

<u>Subject: Design and Technology at Denton CP School</u> <u>Statement of Intention</u>

At Denton CP School Design and technology is an inspiring, rigorous and practical subject using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

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.

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study

• <u>Aims</u>: Children will leave Denton CP School with the skills to design and make products that solve real and relevant problems. They take risks and are resourceful, innovative, enterprising and capable citizens. They have a critical understanding of the impact of technology on daily life and the wider world.



Denton CP School

Design and Technology Skills Progression Map

Skills	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Begin to draw on their	Start to generate	With growing	Start to generate ideas,	Start to generate,	Generate, develop,
Developing,	own experience to help	ideas by drawing on	confidence generate	considering the purposes	develop, model and	model and
planning and	generate ideas and	their own and other	ideas for an item,	for which they are	communicate their	communicate their
communicating	research conducted on	people's experiences.	considering its purpose	designing- link with	ideas through discussion,	ideas through
ideas	criteria.		and the user/s.	Mathematics and	annotated sketches,	discussion, annotated
		Begin to develop their		Science.	cross-sectional and	sketches, cross-sectional
	Begin to understand	design ideas through	Start to order the main		exploded diagrams,	and exploded
	the development of	discussion, observation,	stages of making a	Confidently make	prototypes, pattern	diagrams, prototypes,
	existing products:	drawing and modelling.	product.	labelled drawings from	pieces and CAD.	pattern pieces and
	What they are for, how			different views showing		CAD. (B 5/6)
	they work, materials	Identify a purpose for	Identify a purpose and	specific features.	Begin to use research	
	used.	what they intend to	establish criteria for a		and develop design	Use research and
		design and make.	successful product.	Develop a clear idea of	criteria to inform the	develop design
	Start to suggest ideas			what has to be done,	design of innovative,	criteria to inform the
	and explain what they	Understand how to	Understand how well	planning how to use	functional, appealing	design of innovative,
	are going to do.	identify a target group	products have been	materials, equipment	products that are fit for	functional, appealing
		for what they intend	designed, made, what	and processes, and	purpose.	products that are fit
	Understand how to	to design and make	materials have been	suggesting alternative		for purpose. (B 5/6)
	identify a target group	based on a design	used and the construction	methods of making, if	With growing	
	for what they intend to	criteria.	technique.	the first attempts fail.	confidence apply a	Accurately apply a
	design and make		1		range of finishing	range of finishing
	based on a design	Develop their ideas	Learn about inventors,	Identify the strengths and	techniques, including	techniques, including
	criteria.	through talk and	designers, engineers,	areas for development in	those from art and	those from art and
	De sin te develor their	drawings and label	chefs and manufacturers	their ideas and products.	design.	design.
	Begin to develop their	parts.	who have developed	W/la a ra ra la ra a in a ra a a ra i al a r	Duran	Drawer
	ideas through talk and drawings. Make	Make templates	ground-breaking products.	When planning consider the views of others,	Draw up a specification for their design- link with	Draw up a
	templates and mock	and mock ups of their	products.	including intended users,	Mathematics and	specification for their design- link with
	ups of their ideas in	ideas in card and	Start to understand	to improve their work.	Science.	Mathematics and
	card and paper or	paper or using ICT.	whether products can	io improve meli work.	science.	Science.
		paper or using ict.		Loarn about inventors	Uso regults of	science.
	Using ici.	(R5/4 All of above)	,			Plan the order of their
		(B3/6 - All OI above)				
			Whom dosigning.			
			When planning explain	o o		
				products.	14043.	
				When planning explain	With growing	
	using ICT.	(B5/6 – All of above)	be recycled or reused. Know to make drawings with labels when designing. When planning explain their choice of materials and components	Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. When planning explain	Use results of investigations, information sources, including ICT when developing design ideas. With growing	Plan the order of their work, choosing appropriate materials, tools and techniques. Suggest alternative methods of making if the first attempts fail.



