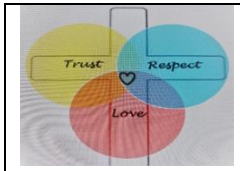

Ettington Primary School Progression Document
DESIGN AND TECHNOLOGY

INTENT

At Ettington 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,		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** from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.			

	drawing, templates, mock-ups and, where appropriate, information and communication technology **Make** · select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] · select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics **Evaluate** · explore and evaluate a range of existing products · evaluate their ideas and products against design criteria **Technical knowledge** · build structures, exploring how they can be made stronger, stiffer and more stable · explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	**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.

Reception Design and Technology (Creating with materials and Being Imaginative)
Progression in Learning – small steps to Key Stage 1
Use painting, drawing and malleable materials to create increasingly accurate representations of objects I have imagined, observed or experienced.

Autumn Term	Spring Term	Summer Term	Key vocabulary
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.	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. Values Resilience Individual Liberty Mutual Respect
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	
Explore using a wider variety of tools with support e.g. staplers, tape dispensers, glue gun, knife, hammers..	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 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 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 and describe what I have constructed.	Describe my creation and materials and tools I have used.	Evaluate my creations and think of further improvements I can make.	

Begin to plan out what I am going to create.	Plan what I am going to create and make changes to my design when needed.	Plan out my creations and use my experiences to solve problems when I am designing.	Tolerance Democracy

	Autumn Term	Spring Term	Summer Term
Year 1	**Mechanisms** Moving Minibeasts	**Structures** Homes	**Food** Eat More Fruit and Vegetables
Year 2	**Mechanisms** Fire Engines	**Food** Perfect Pizzas	**Textiles** Puppets
Year 3	**Textiles** Seasonal Stockings	**Mechanical Systems** Storybooks	**Structures** Making mini greenhouses
Year 4	**Structures** British Inventors	**Electrical Systems** Light Up Signs	**Food and Nutrition** Seasonal Food
Year 5	**Food and Nutrition** Bread	**Mechanical Systems** Moving Toys	**Textiles** Fashion and Textiles
Year 6	**Electrical Systems** Fairgrounds	**Structures** Bird House Builders	**Food and Nutrition** Burgers

Key Unit Autumn – Year 1	Knowledge	Skills	Vocabulary
Mechanisms - Moving Minibeasts	To know how to design a moving minibeast 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. -Explain what has gone well and what could be improved next time. · To know how to create different moving mechanisms.	Make a moving minibeast using a sliding mechanism. Combine and join materials to make own lever and pivot mechanisms. Cut out and join components to create a wheel mechanism. Choose a suitable moving mechanism for design. Follow a design to create a minibeast with a moving mechanism.	**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

	-Explain how the mechanism will make their minibeast move. · To know key DT vocabulary.	Work safely with a variety of tools and materials.	**Wheel mechanism**- Something that moves round in a circle shape from a fixed point
Key Unit Spring– Year 1	Knowledge	Skills	Vocabulary
Structures - HOMES	Recognise some different types of homes and their features Identify and name shapes within houses Draw a house using a variety of shapes To know how to design a purposeful and functional home. · 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 according to their characteristics. Select and use a variety of techniques for joining materials together successfully. Suggest ways of improving their structures or making them stronger. Make effective hinges. Gather and develop ideas for how to decorate the interior of a house. Design a house for a particular person or purpose and apply what they have learnt through their recent learning when designing a house. Use finishing techniques to improve the overall quality of their product. Say what they think and feel about their finished houses and how they could be improved next time. Evaluate the work of others and give their opinions in a constructive way.	**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 **Construct** -To build an object **Strong**- How well the object can cope with force, pressure or overuse

Key Unit Summer – Year 1	Knowledge	Skills	Vocabulary
Food and Nutrition – Eat More Fruit and Veg	Identify and describe familiar fruits and vegetables. Identify different parts of fruits and vegetables, such as the skin, flesh and seeds. Design and Technology follows a process to design, make and evaluate a product. Know that It is important to be safe when using knives and other sharp utensils to prepare food. Know that it is important to work hygienically to minimise the spread of germs. Understand that fruits and vegetables are an important part of a healthy diet. 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. Gather data about the most popular fruits and vegetables and present data in a pictogram. Explore a range of fruits and vegetables using their different senses. Draw, label and describe a variety of fruits and vegetables. Design a salad or smoothie for a particular purpose. Identify what ingredients and tools they will need. Follow a design to make a smoothie or salad. To be able to explain what has gone well and what could be improved next time.	**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 food
A designer at the end of Year 1 will know: 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.		A designer at the end of Year 1 will be able to: 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	

The importance of good hygiene around food. Where certain foods come from.	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 and aims	Curiosity, Collaboration, Communication and Perseverance Mutual respect - working together Tolerance - listening and respecting opinions of others

