Offwell C of E Primary School Design Technology Curriculum Progression Map

EYFS – KS1 – KS2

Concept/ Strand	Sub-strand	EYFS – pre-requisite skills			Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
		3-4 Year olds	Reception	ELG	Across Ks1 pupils should:	In early KS2 (Year 3 and 4) pupils should:	In late KS2 (Year 5 and 6) pupils should:
Designing	Understanding contexts, users and purposes	Explore how things work. (UW)	Explore, use and refine a variety of artistic effects to express their ideas and feelings. (EA&D)		work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment	gather information about the needs and wants of particular individuals and groups	carry out research, using surveys, interviews, questionnaires and web-based resources
					state what products they are designing and making		identify the needs, wants, preferences and values of particular individuals and groups
		Create closed shapes with continuous lines, and begin to use these shapes to represent objects. (EA&D)			say whether their products are for themselves or other users	develop their own design criteria and use these to inform their ideas	develop a simple design specification to guide their thinking
					describe what their products are for		
					say how their products will work	**Across Ks2 pupil should:** work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment	
					say how they will make their products suitable for their intended users	describe the purpose of their products	
						indicate the design features of their products that will appeal to intended users	
					use simple design criteria to help develop their ideas	explain how particular parts of their products work	
	Generating, developing, modelling	Develop their own ideas and then decide which materials to use to express them. (EA&D)			generate ideas by drawing on their own experiences	generate realistic ideas, focusing on the needs of the user	generate innovative ideas, drawing on research
					use knowledge of existing products to help come up with 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
					develop and communicate ideas by talking and drawing	**Across Ks2 pupil should:** share and clarify ideas through discussion	
					model ideas by exploring materials, components and construction kits and by making templates and mock ups	model their ideas using prototypes and pattern pieces	
						use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas	
					use information and communication technology, where appropriate, to develop and communicate their ideas	use computer-aided design to develop and communicate their ideas	
Making	Planning	Choose the right resources to carry out their own plan. (PD)	Progress towards a more fluent style of moving, with developing		plan by suggesting what to do next	order the main stages of making	produce appropriate lists of tools, equipment and materials that they need
					select from a range of tools and equipment, explaining their choices		formulate step-by-step plans as a guide to making

			control and grace. (PD)		select from a range of materials and components according to their characteristics	**Across Ks2 pupil should:** select tools and equipment suitable for the task	
		Use one-handed tools and equipment, for example, making snips in paper with scissors. (PD)	Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (PD)			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	
	Practical skills and techniques	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.		Use a range of small tools, including scissors, paintbrushes and cutlery. (PD) (Fine Motor Skills)	follow procedures for safety and hygiene	measure, mark out, cut and shape materials and components with some accuracy	accurately measure, mark out, cut and shape materials and components
		Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. (EA&D)		Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. (EA&D) (Creating with materials)	use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components	assemble, join and combine materials and components with some accuracy	accurately assemble, join and combine materials and components
							accurately apply a range of finishing techniques, including those from art and design
					measure, mark out, cut and shape materials and components	apply a range of finishing techniques, including those from art and design, with some accuracy	use techniques that involve a number of steps
		Use large-muscle movements to wave flags and streamers, paint and make marks.			assemble, join and combine materials and components		demonstrate resourcefulness when tackling practical problems
					use finishing techniques, including those from art and design	**Across Ks2 pupil should:** 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	
Evaluating	**Own ideas and products**	Explore different materials freely, in order to develop their ideas about how to use them and what to make. (EA&D)	Create collaboratively, sharing ideas, resources and skills. (EA&D)	Share their creations, explaining the process they have used. (EA&D) (Creating with materials)	talk about their design ideas and what they are making	refer to their design criteria as they design and make	critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make
					make simple judgements about their products and ideas against design criteria	use their design criteria to evaluate their completed products	evaluate their ideas and products against their original design specification
					suggest how their products could be improved	**Across Ks2 pupil should:** identify the strengths and areas for development in their ideas and products	
						consider the views of others, including intended users, to improve their work	
	Ex				explore what products are	**In early KS2 pupils should investigate**	**In late KS2 pupils should also**

					explore who products are for	**and analyse:**	**investigate and analyse:**
					explore what products are for	who designed and made the products	how much products cost to make
					explore how products work	where products were designed and made	how innovative products are
					explore how products are used	when products were designed and made	how sustainable the materials in products are
					explore where products might be used	whether products can be recycled or reused	what impact products have beyond their intended purpose
					explore what materials products are made from	**Across KS2 pupils should investigate and analyse:** how well products have been designed	
					explore what they like and dislike about products	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	
	Key events					**Across KS2 pupils should know:** about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	
Technical Knowledge	**Making products work**		Return to and build on their previous learning, refining ideas and developing their ability to represent them. (EA&D)		know about the simple working characteristics of materials and components	how mechanical systems such as levers and linkages or pneumatic systems create movement	how mechanical systems such as cams or pulleys or gears create movement
					know about the movement of simple mechanisms such as levers, sliders, wheels and axles	how simple electrical circuits and components can be used to create functional products	how more complex electrical circuits and components can be used to create functional products
					know how freestanding structures can be made stronger, stiffer and more stable	how to program a computer to control their products	how to program a computer to monitor changes in the environment and control their products
					know that a 3-D textiles product can be assembled from two identical fabric shapes	how to make strong, stiff shell structures	how to reinforce and strengthen a 3D framework
					know that food ingredients should be combined according to their sensory characteristics	that a single fabric shape can be used to make a 3D textiles product	that a 3D textiles product can be made from a combination of fabric shapes
					know the correct technical vocabulary for the projects they are undertaking	that food ingredients can be fresh, pre-cooked and processed	that a recipe can be adapted by adding or substituting one or more ingredients
						Across KS2 pupils should know: 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	

Cooking and Nutrition	**Where food comes**				that all food comes from plants or animals		that seasons may affect the food available
					that food has to be farmed, grown elsewhere (e.g. home) or caught		how food is processed into ingredients that can be eaten or used in cooking
						Across KS2 pupils should know: 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	
	Food preparation, cooking and				how to name and sort foods into the five groups in The eatwell plate	that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate	that recipes can be adapted to change the appearance, taste, texture and aroma
					that everyone should eat at least five portions of fruit and vegetables every day	that to be active and healthy, food and drink are needed to provide energy for the body	that different food and drink contain different substances – nutrients, water and fibre – that are needed for health
					how to prepare simple dishes safely and hygienically, without using a heat source	**Across KS2 pupils should know:** 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 techniques such as cutting, peeling and grating	how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	