



Wellesbourne Primary School Progression Document

DESIGN AND TECHNOLOGY



INTENT

At Wellesbourne CE Primary School, children receive a design and technology curriculum which allows them to exercise their creativity through designing, making and evaluating. The children are taught to combine their designing and making skills with knowledge and understanding in order to design and make a product. Skills are taught progressively to ensure that all children are able to learn and practice in order to develop as they move through the school. Evaluation is an integral part of the design process and allows children to test, adapt and improve their product, this is a key skill which they need throughout their life. D&T allows children to apply the knowledge and skills learned in other subjects, particularly Maths, Science, Art and Geography. Children's interests are captured through theme learning, ensuring that links are made in a cross curricular way, giving children motivation and meaning for their learning. Children will also learn basic cooking and food hygiene skills.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, 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		Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, 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			

	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.	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 Technical knowledge apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control
	Cooking and nutrition As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to: Key stage 1 ▪ use the basic principles of a healthy and varied diet to prepare dishes ▪ understand where food comes from. Key stage 2 ▪ 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.	

EAD Progression in Learning – Small Steps Preschool to Key Stage 1

Design and Technology (Creating with materials and Being Imaginative)	Preschool Year			Reception Year			<u>Key Vocabulary</u>
	Autumn Term	Spring Term	Summer Term	Autumn Term	Spring Term	Summer Term	
	Join materials together using glue sticks	Join materials together using masking tape	Join materials together using pva glue	Join materials using a variety of glues and tapes.	Use alternative resources to join materials e.g. split pins, string, Ttags, pipe cleaners	Use a variety of techniques to join materials e.g. flanges, tabs, slot, fold.	<u>Preschool</u> Join, glue, tape, scissors, snip, cut, spatula, hole punch, brush, build. <u>Reception</u> Glue, tapes, string, split pin, pipe cleaner, treasury tag, flange, tab, slot, fold, scissors, cut, stapler, dispenser, glue gun, hammer, scrunch, fold, twist, bend, tear, construct, plan, join.
	Use scissors to make snips.	Hold scissors correctly to snip.	Hold scissors correctly to cut straight lines.	Use scissors to cut through a variety of materials. Hold scissors correctly to cut simple lines and shapes e.g. straight, circles, squares.	Use a variety of scissors to create different effects. Hold scissors correctly to cut along and around different lines and shapes.	Use scissors with good control to cut through and around a range of materials and shapes.	
	Control and manipulate a variety of tools e.g. glue sticks, spatulas, brushes, hole punches			Explore using a wider variety of tools with support e.g. staplers, tape dispensers, glue gun, knife, hammers..		Choose the most appropriate tool for a task.	
	Explore using 2D materials e.g. paper, card, lollypop sticks to represent my ideas, imagination and experiences.	Explore using 3D materials e.g. junk modelling to represent my ideas, imagination and experiences.	Use a range of materials when I construct to represent my ideas, imagination and experiences	Explore manipulate materials in different ways e.g. scrunching, folding, twisting, bending, tearing, cutting.	Select materials and use different techniques for a purpose	Use my experiences to create increasingly accurate role play props, imaginary and real life objects	
	Build structures by stacking and arranging vertically and horizontally e.g. wooden blocks, stones, natural materials.	Build structures by stacking, balancing and joining e.g. blocks, natural material, duplo, mega block	Build structures by stacking, joining, balancing and making enclosures and spaces e.g. using a range of construction toys.	Build increasing complex structures by joining resources and creating spaces.	Explore using more complicated construction kits to build models and structures e.g. knex, screws and bolts	Use my experiences to build accurate models and structures from my experience or imagination which are stable, strong and detailed.	
	Name what I am constructing	Talk simply about my constructions.	Name and describe what I have constructed.	Name and describe what I have constructed. Begin to plan out what I am going to create.	Describe my creation and materials and tools I have used. Plan what I am going to create and make changes to my design when needed.	Evaluate my creations and think of further improvements I can make. Plan out my creations and use my experiences to solve problems when I am designing	<u>Values</u> Resilience Individual Liberty Mutual Respect Tolerance Democracy