			including function and aesthetics.	their choice of materials and components according to function and aesthetic.	confidence select appropriate materials, tools and techniques. Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.	Identify the strengths and areas for development in their ideas and products. Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.
Working with tools, equipment, materials and components to make quality products	Begin to make their design using appropriate techniques. Begin to 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. With help measure, mark out, cut and shape a range of materials. Explore using tools e.g. scissors and a hole punch safely. Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. Begin to use simple finishing techniques to improve the	Begin to select tools and materials; use correct vocabulary to name and describe them. (B5/6) Build structures, exploring how they can be made stronger, stiffer and more stable. With help measure, cut and score with some accuracy. Learn to use hand tools safely and appropriately. Start to assemble, join and combine materials in order to make a product. Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques. Start to choose and use appropriate finishing techniques based on own ideas. (B5/6)	Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Start to understand that mechanical and electrical systems have an input, process and output. Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. Know how simple electrical circuits and components can be used to create functional products.	Select a wider range of tools and techniques for making their product safely. Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. Start to join and combine materials and components accurately in temporary and permanent ways. Know how mechanical systems such as cams or pulleys or gears create movement. Understand how more complex electrical circuits and components can be used to create functional products. Continue to learn how to program a computer to monitor changes in	Select appropriate materials, tools and techniques e.g. 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. Understand how mechanical systems such as cams or pulleys or gears create movement. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Understand that mechanical and electrical systems have an input, process and output.	Confidently select appropriate tools, materials, components and techniques and use them. (B 5/6) Use tools safely and accurately. Assemble components to make working models. Aim to make and to achieve a quality product. With confidence pin, sew and stitch materials together to create a product. Demonstrate when make modifications as they go along. Construct products using permanent joining techniques. (B 5/6) Understand how mechanical systems such as cams or pulleys or gears create movement.



	appearance of their		Measure, mark out, cut,	control their products.	Begin to measure and	Know how more
	product.		score and assemble		mark out more	complex electrical
			components with more	Understand how to	accurately.	circuits and
			accuracy.	reinforce and		components can be
				strengthen a 3D	Demonstrate how to use	used to create
			Start to work safely and	framework. Now sew	skills in using different tools	functional products and
			accurately with a range of simple tools.	using a range of different stitches, to	and equipment safely and accurately With	how to program a computer to monitor
			of simple tools.	weave and knit.	growing confidence cut	changes in the
			Start to think about their	weave and killi.	and join with accuracy to	environment and
			ideas as they make	Demonstrate how to	ensure a good-quality	control their products.
			progress and be willing	measure, tape or pin,	finish to the product.	·
			to change things if this	cut and join fabric with		Know how to reinforce
			helps them to improve	some accuracy.	Weigh and measure	and strengthen a 3D
			their work.		accurately (time, dry	framework.
			Start to magazine terre	Begin to use finishing	ingredients, and liquids).	Understand that
			Start to measure, tape or pin, cut and join fabric	techniques to strengthen and improve	Use finishing techniques to	Understand that mechanical and
			with some accuracy.	the appearance of their	strengthen and improve	electrical systems have
			wiiii some accoracy.	product using a range	the appearance of their	an input, process and
				of equipment including	product using a range of	output.
				ICT.	equipment including ICT.	·
						Use finishing techniques
						to strengthen and
						improve the
						appearance of their
						product using a range of equipment including
						ICT.
	Start to evaluate their	Evaluate their work	Start to evaluate their	Evaluate their products	Start to evaluate a	Evaluate their products,
Evaluating	product by discussing	against their design	product against original	carrying out appropriate	product against the	identifying strengths and
processes a		criteria.	design criteria e.g. how	tests.	original design	areas for development,
products	relation to the purpose	Look at a range of	well it meets its intended		specification and by	and carrying out
	(design criteria).	existing products explain	purpose.	Start to their work both	carrying out tests.	appropriate tests. (B
	When looking at existing	what they like and	Begin to disassemble and	during and at the end of the assignment.	Evaluate their work both	5/6)
	products explain what	dislike about products	evaluate familiar products		during and at the end of	Evaluate their work both
	they like and dislike	and why.	and consider the views of	Be able to disassemble	the assignment.	during and at the end
	about Products and why.	Start to evaluate their	others to improve them.	and evaluate familiar		of the assignment.
		products as they are		products and consider	Begin to evaluate it	
	Begin to evaluate their	developed, identifying strengths and possible	Evaluate the key designs	the views of others to	personally and seek	Record their evaluations
	products as they are	changes they might	of individuals in design	improve them.	evaluation from others.	using drawings with
	developed, identifying strengths and possible	make.	and technology has helped shape the world.	Evaluate the key designs	Evaluate the key designs	labels.
	changes they might	With confidence talk	пырва знаре тте worid.	of individuals in designs	Evaluate the key designs of individuals in design	Evaluate against their
	make.	about their ideas, saying		and technology has	and technology has	original criteria and
		I about their labas, saying		22 .0009, 1100		



