Subject: Design and Technology

Winscombe Primary School

Skills & Knowledge Progression Map

Level Expected at the End of EYFS

We have selected the Early Learning Goals that link most closely to the Design and Technology National Curriculum

Expressive Arts and Design (Exploring and using media and materials)
Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Expressive Arts and Design (Being Imaginative)
Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.

Level Expected at the End of KS1 and KS2

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
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. Cooking and Nutrition	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 Cooking and Nutrition • 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

• use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.	• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

The Design and Technology curriculum progression maps comprehensively show the progression of Design Technology and concepts from Reception to Year 6.

Progression of Skills

Key Skills	EYFS Reception ELG	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing		Across KS1 pupils should:		Across KS2 pupils should:			
Understanding contexts, users and purposes	Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate	work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment • state what products they are designing and making • say whether their products are for themselves or other users • describe what their products are for • say how their products will work • say how they will make their products suitable for their intended users • use simple design criteria to help develop their ideas		• work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment • describe the purpose of their products • indicate the design features of their products that will appeal to intended users • explain how particular parts of their products work			
				In early KS2 pupils should also: • gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use these to inform their ideas		In late KS2 pupils should also: • carry out research, using surveys, interviews, questionnaires and web-based resources • identify the needs, wants, preferences and values of particular individuals and groups • develop a simple design specification to guide their thinking	
Generating, developing, modelling and communicating ideas	Be confident to try new activities and show independence, resilience and perseverance in the face of challenge; Use a range of small tools, including scissors, paint	generate ideas by drawing on their own experiences • use knowledge of existing products to help come up with ideas • develop and communicate ideas by talking and drawing • model ideas by exploring materials, components and construction kits and by making templates and mock-ups		share and clarify ideas through discussion • model their ideas using prototypes and pattern pieces • use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • use computer-aided design to develop and communicate their ideas			
				In early KS2 pupils should also: generate realistic ideas, focusing on the needs of the user		In late KS2 pupils should also: generate innovative ideas, drawing on research	

	brushes and cutlery; • Begin to show accuracy and care when drawing.	• use information and communication technology, where appropriate, to develop and communicate their ideas	• make design decisions that take account of the availability of resources	• make design decisions, taking account of constraints such as time, resources and cost
Making		Across KS1 pupils should:	Across KS2 pupils should:	
Planning	Make comments about what they have heard and ask questions to clarify their understanding; • Hold conversation when engaged in back-and-forth exchanges with their teacher and peers. • Begin to show accuracy and care when drawing. • Share their creations, explaining the process they have used; •	• plan by suggesting what to do next • select from a range of tools and equipment, explaining their choices • select from a range of materials and components according to their characteristics	• select tools and equipment suitable for the task • explain their choice of tools and equipment in relation to the skills and techniques they will be using • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities	
			In early KS2 pupils should also: • order the main stages of making	In late KS2 pupils should also: • produce appropriate lists of tools, equipment and materials that they need • formulate step-by-step plans as a guide to making
Practical skills and techniques	Use a range of small tools, including scissors, paint brushes and cutlery; • Begin to show accuracy and care when drawing. 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; • Make use of props and materials when role playing characters in	• follow procedures for safety and hygiene • use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design	follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components	
			In early KS2 pupils should also: measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy	In late KS2 pupils should also: accurately measure, mark out, cut and shape materials and components • accurately assemble, join and combine materials and components • accurately apply a range of finishing techniques, including those from art and design • use techniques that involve a number of steps • demonstrate resourcefulness when tackling practical problems

	narratives and stories.			
Evaluating		Across KS1 pupils should:	Across KS2 pupils should:	
Own ideas and products	Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate 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;	talk about their design ideas and what they are making • make simple judgements about their products and ideas against design criteria • suggest how their products could be improved	identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work	
			In early KS2 pupils should also: refer to their design criteria as they design and make • use their design criteria to evaluate their completed products	In late KS2 pupils should also: critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • evaluate their ideas and products against their original design specification
Existing products	Make comments about what they have heard and ask questions to clarify their understanding; • Hold conversation when engaged in back-and-forth exchanges with their teacher and peers. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function;	pupils should explore: • what products are • who products are for • what products are for • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products	pupils should investigate and analyse: • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes • how well products meet user needs and wants	
			In early KS2 pupils also investigate and analyse: • who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused	In late KS2 pupils should also investigate and analyse: • how much products cost to make • how innovative products are • how sustainable the materials in products are • what impact products have beyond their intended purpose