Year Group	Autumn	Spring	Summer
1	FLYING KITES - Building structures	EAT MORE FRUIT AND VEG - Cooking and nutrition	MOVING PICTURES - Mechanisms
2	SAVOURY BREAD AND PACKAGING - Cooking and nutrition	FIRE ENGINES - Mechanisms	PUPPETS - Making with textiles
3	STABLE STRUCTURES - Building structures	MOVING MONSTERS - Mechanisms	EDIBLE GARDEN - Cooking and nutrition
4	LIGHT BOXES - Electrical systems	JUGGLING BALLS - Making with textiles	MECHANICAL POSTERS - Mechanisms
5	SUPER SEASONAL COOKING - Cooking and nutrition	AUTOMATA ANIMALS - Mechanisms	MARBULOUS STRUCTURES - Building structures
6	DESIGN A TOY - Making with textiles	BUILDING BRIDGES - Building structures	FAIRGROUND RIDES - Building structures Electrical systems Computing (program, monitor and control)

Key Unit AUTUMN – Year 1	Knowledge	Skills	Vocabulary	
FLYING KITES	- To know how to design a purposeful and functional kite. - To know how to generate, develop, model and communicate their ideas through talking, drawing and templates. - To know how to evaluate their ideas against a design criteria.	- 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 and textiles according to their characteristics - To discuss and shares ideas about how to make the kite stronger	ord	Definition
			Design	To make or draw plans for something
			Make	To create something
			Evaluate	To think about how well something works and what would be changed next time to improve it further
			Material	What things are made from
			Test	How well something works e.g. how the kite flies
			Construct	To build an object
			Strong	How well the object can cope with force, pressure or overuse

Key Unit SPRING – Year 1	Knowledge	Skills		
EAT MORE FRUIT AND VEG	- Design and Technology follows a process to design, make and evaluate a product. - It is important to be safe when using knives and other sharp utensils to prepare food. - It is important to work hygienically to minimise the spread of germs. - To know where food comes from - Key DT vocabulary.	- To safely use a knife when chopping fruit and vegetables. - To safely use a grater or peeler when preparing fruit or vegetables. - To be able to explain what has gone well and what could be improved next time.	Word	Definition
			Favourite	The one you like the most
			Popular	To be liked by many
			Examine	To look closely
			Hygiene	To be clean and safe
			Handle	To move things with your hands
			Prepare	To get something ready to use
			Design	To make or draw plans for something
			Make	To create something
			Evaluate	To think about how well something works and what would be changed next time to improve it further
			Pictogram	A pictorial chart which shows data
			Senses	Taste, touch, smell, sound, sight
			Equipment	What you need to make something
			Safe	To be free from harm or danger
			Recipe	A list of ingredients and instructions to follow to make a certain type of

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Key Unit SUMMER – Year 1	Knowledge	Skills	Vocabulary																
MOVING PICTURES	- To know how to design a moving picture using different techniques. - To know how to generate, develop, model and communicate my ideas through talking, drawing and templates. - To know how to evaluate my ideas against a design criteria. - To know how to create different moving mechanisms. - To know key DT vocabulary.	- I can explore and use mechanisms, e.g. levers, sliders, wheels - I can select and use a range of tools and equipment to perform the task required (e.g. cutting, joining) - I can explain what has gone well and what could be improved next time.	<table><tr><th>Word</th><th>Definition</th></tr><tr><td>Design</td><td>To make or draw plans for something</td></tr><tr><td>Make</td><td>To create something</td></tr><tr><td>Evaluate</td><td>To think about how well something works and what would be changed next time to improve it further</td></tr><tr><td>Moving mechanism</td><td>Something that makes something else move</td></tr><tr><td>Pivot</td><td>The central/fixed point on which something balances or turns</td></tr><tr><td>Lever</td><td>A handle or bar which you push or pull to make something move</td></tr><tr><td>Wheel mechanism</td><td>Something that moves round in a circle shape from a fixed point</td></tr></table>	Word	Definition	Design	To make or draw plans for something	Make	To create something	Evaluate	To think about how well something works and what would be changed next time to improve it further	Moving mechanism	Something that makes something else move	Pivot	The central/fixed point on which something balances or turns	Lever	A handle or bar which you push or pull to make something move	Wheel mechanism	Something that moves round in a circle shape from a fixed point
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The simple design, make and evaluate process. Know that different materials have different properties and are used for different purposes. Why it is important to be safe when using equipment and preparing food. The importance of good hygiene around food. Where certain foods come from.	Safely use simple kitchen equipment to prepare food. Evaluate their learning and final products. Explain that if you evaluate a product you consider how to improve it next time e.g. make it stronger. Safely use tools and equipment to make their finished products. Select and use a range of materials based on their suitability for a task/product.
Links to Values: Service - Kindness - Resilience	Resilience and kindness Mutual respect - working together Tolerance - listening and respecting opinions of others

