

## Witheridge CofE Primary Academy DT Knowledge and Skills Progression Map



Key Stage 1		Lower Key St	age 2	Upper Key St	age 2
Everyday products are objects that are used routinely at home and school, such as a toothbrush, cup or pencil. All products are designed for a specific purpose. Name and	Products can be improved in different ways, such as making them easier to use, more hardwearing or more attractive. Explain how an everyday product could be improved. optional	Particular products have been	Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable. Investigate and identify the design features of a familiar product. covered x 3optional	Culture is the language, inventions, ideas and art of a group of people. A society is all the people in a community or group. Culture affects the design of some products.	People's lives have been improved in countless ways due to new inventions and designs. For example, the Morrison shelter, designed by John Baker in 1941, was an indoor air-raid shelter used in over half a million homes during the Second World War. It saved the lives of many people caught in bombing raids. Analyse how an invention or product has significantly changed or

	things in different cultures. Explain how the design of a product has been influenced by the culture or society in which it was designed or made. covered x 2optional	
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Staying	Rules are	Hygiene	Electrical	Chemicals	Safety	The safety o
safe	made to	rules include	appliances	are used in	features are	the user has
	keep people	washing	must only be	the home	often	to be taken
	safe from	hands	used under	every day.	incorporated	into account
	danger.	before	the	They include	into	when
	Safety rules	handling	supervision	cleaning	products	designing a
	include	food,	of an adult.	products,	that might	new product
	always	cleaning	Safety rules	such as	cause harm.	Methods to
	listening	surfaces,	must also be	bleach and	Some	help keep
	carefully and	tying long	followed	disinfectant,	examples	users safe
	following	hair back,	when using	but also	include the	include
	instructions,	storing food	electricity:	paints,	child-safety	providing
	using	appropriatel	fingers and	glues, oils,	caps on	clear
	equipment	y and wiping	other	pesticides	medicine	instructions
	only as and	up spills.	objects must	and	bottles,	for use;
	when	Work safely	not be put	medicines.	seatbelts in	clear
	directed,	and	into	Most	cars, covers	indication of
	wearing	hygienically	electrical	chemical	for electrical	the age
	protective	in	outlets,	products	sockets and	range for
	clothing if	construction	anything	carry a	finger	which it is
	appropriate	and cooking	with a cord	hazard	guards on	designed;
	and washing	activities.	or plug	symbol	doors.	safety
	hands	optional	should never	showing in	Explain the	features
	before		be used	what way the	functionality	(such as
	touching		around	chemical	and purpose	child-resista
	food. Follow		water and a	could be	of safety	nt
	the rules to		plug should	harmful.	features on a	packaging);
	keep safe		never be	Chemicals	range of	warning
	during a		pulled out by	should only	products.	symbols and
	practical		its cord. Use	be used	optional	electrical
	task.		appliances	under adult		safety
	covered x 2		safely with	supervision.		checks.
			adult	Appropriate		Demonstrat
			supervision.	safety		how their
			covered	precautions,		products
				such as		take into
				wearing		account the
				goggles and		safety of the
				gloves,		user.
				working in a		Assign
				well-ventilat		
				ed room,		
				wiping up		
				spills and		
				tying back		
				long hair,		
				should be		
				taken. Work		

				safely with everyday chemical products under supervision, such as disinfectant hand wash and surface cleaning spray. covered		
Mechanism s and movement	An axle is a rod or spindle that passes through the centre of a wheel to connect two wheels. Use wheels and axles to make a simple moving model. covered	mechanism is a device that takes one type of motion or force and produces a different one. A mechanism makes a job easier to do. Mechanisms include sliders, levers, linkages, gears, pulleys and cams. Use a range of mechanisms (levers, sliders, wheels and axles) in models or products. Assign	Levers consist of a rigid bar that rotates around a fixed point, called a fulcrum. They reduce the amount of work needed to lift a heavy object. Sliders move from side to side or up and down, and are often used to make moving parts in books. Axles are shafts on which wheels can rotate to make a moving vehicle. Cams are devices that can convert circular	functionality to a model. For example, sliders or levers can be used in moving pictures, storybooks or simple puppets; linkages in moving vehicles or puppets; gears in motorised vehicles or spinning toys; pulleys in cable cars	systems use energy that is stored in compressed air to do work, such as inflating a balloon to open a model monster's mouth. These effects can be achieved using syringes and plastic tubing. Use mechanical systems in their products, such as	Mechanical systems can include sliders, levers, linkages, gears, pulleys and cams. Other mechanisms include pneumatics and hydraulics. Explain and use mechanical systems in their products to meet a design brief. Assign