Key Unit Autumn – Year 2	Knowledge	Skills	Vocabulary
Mechanisms – Fire Engines	Name and label the main features of a fire engine and describe the functions of various parts. 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. · Know that there are two different ways of attaching wheels to axles. To be able to design a fire engine and know the materials needed. To know how to use a range of tools to construct a product.	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. Show awareness of which materials are best suited to their function. Experiment with a range of materials and techniques to combine wheels, axles and chassis. Identify different ways of combining materials to create the body of a fire engine. Explore ways of making different parts of a fire engine, such as the ladder. Discuss their designs and say what they think and feel about them. Identify ways in which they could improve their products and amend accordingly.	**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 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

		Evaluate a finished product by identifying what they did well and what could be improved.	
Key Unit Spring– Year 2	Knowledge	Skills	Vocabulary
Food and Nutrition- Perfect Pizzas	To know and explain what makes a product appealing and use this to evaluate. To know how to use a range of tools safely and accurately. Identify the different parts of a pizza Discuss different types of pizzas and begin to categorise them into healthy and unhealthy. Name and describe a variety of breads and say which they like. Name and describe a variety of toppings and say which they like. Understand eating healthily means having a balanced diet and that pizzas can be part of a healthy diet.	Sort foods into different food groups. Use the features of the bread to decide if it is fit for purpose. Design a healthy pizza. Identify and select ingredients and tools they will need. Identify and follow rules for food safety and hygiene. Follow a design to make a pizza. Evaluate their finished products and say what they think and feel about them.	**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 **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
Key Unit Summer – Year 2	Knowledge	Skills	Vocabulary

Textiles-Puppets	Describe what puppets are and how they are used 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.	Use running stitch and/or over stitch to join two pieces of fabric together. Use a needle and thread to attach buttons and other features to material. Use tools and equipment safely. Accurately draw, cut, decorate, fold and assemble my puppet. Use a template to cut out appropriate sizes of fabric. Discuss their finished work and evaluate what went well and what could be improved. Describe what materials and tools they will need to make their puppet. Describe the steps they will need to take to make their puppet. Follow my design to make a puppet. Can children comment on the work of others and offer their opinions.	**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 **Assemble** -Fit separate parts together **Method -**Procedure to follow to accomplish something **Sewing** -Using a needle and thread to join pieces of material together **Felt** -A soft material **Appearance**- The way something looks **Template-** A shaped piece of stiff material used as a pattern for cutting out **Glove puppet-** Goes on the hand and is used to tell a story/show emotion
A designer at the end of Year 2 will know: The simple design, make and evaluate process. They will be able to identify ways to improve their product. They will know the importance of designing appealing products with a particular user in mind. They will be able to select materials based on their functionality for use and know how to combine/join them safely.		A designer at the end of Year 2 will be able to: 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 and aims	Curiosity, Collaboration, Communication and Perseverance 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
Textiles – Seasonal Stockings	Know how to evaluate the functionality of a variety of Christmas stockings as well as discuss and assess the visual appeal. Compare and contrast different Christmas stockings and identify different sewing stitches Use their knowledge of joining stitches and decorative techniques when designing their product Identify which parts of the making process they may find challenging Understand the importance of evaluating a finished product Identify what has been successful with their design Identify any improvements that could be made to the design	Thread a needle and secure a knot Join two pieces of fabric together using a sewing stitch as well as use stitching for decorative purposes. Sew a button/bead/sequin/ribbon onto fabric accurately Combine these skills to create a design for a product Follow a design to create a successful product Work safely and sensibly with a range of materials and tools	**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 **Fastening** - Something used to keep something and keep it shut. **Embellishments** - A decorative detail for features added to something to make it more attractive
Key Unit Spring– Year 3	Knowledge	Skills	Vocabulary

Mechanical Systems- Storybooks	Recognise products that contain lever and linkage systems Explain why a particular mechanism has been used for a particular purpose Use technical vocabulary to describe lever and linkage systems Know that different fonts and graphic techniques need to be suited to their purpose Explain which designs they like best/ least and why Evaluate other people's finished products fairly and constructively Evaluate their own finished product fairly and constructively Explain what they would do differently if they were to make their product again	Cut and shape materials with some precision to make their mechanisms work Join and combine materials and components in a variety of ways Mark out and measure accurately Experiment to create a range of different fonts and graphic techniques Create a design for a particular purpose Choose suitable mechanisms to create moving parts in their storybook Choose appropriate fonts and graphic techniques to use in their design Follow a design to create a storybook Create pages that are neat, accurate and creative	**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. **Mechanism-** a device used to create movement in a product **Lever-** a type of simple machine that makes work easier, it uses a bar to pivot around a fixed point to lift or apply pressure to a load. A sew saw is lever. **Linkage** – a mechanism made by connecting levers together through joints known as pivot points **Join** -Something that joins two pieces together mechanism **Pivot point** -A point around which an object can move or rotate. **Product** -Something made by means of either human work or that of a machine
Key Unit Summer – Year 3	Knowledge	Skills	Vocabulary
Structures - Making mini greenhouses	Analyse and discuss different types of greenhouses and know what their purpose is. Understand the term 'stable'	Can follow specific design criteria Amend their design to improve a product / give suggestions to others as solutions to problems	**Design**- Plan what a product will look like and how it will work before it is made. **Make**- Creating the product, following the design