Key Unit AUTUMN – Year 2	Knowledge	Skills	Vocabulary	
SAVOURY BREAD AND PACKAGING	• To know and explain what makes a product appealing and use this to evaluate. • Use knowledge gained to create an appealing packaging design. • To know how to use a range of tools safely and accurately.	• Follow instructions to create a healthy bread • Use tools and equipment safely and hygienically • Design a net suitable for the size and shape of my bread. • Accurately draw, cut, decorate, fold and assemble my packaging.	Word	Definition
			Design	To make or draw plans for something
			Make	To create something
			Evaluate	To think about how well something works and what would be changed next time to improve it further
			Material	What things are made from
			Equipment	What you need to make something
			Safe	To be free from harm or danger
			Recipe	A list of ingredients and instructions to follow to make a certain type of

			<table><tr><td></td><td>food</td></tr><tr><td>Ingredients</td><td>Food/substances that are combined to make a particular dish</td></tr><tr><td>Hygiene</td><td>To be clean and safe</td></tr><tr><td>Texture</td><td>The feel, appearance or consistency</td></tr><tr><td>Taste</td><td>Sensation of flavour perceived by the mouth</td></tr><tr><td>Method</td><td>Procedure to follow to accomplish something</td></tr><tr><td>Packaging</td><td>Materials used to wrap or protect goods.</td></tr><tr><td>Net</td><td>A flat 2 D shape which can be folded to create a 3D shape, often used for packaging</td></tr><tr><td>Assemble</td><td>Fit separate parts together</td></tr></table>		food	Ingredients	Food/substances that are combined to make a particular dish	Hygiene	To be clean and safe	Texture	The feel, appearance or consistency	Taste	Sensation of flavour perceived by the mouth	Method	Procedure to follow to accomplish something	Packaging	Materials used to wrap or protect goods.	Net	A flat 2 D shape which can be folded to create a 3D shape, often used for packaging	Assemble	Fit separate parts together
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FIRE ENGINES	• To know and explain what went well and could be improved when evaluating a product. • To know what mechanism and parts are needed to create a successful end product. E.g, wheels, chassis and axles. • To be able to design a fire engine and know the materials needed.	• Follow a design criteria to create a functional product. • Use tools and equipment safely. • Design a fire engine including the key functional parts chassis, axles and wheels.	<table><tr><th>Word</th><th>Definition</th></tr><tr><td>Design</td><td>To make or draw plans for something</td></tr><tr><td>Make</td><td>To create something</td></tr><tr><td>Evaluate</td><td>To think about how well something works and what would be changed next time to improve it further</td></tr><tr><td>Material</td><td>What things are made</td></tr></table>	Word	Definition	Design	To make or draw plans for something	Make	To create something	Evaluate	To think about how well something works and what would be changed next time to improve it further	Material	What things are made								
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	To know how to use a range of tools to construct a product.	Show awareness of which materials are best suited to their function.	<table><tr><td></td><td>from</td></tr><tr><td>Equipment</td><td>What you need to make something</td></tr><tr><td>Wheels</td><td>A circular object that spin on an axle to move an object easily over the ground</td></tr><tr><td>Axles</td><td>A rod or spindle passing through the centre of a wheel or group of wheels</td></tr><tr><td>Chassis</td><td>The base frame of a car, carriage, or other wheeled vehicle</td></tr><tr><td>Tools</td><td>A device or implement, especially one held in the hand, which is used to carry out a particular function</td></tr></table>		from	Equipment	What you need to make something	Wheels	A circular object that spin on an axle to move an object easily over the ground	Axles	A rod or spindle passing through the centre of a wheel or group of wheels	Chassis	The base frame of a car, carriage, or other wheeled vehicle	Tools	A device or implement, especially one held in the hand, which is used to carry out a particular function
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PUPPETS	- To know there are a range of puppets and recognise their features. - To be able to identify and name ‘felt’ - To know that a glove puppet goes on a hand. - To know the features of a glove puppet and use in a design. - To know and explain what went well and could be improved when evaluating a product.	- Follow my design to make a puppet - To be able to thread a needle and do a running stitch - Use tools and equipment safely - Accurately draw, cut, decorate, fold and assemble my puppet	<table><tr><th>Word</th><th>Definition</th></tr><tr><td>Design</td><td>To make or draw plans for something</td></tr><tr><td>Make</td><td>To create something</td></tr><tr><td>Evaluate</td><td>To think about how well something works and what would be changed next time to improve it further</td></tr><tr><td>Material</td><td>What things are made from</td></tr><tr><td>Equipment</td><td>What you need to make</td></tr></table>	Word	Definition	Design	To make or draw plans for something	Make	To create something	Evaluate	To think about how well something works and what would be changed next time to improve it further	Material	What things are made from	Equipment	What you need to make
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The simple design, make and evaluate process. They will be able to identify ways to improve their product. They will know the importance of packaging and how it can help protect, but also sell a product. They will be able to select materials based on their functionality for use.		Use tools and equipment safely and hygienically. Accurately draw, cut, fold and assemble materials. Follow a design criteria, plan and instructions to make a finished product. Discuss which materials are best to use and give reasons why.																	
Links to Values: Service - Kindness - Resilience		Resilience and kindness Mutual respect - working together Tolerance - listening and respecting opinions of others Tolerance - learning about other cultures and diversity																	

