - I can prepare and cook a meal (e.g. baking, assembling) - I can explain where ingredients come from and how they are processed	- I can cut materials precisely and refine the finish with appropriate tools (e.g. sanding wood) - I can select materials and explain my choices based on aesthetic as well as functional properties - I can select and use more complex tools and techniques (e.g. drilling), explaining my choices		- I can design a product with a purpose and user in mind - I can make a prototype - I can use cross-sectional and exploded diagrams to communicate ideas - I can make a product fit for purpose - I can refine my product as I go along - I can evaluate my product against design criteria	- I can investigate and analyse existing products - I can name key individuals from the world of design	Healthy Varied Processed Baking Assembling Cooking process Temperature Precision Refine Aesthetic Function Frame Stability Product User Purpose Prototype Cross-section Exploded diagram Design criteria
	Food	**Materials/Construction**	**Mechanics**	**Design, make, evaluate, improve**	**Take inspiration from design through history**	**KEY VOCABULARY**
UPKS2 **Year 6**	- I can explain the different food groups and their roles - I can use and create recipes, including scaling quantities up or down - I can prepare and cook a meal (e.g.		- I can recognise that some mechanisms allow a smaller force to have a greater effect - I can use mechanical systems in my	- I can design a product with a purpose and user in mind - I can make a series of prototypes, making continual refinements - I can use cross-sectional diagrams and computer aided design to communicate ideas - I can determine design criteria	- I can investigate, analyse and evaluate existing products, suggesting improvement - I can study key events and individuals to inspire my designs - I can understand how	Healthy Carbohydrate Fat Protein Vitamins Minerals Seasonality Scaling Mechanism Gear

	baking, stewing, boiling or frying) - I can understand the seasonality of food		products (e.g. gears, pulleys, levers, cams)	- I can evaluate my product against my own design criteria	design and technology have helped shape the world.	Pulley Cam Lever Force Prototype Refine Cross-section Computer Aided Design Design criteria

Impact:

We assess the impact of our curriculum by checking that our children know more and remember more. Teachers ensure pupils regularly revisit prior learning over time. This ensures learning is embedded into pupils' long-term memory. Teachers and leaders monitor the impact of the curriculum through:

- Key questioning
- Observations within lessons
- Outcomes from tasks/topics
- Flashback Friday
- Flashback 4
- Lesson quizzes
- Pupil voice
- Learning walks
- Curriculum monitoring
- Data analysis