			motion into up-and-dow n motion. Explore and use a range of mechanisms (levers, sliders, axles, wheels and cams) in models or products. covered	gears and pulleys) in models or products. Assign		
Electricity	Electricity is a form of energy. Many household appliances use electricity, such as kettles, televisions and washing machines. They can be switched on by completing the circuit to allow the flow of electricity or off by breaking the circuit to prevent electricity from flowing. This can be a switch on the appliance or a wall socket	A series circuit is made up of an energy source, such as a battery or cell, wires and a bulb. The circuit must be complete for the electricity to flow. Create an operational, simple series circuit. Assign	An electric circuit can be used in a model, such as a lighthouse. It can be controlled using a switch. Incorporate a simple series circuit into a model. Assign	goal. These include bulbs for lighthouses and torches, buzzers for burglar	Electrical circuits can be controlled by a simple on/off switch, or by a variable resistor that can adjust the size of the current in the circuit. Real-life examples are a dimmer switch for lights or volume control on a stereo. Use electrical circuits of increasing complexity in their models or products, showing an understanding of control. Assign	Understand and use

	switch. Identify products that use electricity to make them work and describe how to switch them on and off. Assign					
Generation of ideas	Design criteria are the explicit goals that a project must achieve. Create a design to meet simple design criteria. coveredopti onal x 6	Ideas can be communicat ed in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communicati on technology. Generate and communicat e their ideas through a range of different methods. covered	criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user. Develop design criteria to	Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicat e ideas in a visual, detailed way. Use annotated sketches and exploded diagrams to test and communicat e their ideas. covered x 3 optional x 2	A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-ai ded design packages for designing products. Use pattern pieces and computer-ai ded design packages to design a product. covered x 2	Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicat ed in a range of ways, including through discussion, annotated sketches, cross-sectio nal and exploded diagrams, prototypes, pattern pieces and computer-ai ded design. Develop design criteria for a functional and appealing product that is fit for

						purpose, communicati ng ideas clearly in a range of ways. optional
Structures	Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink. Construct simple structures, models or other products using a range of materials. covered x 16optional	triangular shapes rather than squares. A broader base will	Shell structures are hollow, 3-D structures with a thin outer covering, such as a box. Frame structures are made from thin, rigid components, such as a tent frame. The rigid frame gives the structure shape and support. Diagonal struts can strengthen the structure. Create shell or frame structures using diagonal struts to strengthen them. optional	A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthene d by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to	Various methods can be used to support a framework. These include cross braces, guy ropes and diagonal struts. Frameworks can be built using lolly sticks, skewers and bamboo canes. Build a framework using a range of materials to support mechanisms . Assign	Strength can be added to a framework by using multiple layers. For example, corrugated cardboard can be placed with corrugations running alternately vertically and horizontally. Triangular shapes can be used instead of square shapes because they are more rigid. Frameworks can be further strengthene d by adding an outer cover. Select the most appropriate materials and frameworks for different structures, explaining

				straighten and strengthen them). Prototype shell and frame structures, showing awareness of how to strengthen, stiffen and reinforce them. covered		what makes them strong. covered x 2optional
Use of ICT	Computer-ai ded design is when computers are used to help design products. It has advantages over paper design in that it will show how finished products will look. Different colours and textures can also be trialled. Use design software to create a simple plan for a design. Assign	Computer software can be used to help design or plan a product. Advantages include identifying and solving problems before the product is made and experimentin g with different materials and colours. Labels can be added to designs for clarity. Use design software to create a simple labelled design or plan. Assign	instructions written to perform a specified task on a computer. Write a program to make something move on a tablet or	Remote control is controlling a machine or activity from a distance. Computers can be used to remotely control a device, such as a light, speaker or buzzer. Write a program to control a physical device, such as a light, speaker or buzzer. Assign	controlled by pressing buttons on a control panel, such as on a washing machine or microwave. Link a physical device to a computer or tablet so that	record the resulting information in a table or graph. Use a