Key Unit AUTUMN – Year 3	Knowledge	Skills	Vocabulary	
EARTHQUAKE PROOF BUILDINGS	- To learn ways of strengthening buildings - To be able to identify some of the world's most earthquake proof buildings - To consider other building features (sprinkler, shutters, gas and electric switch) - To use knowledge to design, make and evaluate an earthquake proof structure	- To use knowledge to design an earthquake proof structure - To use design to make an earthquake proof model - To meet success criteria (more than 30cm tall/ fit shake table/ withstand 10 sec shaking) - To test, design and evaluate their design	Word	Definition
			Cross bracings	Diagonal supports in an X shape
			Base- isolation	Shock absorbers which absorb the earthquakes shock waves
			Shear walls	Walls made from the thin concrete with steel bars in
			Design	To make or draw plans to show the look and function of something
			Make	To create something
			Evaluate	To think about how well something works and what would be changed next time to improve it further, based against the success criteria
			Test	How well something works e.g. the quality, performance and reliability of a structure
Key Unit Spring – Year 3	Knowledge	Skills		
PNEUMATICS - MOVING MONSTERS	- To know how simple pneumatic systems work using appropriate vocabulary - To know how to make a pneumatic system	Children apply techniques for making simple pneumatic systems	Word	Definition
			deflate	To remove the air from an object causing it to shrink
			inflate	To fill something with air or