Key events and individuals	Make comments about what they have heard and ask questions to clarify their understanding; • Hold conversation when engaged in back-and-forth exchanges with their teacher and peers. Talk about the lives of the people around them and their roles in society;	Not a requirement in KS1	Pupils should know: • about inventors, designers, engineers, chefs and manufacturers who have developed groundbreaking products	
Technical knowledge		Across KS1 pupils should know:	Across KS2 pupils should know:	
Making products work	Be confident to try new activities and show independence, resilience and perseverance in the face of challenge; Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate Use a range of small tools, including scissors, paint brushes and cutlery; • Share their creations, explaining the process they have used;	about the simple working characteristics of materials and components • about the movement of simple mechanisms such as levers, sliders, wheels and axles • how freestanding structures can be made stronger, stiffer and more stable • that a 3-D textiles product can be assembled from two identical fabric shapes • that food ingredients should be combined according to their sensory characteristics • the correct technical vocabulary for the project	• how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics • that mechanical and electrical systems have an input, process and output • the correct technical vocabulary for the projects they are undertaking	
			In early KS2 pupils should also know: • how mechanical systems such as levers and linkages or pneumatic systems create movement • how simple electrical circuits and components can be used to create functional products • how to program a computer to control their products • how to make strong, stiff shell structures • that a single fabric shape can be used to make a 3D textiles product • that food ingredients can be fresh, pre-cooked and processed	In late KS2 pupils should also know: • how mechanical systems such as cams or pulleys or gears create movement • how more complex electrical circuits and components can be used to create functional products • how to program a computer to monitor changes in the environment and control their products • how to reinforce and strengthen a 3D framework • that a 3D textiles product can be made from a combination of fabric shapes • that a recipe can be adapted by adding or substituting one or more ingredients
Cooking and Nutrition		Across KS1 pupils should know:	Across KS2 pupils should know:	
Where food comes from	Offer explanations for why things might happen, making use	that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught	that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world	
				In late KS2 pupils should also know:

	of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps. Explore the natural world around them, making observations and drawing pictures of animals and plants; • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.			• that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking
Food preparation, cooking and nutrition	Manage their own basic hygiene and personal needs, including dressing,	how to name and sort foods into the five groups in the Eatwell Guide • that everyone should eat at least five portions of fruit and vegetables every day	• how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	

	going to the toilet, and understanding the importance of healthy food choices. Use a range of small tools, including scissors, paint brushes and cutlery; Safely use and explore a variety of materials, tools and techniques, • Share their creations, explaining the process they have used;	• how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating	In early KS2 pupils should also know: • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the Eatwell Guide • that to be active and healthy, food and drink are needed to provide energy for the body	In late KS2 pupils should also know: • that recipes can be adapted to change the appearance, taste, texture and aroma • that different food and drink contain different substances – nutrients, water and fibre – that are needed for health

Coverage of Knowledge - EYFS – KS2

Each unit of work focuses on key Design and Technology skills, as well as teaching the knowledge needed to develop an increasingly secure understanding of Design and Technology across the ages. Units are sequenced in a way to help develop and build upon prior learning.

Design Technology in EYFS and Key Stage One

Year Group	Term 2 Project 1	Term 4 Project 2	Term 6 Project 3
EYFS	Mechanisms	Textiles	Structures
	Christmas cards / boxes Context: Christmas	**Superhero Cape** Context: Superheroes	**Recycling Bins** Context: ECO Link
Yellow Class	Structures	Food Technology	Textiles
	Whose House? Context: History	**Fruit Salad** Context: Handa's Surprise	**Joining and Fastening Fabrics** Context: Fabric Fish
Blue Class	Mechanisms	Structures	Mechanisms
	Sliders / Levers Context: Christmas Cards	**Free Standing Structures** Context: Brunel	**Wheels and Axels** Context: Farm Habitat

Design Technology in Key Stage Two

Year Group	Term 2 Project 1	Term 4 Project 2	Term 6 Project 3
Year 3	**Structures**	**Textiles**	**Mechanical Systems**
	Shell Structures - CAD Context: Christmas	**2D to 3D** Context: Roman Purse	**Levers and Linkages** Context: Rainforest Posters
Year 4	**Electrical Systems**	**Food Technology**	**Mechanical Systems**
	Simple Circuits and Switches Context: Electricity	**Healthy and Varied Diet** Context: Tudor Food	**Pneumatics** Context: Making Mascots
Year 5	**Mechanical Systems**	**Food Technology**	**Textiles**
	Pulleys of Gears Context: Space Buggy	**Culture and Seasonality** Context: Greek Food	**Combining Different Fabric Shapes** Context: Vikings
Year 6	**Mechanical Systems**	**Textiles**	**Structures**
	CAMS Context: Victorian Child's Toy	**CAD** Context: Mobile Phone Carrier	**Frames** Context: Shelter