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		what they like and dislike about them.		helped shape the world.	helped shape the world.	suggest ways that their product could be
						improved.
		(B5/6 – all of above)				improved.
						Evaluate the key
						designs of individuals in
						design and technology
						has helped shape the
	Begin to understand that	Understand that all food	Start to know that food is		Understand that food is	world. Know that food is grown
Food and	all food comes from	comes from plants or	grown (such as tomatoes,	Understand that food is	grown (such as tomatoes,	(such as tomatoes,
Nutrition	plants or animals.	animals.	wheat and potatoes),	grown (such as tomatoes,	wheat and potatoes),	wheat and potatoes),
	·		reared (such as pigs,	wheat and potatoes), reared (such as pigs,	reared (such as pigs,	reared (such as pigs,
	Explore the	Know that food has to	chickens and cattle) and	chickens and cattle) and	chickens and cattle) and	chickens and cattle)
	understanding that food	be farmed, grown	caught (such as fish) in	caught (such as fish) in	caught (such as fish) in	and caught (such as
	has to be farmed, grown elsewhere (e.g. home) or	elsewhere (e.g. home) or caught.	the UK, Europe and the wider world.	the UK, Europe and the	the UK, Europe and the wider world.	fish) in the UK, Europe and the wider world.
	caught.	or caogin.	wider world.	wider world.	wider world.	and the wider world.
		Understand how to	Understand how to	Understand how to	Begin to understand that	Understand that seasons
	Start to understand how	name and sort foods	prepare and cook a	prepare and cook a	seasons may affect the	may affect the food
	to name and sort foods	into the five groups in	variety of predominantly	variety of predominantly	food available.	available.
	into the five groups in	'The Eat well plate'	savoury dishes safely and	savoury dishes safely and	Understand how food is	Understand how food is
	'The Eat well plate' Begin to understand that	Know that everyone should eat at least five	hygienically including, where appropriate, the	hygienically including,	processed into ingredients	processed into
	everyone should eat at	portions of fruit and	use of a heat source.	where appropriate, the	that can be eaten or	ingredients that can be
	least five portions of fruit	vegetables every day.		use of a heat source.	used in cooking.	eaten or used in
	and vegetables every		Begin to understand how	Know how to use a range		cooking.
	day.	Demonstrate how to	to use a range of	of techniques such as	Know how to prepare and	
	Know how to prepare	prepare simple dishes safely and hygienically,	techniques such as peeling, chopping, slicing,	peeling, chopping, slicing,	cook a variety of predominantly savoury	Know how to prepare and cook a variety of
	simple dishes safely and	without using a heat	grating, mixing,	grating, mixing,	dishes safely and	predominantly savoury
	hygienically, without	source.	spreading, kneading and	spreading, kneading and	hygienically including,	dishes safely and
	using a heat source.		baking.	baking.	where appropriate, the	hygienically including,
	Know how to use	Demonstrate how to use		Know that a healthy diet is	use of a heat source.	where appropriate, the
	techniques such as	techniques such as	Start to understand that a	made up from a variety	Start to understand how	use of a heat source.
	cutting, peeling and grating.	cutting, peeling and grating.	healthy diet is made up from a variety and	and balance of different	to use a range of	Understand how to use
	grainig.	gramig.	balance of different food	food and drink, as	techniques such as	a range of techniques
			and drink, as depicted in	depicted in 'The Eat well	peeling, chopping, slicing,	such as peeling,
			'The Eat well plate'.	plate'	grating, mixing,	chopping, slicing,
				Know that to be active	spreading, kneading and	grating, mixing,
			Begin to know that to be active and healthy, food	and healthy, food and	baking.	spreading, kneading
			and drink are needed to	drink are needed to	Begin to understand that	and baking.
			provide energy for the	provide energy for the	different food and drink	Know different food and
			body.	body.	contain different	drink contain different



			substances – nutrients,	substances – nutrients,
			water and fibre – that are	water and fibre – that
			needed for health.	are needed for health.