	To know how to use a pneumatic system to make something move	- To compare two systems and discuss similarities and differences - To plan the stages of their work - design - To choose appropriate materials and make their design - make - Children will be able to evaluate their work and suggest alterations /improvements - To work safely and accurately with a range of simple hand tools	<table><tr><td></td><td>gas to make it swell up</td></tr><tr><td>hinge</td><td>A part or join that allows something to open and close or to move</td></tr><tr><td>input</td><td>What goes into a system</td></tr><tr><td>join</td><td>Something that joins two pieces together</td></tr><tr><td>mechanism</td><td>A device used to create movement in a product</td></tr><tr><td>output</td><td>What comes out of a system</td></tr><tr><td>pneumatic</td><td>A system that works using gases (air)</td></tr><tr><td>product</td><td>Something made by means of either human work or that of a machine</td></tr><tr><td>syringe</td><td>A tube with a nozzle and a plunger for sucking and blowing air or liquids.</td></tr></table>		gas to make it swell up	hinge	A part or join that allows something to open and close or to move	input	What goes into a system	join	Something that joins two pieces together	mechanism	A device used to create movement in a product	output	What comes out of a system	pneumatic	A system that works using gases (air)	product	Something made by means of either human work or that of a machine	syringe	A tube with a nozzle and a plunger for sucking and blowing air or liquids.
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Key Unit SUMMER – Year 3	Knowledge	Skills	Vocabulary																		
EDIBLE GARDEN	- Understand and know where and how a variety of ingredients are grown - Understand and apply the principles of a healthy and varied diet in the context of making a balanced meal made from herbs	- Prepare ingredients safely and hygienically using appropriate kitchen utensils. - Be able to plant and care for a variety of ingredients so they yield produce - Select from and use a wider	<table><tr><th>Word</th><th>Definition</th></tr><tr><td>Seasonality</td><td>Changes that occur over the calendar year</td></tr><tr><td>sow</td><td>To plant a seed</td></tr><tr><td>seed</td><td>Something that can be sown to grow into a plant</td></tr></table>	Word	Definition	Seasonality	Changes that occur over the calendar year	sow	To plant a seed	seed	Something that can be sown to grow into a plant										
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	- Understand the correct proportions of a balanced meal. - Understand seasonality and know where and how a variety of ingredients are grown - Understand the eat well plate and know which foods they should be eating more and less of.	- range of tools and equipment to perform practical tasks accurately in the context of kitchen tools. - Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of cooking a dish made with tomatoes. - Understand how to control the temperature of the hob when cooking - Measure ingredients to the nearest millilitre accurately and assemble or cook ingredients.	<table><tr><td>vitamin</td><td>Something that is found in food and is important to help us stay healthy, fight off diseases, grow and develop</td></tr><tr><td>mineral</td><td>Something that is found in food and help support the body in building strong bones and teeth</td></tr><tr><td>nutrition</td><td>The study of food and how it works in your body</td></tr><tr><td>Herbs (basil, thyme, mint, tarragon, parsley, rosemary)</td><td>Plants that are used to add flavour and smell to foods</td></tr><tr><td>simmer</td><td>To heat liquid below boiling point</td></tr><tr><td>boil</td><td>The process of cooking food in boiling water</td></tr><tr><td>measure</td><td>To find the required weight or volume of ingredients</td></tr></table>	vitamin	Something that is found in food and is important to help us stay healthy, fight off diseases, grow and develop	mineral	Something that is found in food and help support the body in building strong bones and teeth	nutrition	The study of food and how it works in your body	Herbs (basil, thyme, mint, tarragon, parsley, rosemary)	Plants that are used to add flavour and smell to foods	simmer	To heat liquid below boiling point	boil	The process of cooking food in boiling water	measure	To find the required weight or volume of ingredients
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How to follow a design, make and evaluate the process. They will learn ways to strengthen buildings and apply this knowledge to their own structure. They will select appropriate materials for their design. They will know what a pneumatic system is and explain how they work. They will know which foods and proportions make a balanced diet and how seasons can affect the growth of different herbs.		Use tools and equipment safely and hygienically, including kitchen tools such as sharp knives. They will be able to use a hob and control the temperature. Follow a design criteria, plan and instructions to make a finished product, which meets a specific criteria. Discuss which materials are best to use and give reasons for their choices. They will be able to plant and care for their own ingredients and measure the chosen ingredients accurately.															

Links to Values: Service - Kindness - Resilience	Resilience and kindness Mutual respect - working together Tolerance - listening and respecting opinions of others Tolerance - learning about other cultures and diversity Rule of Law - understand why rules are in place (food safety)
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Key Unit AUTUMN – Year 4	Knowledge	Skills	Vocabulary	
ELECTRICAL CIRCUITS	- To identify electrical and nonelectrical appliances. - To know how to create a simple series circuit both with and without a switch. - To explain how a circuit works, using the appropriate vocabulary - To name at least two electrical conductors and insulators. - To accurately record their findings in a table	- To design a Christmas decoration that incorporates a light - To generate, develop and communicate ideas - To draw annotated diagrams of a product - To select and use materials and components - To evaluate products against design criteria	Word	Definition
			design	To make or draw plans for something, including how it will work
			make	To create something, following a plan
			evaluate	To think about how well something works and what would be changed next time to improve it further, based against the success criteria
			annotated diagram	A clearly labelled diagram which explains the role of each part
			design criteria	A list of the things that the design should contain
			electrical component	A part that combines with others to form a circuit e.g. bulb, motor, buzzer
			switch	Allows a component to be switched on and off, by