Investigation Specific Different Specific **Useful tools** There are Precision is tools are tools have tools can be for cutting important in many rules used for characteristi used for include for using producing a particular cs that make cutting, such scissors, tools safely polished, purposes. them as saws. craft knives. and these finished For example, suitable for Wood can be junior may vary product. scissors are specific joined using hacksaws depending Correct used for glue, nails, with pistol on the tools selection of purposes. cutting and For example, staples, or a grip and being used. tools and bench glue is used scissors are combination For example, careful for sticking. used for of these. hooks. someone measuremen Select the cutting Safety rules Useful tools using a t can ensure appropriate must be for joining chisel paper the parts fit tool for a because followed to include glue should chip together simple or cut with they have prevent guns. Tools correctly. practical sharp, metal should only the cutting Select injury from task. blades that be used with edge sharp appropriate covered x can cut blades. adult pointing tools for a 2optional x 5 through thin These rules task and use supervision away from materials. include their body. them safely and safety Select the rules must All tools and using a appropriate bench hook be followed. should be precisely. cleaned and coveredopti tool for a to keep the Select, name task and onal x 2 wood still, and use put away explain their using a tools with after use, choice. iunior adult and should covered x 4 hacksaw supervision. not be used with a pistol coveredopti if they are grip and onal x 2 loose or working cracked. under adult Name and supervision. select Use tools increasingly safely for appropriate cutting and tools for a joining task and use materials them safely. and covered x components. 2optional x 3 coveredopti onal x 2

				ts. covered x 3optional x 3		
Cutting and joining textiles	Scissors are used to cut fabrics. Glue and simple stitches, such as running stitch, can be used to join fabrics. Running stitch is made by passing a needle in and out of fabric at an even distance. Cut and join textiles using glue and simple stitches. Assign	A running stitch is a basic stitch that is used to join fabric. It is made by passing a needle in and out of fabric at an even distance. Use different methods of joining fabrics, including glue and running stitch. Assign	A loom is a piece of equipment that is used for making fabric by weaving wool or thread. Weaving involves interlacing pieces of thread or yarn. Cut and join wools, threads and other materials to a loom. Assign	A hem runs along the edge of a piece of cloth or clothing. It is made by turning under a raw edge and sewing to give a neat and quality finish. Hand sew a hem or seam using a running stitch.  Assign	A collage is artwork made by sticking materials, such as scraps of paper or fabric, onto a background. A mixed media collage is made using various materials and media, such as ink and paint. Combine stitches and fabrics with imagination to create a mixed media collage. Assign	Pinning with dressmaker pins and tacking with quick, temporary stitches holds fabric together in preparation for and during sewing. Pin and tack fabrics in preparation for sewing and more complex pattern work.  Assign

	Dies 4	<b>5</b> (; 6		Disc. 4		
Materials	Different	Properties of		Different	Materials	It is
for purpose	materials are	components	a specific	materials	should be	important to
	suitable for	and	task must be	and	cut and	understand
	different	materials	selected on	components	combined	the
	purposes,	determine	the basis of	have a range		characteristi
	depending	how they	their	of	precision.	cs of
	on their	can and	properties.	properties,	For example,	
	specific	cannot be	These	making them	pieces of	materials to
	properties.	used. For	include	suitable for	fabric could	select the
	For example,		physical	different	be cut with	most
	glass is	plastic is	properties	tasks. It is	sharp	appropriate
	transparent,	shiny and	as well as	important to		material for
	so it is	strong but it	availability	select the	sewn	a purpose.
	suitable to	can be	and cost.	correct	together	This might
	be used for	difficult to	Plan which	material or	using a	include
	windows.	paint.	materials	component	variety of	flexibility,
	Select and	Choose	will be	for the	stitching	waterproofin
	use a range	appropriate	needed for a	specific	techniques.	g, texture,
	of materials,	components	task and	purpose,	Select and	colour, cost
	beginning to	and	explain why.	depending	combine	and
	explain their	materials	covered x 3	on the	materials	availability.
	choices.	and suggest		design	with	Choose the
	covered x	ways of		criteria.	precision.	best
	7optional x 3	manipulating		Recipe	covered x	materials for
		them to		ingredients	6optional	a task,
		achieve the		have		showing an
		desired		different		understandi
		effect.		tastes and		ng of their
		covered x		appearances		working
		10optional x		. They look		characteristi
		3		and taste better and		cs.
						4optional
				are cheaper		4орионаі
				when in		
				season. Choose from		
				a range of materials,		
				showing an		
				understandi		
				ng of their		
				different		
				characteristi		
				cs.		
				covered x		
				11optional x		
				4		