			<table><tr><td></td><td>stopping the flow of electricity</td></tr><tr><td>conductor</td><td>Material that allows electricity to be passed through</td></tr><tr><td>insulator</td><td>Material that does not allow electricity to pass through it</td></tr></table>		stopping the flow of electricity	conductor	Material that allows electricity to be passed through	insulator	Material that does not allow electricity to pass through it								
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Key Unit SPRING – Year 4	Knowledge	Skills	Vocabulary														
PENCIL CASES	• To know the features of a pencil case • To know how to sew a running stitch, backstitch and a whip stitch • To know how to fasten a pencil case using a button, popper and toggle • To know how to sew embellishments onto fabric. • To know how to follow a design to make a product and then evaluate it	• To discuss how pencil cases are made and describe what features they have? • To be able to choose the best stitch for security and appearance • To choose a secure fastening for their design. • To create an aesthetically pleasing product. • To design and make a pencil case using sewing considering shape, embellishments, colour (felt and thread), fastening and purpose • To follow a design accurately to make a pencil case, using sewn seams and embellishments	<table><tr><th>Word</th><th>Definition</th></tr><tr><td>design</td><td>Plan what a product will look like and how it will work before it is made.</td></tr><tr><td>make</td><td>Creating the product, following the design</td></tr><tr><td>evaluate</td><td>Judge how well something has worked. Identify areas for improvement.</td></tr><tr><td>annotated diagram</td><td>A diagram with labels explaining different parts</td></tr><tr><td>design criteria</td><td>A list of things that the design should contain</td></tr><tr><td>sewing</td><td>The craft of fastening or attaching objects using stitches made with a needle and thread</td></tr></table>	Word	Definition	design	Plan what a product will look like and how it will work before it is made.	make	Creating the product, following the design	evaluate	Judge how well something has worked. Identify areas for improvement.	annotated diagram	A diagram with labels explaining different parts	design criteria	A list of things that the design should contain	sewing	The craft of fastening or attaching objects using stitches made with a needle and thread
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		To evaluate work fairly and accurately	<table><tr><td>fastening</td><td>Something used to keep something and keep it shut.</td></tr><tr><td>embellishments</td><td>A decorative detail or features added to something to make it more attractive</td></tr></table>	fastening	Something used to keep something and keep it shut.	embellishments	A decorative detail or features added to something to make it more attractive														
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MECHANICAL POSTERS	- To know how a mechanical system works - levers and linkages - To know which parts move and what the input and output are. - How to make a mechanism which uses levers and linkages. - I can explain what a prototype is. - To know how to use the correct tools and equipment accurately. - To identify a lever, linkage, loose pivot and fixed pivot. - To know how to evaluate a product against design criteria	- Investigate and analyse a range of existing mechanical products which use levers and linkages. - To explain how a system works using the words input and output. - Use research and develop design criteria to inform the design of innovative, functional and appealing product - To develop ideas using annotated sketches to show the parts which will move. - To use a prototype to test ideas and evaluate against criteria - To select and use the correct tools and equipment accurately. - To explain the function of	<table><tr><th>Word</th><th>Definition</th></tr><tr><td>input</td><td>What goes into a system</td></tr><tr><td>join</td><td>Something that joins two pieces together</td></tr><tr><td>mechanism</td><td>A device used to create movement in a product</td></tr><tr><td>output</td><td>What comes out of a system</td></tr><tr><td>lever</td><td>A beam pivoted at a fixed point and capable of rotating on the point</td></tr><tr><td>linkage</td><td>Something joined to one or more levers to provide movement.</td></tr><tr><td>prototype</td><td>a product built to test ideas and changes until it resembles the final product</td></tr><tr><td>product</td><td>Something made by means of either human work or that of a machine</td></tr></table>	Word	Definition	input	What goes into a system	join	Something that joins two pieces together	mechanism	A device used to create movement in a product	output	What comes out of a system	lever	A beam pivoted at a fixed point and capable of rotating on the point	linkage	Something joined to one or more levers to provide movement.	prototype	a product built to test ideas and changes until it resembles the final product	product	Something made by means of either human work or that of a machine
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		levers, linkage, loose pivot and fixed pivot.	
A designer at the end of Year 4 will know:		A designer at the end of Year 4 will be able to:	
How mechanical systems such as levers and linkages create movement and how simple electrical circuits and components can be used to make functional products. They will know that a single fabric shape can be used to make a 3D textile.		To investigate a range of products including electrical circuits, mechanical systems and pencil cases gathering information about their purpose and use this to create a design with annotations of how parts work. To order the main stages of making, selecting from a wide range of components, the appropriate tools and materials and using them safely. They will measure, markout, cut, and attach materials with some accuracy referring to their design. To test and evaluate a product for strengths and weaknesses, considering the views of others including the intended user and their design criteria.	
Links to Values: Service - Kindness - Resilience		Resilience and kindness Mutual respect - working together Tolerance - listening and respecting opinions of others Tolerance - learning about other cultures and diversity	

Key Unit AUTUMN – Year 5	Knowledge	Skills	Vocabulary
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SUPER SEASONAL COOKING

- To know seasonality in the context of when fruit and vegetables are in season in the UK.
- To know where and how a variety of ingredients are reared, caught and processed in the UK.
- To know the functional properties and aesthetic qualities of seasonal food.
- To know at least 4 key rules for storing and handling raw and cooked fish and meat.
- To know the system of using different chopping boards.
- To know different cooking techniques such as grilling, griddling, frying and boiling.

- To taste and evaluate seasonal foods.
- To select ingredients for a seasonal meal considering functional properties and aesthetic qualities.
- Consider the views of others to improve their design.
- To work as a group to generate, evaluate and refine recipe ideas.
- To generate, develop, model and communicate ideas through discussion and annotated sketches.
- To prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques to prepare and cook a healthy seasonal meal.
- To evaluate their products against their own design criteria
- To use a range of preparation techniques.

Word	Definition
Seasonality	Changes that occur over the calendar year
nutrition	The study of food and how it works in your body
simmer	To heat liquid below boiling point
boil	The process of cooking food in boiling water
grilling	Cooking food directly over a source heat
griddling	Cooking using heat over a solid surface
frying	Cooking in hot fats or oils
measure	To find the required weight or volume of ingredients
raw	Uncooked food
cooked	Food that has been heated
raw	Uncooked food

Key Unit SPRING – Year 5

Knowledge

Skills

AUTOMATA ANIMALS	• To know how a selection of existing products work • To know how to use research to develop a design • Understand and know how to use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • To know a cam mechanism is made up of 3 components: cam, slider and follower	• To experiment with different cam mechanisms • To design and make a cam toy • To choose appropriate resources and tools for cutting, shaping, joining and finishing] • To test and evaluate toy against their design and considering the views of others to improve their work.	<table><tr><th>Word</th><th>Definition</th></tr><tr><td>cam</td><td>Specially shaped piece of material, which is fixed to a rotating shaft.</td></tr><tr><td>revolving</td><td>Something that moves around a central point</td></tr><tr><td>input</td><td>What goes into a system</td></tr><tr><td>join</td><td>Something that joins two pieces together</td></tr><tr><td>mechanism</td><td>A device used to create movement in a product</td></tr><tr><td>output</td><td>What comes out of a system</td></tr></table>	Word	Definition	cam	Specially shaped piece of material, which is fixed to a rotating shaft.	revolving	Something that moves around a central point	input	What goes into a system	join	Something that joins two pieces together	mechanism	A device used to create movement in a product	output	What comes out of a system
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Key Unit SUMMER – Year 5	Knowledge	Skills	Vocabulary														
MARBULOUS STRUCTURES	• To know how to strengthen, reinforce and stabilise structures. • To know different techniques for joining card to a variety of materials • I know how to make a bridge and bend in a marble run. • To know how components fit together to make marble runs	• To investigate and analyse a range of existing products looking at existing free standing structures and bought marble runs. • To apply knowledge to design and make a marble run • To select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and	<table><tr><th>Word</th><th>Definition</th></tr><tr><td>design</td><td>To make or draw plans for something, including how it will work</td></tr><tr><td>make</td><td>To create something, following a plan</td></tr><tr><td>evaluate</td><td>To think about how well something works and what would be changed next time to improve it further, based against the success criteria</td></tr></table>	Word	Definition	design	To make or draw plans for something, including how it will work	make	To create something, following a plan	evaluate	To think about how well something works and what would be changed next time to improve it further, based against the success criteria						
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		finishing), accurately To evaluate their ideas against their own design criteria and consider the views of others to improve their work	<table><tr><td>annotated diagram</td><td>A clearly labelled diagram which explains the role of each part</td></tr><tr><td>design criteria</td><td>A list of the things that the design should contain</td></tr><tr><td>join</td><td>Something that joins two pieces together</td></tr><tr><td>reinforce</td><td>to add support to increase stability</td></tr></table>	annotated diagram	A clearly labelled diagram which explains the role of each part	design criteria	A list of the things that the design should contain	join	Something that joins two pieces together	reinforce	to add support to increase stability
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A designer at the end of Year 5 will know:		A designer at the end of Year 5 will be able to:									
How mechanical systems such as cams or pulleys or gears create movement and how to measure, mark out and cut accurately and safely. They will be able to reinforce and strengthen a 3D framework building a freestanding structure, cutting slots, and joining 2 materials together. They will also know that a recipe can be adapted by adding or substituting one or more ingredients and when different fruit and vegetables are in season in the UK, how ingredients are grown, reared, caught and processed. They will know a range of hygienic preparation and cooking techniques and how to store and handle meat and fish correctly.		To investigate a range of products including electrical circuits, mechanical systems and pencil cases gathering information about their purpose and use this to create a design with annotations of how parts work. To order the main stages of making, selecting from a wide range of components, the appropriate tools and materials and using them safely. They will measure, markout, cut, and attach materials with some accuracy referring to their design. To test and evaluate a product for strengths and weaknesses, considering the views of others including the intended user and their design criteria.									
Links to Values: Service - Kindness - Resilience		Resilience and kindness Mutual respect - working together Tolerance - listening and respecting opinions of others Tolerance - learning about other cultures and diversity Rule of law - understand why rules are in place (food safety)									