Decorating and	Fabric can be decorated	Embellishme	A loom weaving is a	Block printing	Applique is a technique	Fastenings hold a piece
embellishing		decorative	piece of	techniques	where	of clothing
textiles	materials	detail or	fabric that	and fabric	pieces of	together.
toxunoo	and small	feature	has been	paint are	material are	Types of
	objects,	added to	woven on a	used to	attached to	fastenings
	such as	something	loom by	create	another	include zips,
	buttons and	to make it	interlacing	decorative,	material by	press studs,
	sequins.	more	threads. An	repeated	stitching or	Velcro and
	Decorations	attractive.	embellishme	patterns on	gluing. Use	buttons. Use
	can be	Add simple	nt is a	fabrics.	applique to	different
	attached to	decorative	decorative	Create	add	methods of
	the fabric by	embellishme	detail or	detailed	decoration	fastening for
	gluing,	nts, such as	feature, such	decorative	to a product	function and
	stapling or	buttons,	as a silk	patterns on	or artwork.	decoration,
	tying. Use	prints,	flower,	fabric using	covered	including
	gluing,	sequins and	tassel or	printing		press studs,
	stapling or	appliqué.	bow, added	techniques.		Velcro and
	tying to	Assign	to	Assign		buttons.
	decorate		something			Assign
	fabric,		to make it			
	including		more			
	buttons and		attractive.			
	sequins.		Decorate a			
	Assign		loom			
			weaving			
			using			
			embellishme			
			nts, such as			
			natural or silk flowers.			
			tassels and			
			bows.			
			Assign			
			Assign			

Food	Using	Some	Preparation	Cooking	Sweet	Ingredients
preparation	non-standar	ingredients	techniques	techniques	dishes are	can usually
and	d measures	need to be	for savoury	include	usually	be bought at
cooking	is a way of	prepared	dishes	baking,	desserts,	supermarket
	measuring	before they	include	boiling,	such as	s, but
	that does	can be	peeling,	frying,	cakes, fruit	specialist
	not involve	cooked or	chopping,	grilling and	pies and	shops may
	reading	eaten. There	deseeding,	roasting.	trifles.	stock
	scales. For	are many	slicing,	Identify and	Savoury	different
	example,	ways to	dicing,	use a range	dishes	items.
	weight may	prepare	grating,	of cooking	usually have	Greengrocer
	be measured	_	mixing and	techniques	a salty or	s sell fruit
	using a	peeling	skinning.	to prepare a	spicy flavour	
	balance	skins using	Prepare and	simple meal	rather than a	vegetables,
	scale and	a vegetable	cook a	or snack.	sweet one.	butchers sell
	lumps of	peeler, such	simple	covered x	Use an	meat,
	plasticine.	as potato	savoury	3optional x 2	_	fishmongers
	Length may	skins;	dish.		range of	sell fresh
	be measured	grating hard	Assign		preparation	fish and
	in the	ingredients,			and cooking	delicatessen
	number of	such as			techniques	s usually sell
	handspans	cheese or			to cook a	some
	or pencils	chocolate;			sweet or	unusual
	laid end to	chopping			savoury	prepared
	end.	vegetables,			dish.	foods, as
	Measure and				covered	well as cold
	weigh food	onions and				meats and
	items using	peppers and				cheeses.
	non-standar	slicing				Follow a
	d measures,	foods, such				recipe that
	such as	as bread and				requires a
	spoons and	apples.				variety of
	cups.	Prepare				techniques
	covered x	ingredients				and source
	3optional	by peeling,				the
		grating,				necessary
		chopping				ingredients
		and slicing.				independentl
		optional				y.
						covered x
						4optional