Key Unit SPRING – Year 6	Knowledge	Skills	Vocabulary	
BUILDING BRIDGES	- To know types of bridges and how they support - suspension/cantilever/beam/arch and truss - To know a famous bridge - To know how to make a truss bridge using triangles and cutting beams to the correct size, using a cutting mat - To know how to design, make and evaluate. - To know the materials and tools required and how to use them safely.	- To investigate different types of bridges recognising that supporting shapes can help increase the strength of a bridge, allowing it to hold more weight. - To compare different types of bridges - To be able to use triangles and beams to create simple truss bridges that support a load - To draw and label a design, make by experimenting with shape and materials. Test and evaluate by making the product stronger / sturdier	Word	Definition
			design	To make or draw plans for something, including how it will work
			make	To create something, following a plan
			evaluate	To think about how well something works and what would be changed next time to improve it further, based against the success criteria
			Suspension bridge	When the base is supported by vertical cables
			Cantilever bridge	Structures that project horizontally supported on only one end
			Beam bridge	A simple horizontal beam is supported at each end.
			Arch bridge	A bridge shaped as an upward curve
			truss bridge	Support provided by connected triangles
			design criteria	A list of the things that the design should contain
			join	Something that joins two pieces together

			reinforce	To add support to increase stability
Key Unit SUMMER – Year 6	Knowledge	Skills	Vocabulary	
FAIRGROUND RIDES	- The Ferris-Wheel was designed by George Washington Ferris. - In 1891 American engineers were challenged to create a monument for the World's Columbian Exposition, a fair to be held in Chicago in 1893. - Ferris wheels are large, non-building structures that rotate about a central axis. - Seats are attached to the outer rim of the wheel and always hang downwards. - The Ferris wheel spins upwards with the help of gears and motors, while gravity pulls the wheel back down again. - The world's tallest Ferris Wheel in operation is the High Roller in Las Vegas.	- To look at a range of familiar products that use rotating parts. - To investigate ways of making a framework for a fairground ride. - To be able to design a fairground ride with a rotating part. - To be able to make a fairground ride following a design. - Use an electrical circuit to power rotational parts or features	Word	Definition
			cam	Specially shaped piece of material, which is fixed to a rotating shaft.
			pulley	A wheel on an axle that is designed to support movement and change of direction
			revolving	Something that moves around a central point
			Ferris Wheel	A fairground ride consisting of a giant vertical revolving wheel with passenger cars suspended on its outer edge.
			input	What goes into a system
			join	Something that joins two pieces together
			mechanism	A device used to create movement in a product
			output	What comes out of a system
			lever	A beam pivoted at a fixed point and capable of

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A designer at the end of Year 6 will know:		A designer at the end of Year 6 will be able to:									
That a 3D textiles product can be made from a combination of fabric shapes and made using a variety of stitches. How to create moving products using a range of mechanisms and how more complex electrical circuits and components can be used to create functional products and how to program a computer to control their products. They will also know how to reinforce and strengthen a 3D framework		To investigate a range of products including electrical circuits, mechanical systems, structures such as bridges and soft toys: carrying out research about their purpose and to use this to create a design specification, this should take into account the availability of resources and constraints such as time and cost. To produce appropriate lists of required tools and materials with a step by step guide to making considering safety. They will accurately measure, mark out, cut, and join a variety of materials referring to their design. They will be able to demonstrate resourcefulness when tackling problems. To critically evaluate the quality of the design, manufacture and fitness for purpose.									
Links to Values: Service - Kindness - Resilience		Resilience and kindness Mutual respect - working together Tolerance - listening and respecting opinions of others Tolerance - learning about other cultures and diversity									