Nutrition	Fruit and vegetables are an important part of a healthy diet. It is recommende d that people eat at least five portions of fruit and vegetables every day. Select healthy ingredients for a fruit or vegetable salad. covered x 3	, ,	There are five main food groups that should be eaten regularly as part of a balanced diet: fruit and vegetables; carbohydrat es (potatoes, bread, rice and pasta); proteins (beans, pulses, fish, eggs and meat); dairy and alternatives (milk, cheese and yoghurt) and fats (oils and spreads). Foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet. Identify the main food groups (carbohydrat es, protein, dairy, fruits and vegetables, fats and sugars). Assign	containing eggs, meat, fish or cheese, a piece of fresh fruit, a low-sugar yoghurt, rice cake or popcorn and a drink, such as water or semi-skimm	A balanced diet gives your body all the nutrients it needs to function correctly. This means eating a wide variety of foods in the correct proportions. Evaluate meals and consider if they contribute towards a balanced diet. Assign	Eating a balanced diet is a positive lifestyle choice that should be sustained over time. Food that is high in fat, salt or sugar can still be eaten occasionally as part of a balanced diet. Plan a healthy daily diet, justifying why each meal contributes towards a balanced diet. covered
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Origins of	Some foods	Food comes	The types of	Particular	Seasonality	Organic
food	come from	from two	food that will		is the time of	produce is
	animals,	main	grow in a	world have	year when	food that
	such as	sources:	particular	conditions	the harvest	has been
	meat, fish	animals and	area depend	suited to	or flavour of	grown
	and dairy	plants. Cows	_	growing	a type of	without the
	products.	provide beef,	,	certain	food is at its	use of
	Other foods	sheep	such as the	crops, such	best. Buying	man-made
	come from	provide lamb		as coffee in	seasonal	fertilisers,
	plants, such	and mutton	climate and	Peru and	food is	pesticides,
	as fruit,	and pigs	soil type. For		beneficial for	•
	vegetables,	provide	example,	in California	many	regulators or
	grains,	pork, ham	many crops,	in the United	reasons: the	animal feed
	beans and	and bacon.	such as	States of	food tastes	additives.
	nuts. Sort	Examples of	potatoes and		better; it is	Organic
	foods into	poultry	sugar beet,	Identify and	fresher	farmers use
	groups by	include	are grown in	name foods	because it	crop
	whether they	chickens,	the	that are	hasn't been	rotation,
	are from an	geese and	south-east	produced in	transported	animal and
	animal or	turkeys.	of England.	different	thousands	plant
	plant source.	•	,	places in the	of miles; the	manures,
	coveredopti	fish include	barley and	UK and	nutritional	hand-weedin
	onal	cod, salmon	vegetables	beyond.	value is	g and
		and	grow well in	Assign	higher; the	biological
		shellfish.	the east of		carbon	pest control.
		Milk comes	England.		footprint is	Explain how
		mainly from	Identify and		lower, due to	organic
		cows but	name foods		reduced	produce is
		also from	that are		transport; it	grown.
		goats and	produced in		supports	Assign
		sheep. Most	different		local	
		eggs come	places.		growers and	
		from	Assign		is usually	
		chickens.			cheaper.	
		Honey is			Describe	
		made by			what	
		bees. Fruit			seasonality	
		and			means and	
		vegetables			explain	
		come from			some of the	
		plants. Oils			reasons why	
		are made			it is	
		from parts of			beneficial.	
		plants.			covered x	
		Sugar is made from			3optional	
		plants called				
		sugar cane				

		and sugar beet. Plants also give us nuts, such as almonds, walnuts and hazelnuts. Identify the origin of some common foods (milk, eggs, some meats, common fruit and vegetables). covered				
Compare and contrast	Two products can be compared by looking at a set of criteria and scoring both products against each one. Describe the similarities and differences between two products. optional	Products can be compared by looking at particular characteristi cs of each and deciding which is better suited to the purpose. Compare different or the same products from the same or different brands. Assign	Work from different designers can be compared by assessing specific criteria, such as their visual impact, fitness for purpose and target market. Explain the similarities and difference between the work of two designers. Assign	A comparison table can be used to compare products by listing specific criteria on which each product can be judged or scored. Create and complete a comparison table to compare two or more products. Assign	A focus group is a small group of people whose reactions and opinions about a product are taken and studied. Evaluations can be made by asking product users a selection of questions to obtain data on how the product has met its design criteria. Survey users in a range of focus groups and compare	Products and inventions can be compared using a range of criteria, such as the impact on society, ease of use, appearance and value for money. Create a detailed comparative report about two or more products or inventions. Assign

					results.	
Significant people	The importance of a product may be that it fulfils its goals and performs a useful purpose. Describe why a product is important. covered	Many key individuals have helped to shape the world. These include engineers, scientists, designers, inventors and many other people in important roles. Explain why a designer or inventor is important. covered	changed the way people live. Describe how key events in	Significant designers and inventors can shape the world. Explain how and why a significant designer or inventor shaped the world. coveredopti onal	Many new designs and inventions influenced society. For example, labour-savin g devices in the home reduced the amount of housework, which was traditionally done by women. This enabled them to have jobs.  Describe the social influence of a significant designer or inventor.  Assign	The significance of a designer or inventor can be measured in various ways. Their work may benefit society in health, transport, communicati on, education, the built environment or technology. It may enhance culture in different areas, such as fashion, ceramics or computer games. Present a detailed account of the significance of a favourite designer or inventor.