	Identify factors that make a structure stable Know how to make a structure more/less stable Identify suitable materials for a mini greenhouse, explain why these materials are suitable and know ways of joining these materials together Identify possible challenging parts of their design/help others to find solutions Understand the importance of evaluating a finished product Identify what has been successful with their design suggest any improvements that could be made to the design	Work safely and sensibly with a range of materials and tools Apply their knowledge of stable structures and suitable materials when designing	**Evaluate** -Judge how well something has worked. Identify areas for improvement. **Stable structure –** a structure that is less likely to fall over when acted upon by a force. **Strengthen-** To make something stronger **Frame** - a structure made of different parts that are joined together to create stability and strength
A designer at the end of Year 3 will know: How to follow a design, make and evaluate the process. They will learn ways to strengthen structures and apply this knowledge to their own designs. They will select appropriate materials for their designs, know how mechanical systems such as levers and linkages create movement and to how to join and embellish fabric.		A designer at the end of Year 3 will be able to: Use tools and equipment safely. Follow a design criteria, plan and a create a method to make a finished product, which meets a specific criteria. They will discuss which materials are best to use and give reasons for their choices. They will develop a variety of sewing techniques for joining and decorating fabric, create a variety of mechanisms and create a frame structure.	
Links to values and aims		Curiosity, Collaboration, Communication and Perseverance 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 Autumn – Year 4	Knowledge	Skills	Vocabulary

Structures – British Inventors	Reflect on how the invention of the telephone changed the way people lived Identify ways in which the telephone has changed to meet people's needs Able to evaluate a product's performance Distinguish between the World Wide Web and the internet Reflect on how an invention has changed their lives Reflect on how an invention has changed the world Evaluate the success of a product based on a set of design criteria Name a British inventor and their creation	Pick out features of a material that make it suitable for a purpose Able to think of design criteria to suit a purpose Define the word reinforced and describe what reinforced concrete is Able to suggest ways to reinforce a material Design a new creation intended to solve an everyday problem	**Invention -** Something new that was created, such as a device, process, material, or machine. **World Wide Web -** The World Wide Web (WWW) is a collection of web pages that are accessible on the internet through a web browser. The WWW is part of the internet **The internet-** A giant network of computers connected across the world. **Communication- T**he process of sharing, receiving, and giving information. **Reinforce-** To strengthen with additional support
Key Unit Spring– Year 4	Knowledge	Skills	Vocabulary
Electrical Circuits – Light Up Signs	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. Suggest reasons why it is helpful to illuminate signs and identify	Investigate ways in which very simple circuits for illuminated signage might be constructed Construct a circuit with an LED To design a sign that incorporates a light Decide on an appropriate way to fit electrical components inside their designs To generate, develop and communicate ideas To use CAD (Tinkercad.com) to create designs	**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 **Design criteria** - A list of the things that the design should contain

	distinguishing features of a variety of illuminated signs Identify potential audiences and purposes for a product design Identify products which contain microcontrollers which control lights	To select and use materials and components safely To evaluate products against design criteria Identify ways in which their existing designs could be adapted for the materials available Make algorithms with simple sets of instructions which describe how a flashing LED is controlled Write or edit programs to control an LED	**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 **CAD** – Computer Aided Design **LED**- A light-emitting diode is a semiconductor device that emits light when an electric current flows through it.
Key Unit Summer – Year 4	Knowledge	Skills	Vocabulary
Food and Nutrition – Seasonal Food	Know what 'seasonal food' is Know why certain foods are available all year round in Britain. Understand that some seasonal fruits are suited to the climate and weather conditions in Britain. Know how fruit may be processed and/or preserved. Know why vegetables form an important part of a healthy diet and why some British vegetables are in season. Name a variety of food products that come from animals. Know some reasons why some meat is not in season all-year-round Know some ways in which fish are caught or reared and processed in Britain and know some of the nutrients in fish.	Use a variety of techniques to bake cakes safely and hygienically Follow instructions for a recipe using seasonal fruit or jam? To taste and evaluate seasonal foods. To select ingredients for a seasonal meal considering functional properties and aesthetic qualities. Prepare a healthy meal using seasonal vegetables prepare a healthy, savoury meal using meat or a vegetarian alternative) prepare a healthy, savoury meal using fish or vegetarian alternatives Recall and apply what they have learned about seasonal food in Britain	**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

	Identify some reasons why some foods are only in season for a short time. Explain why it is a good thing to eat seasonal food. 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 evaluate their products against their own design criteria Know and use techniques such as grilling, griddling, frying and boiling.	
A designer at the end of Year 4 will know: About British Inventors and how they have been influential. 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. They can describe that simple electrical circuits and components can be used to make functional products and how lights can be incorporated into a range of circuits to create illuminated signs.		A designer at the end of Year 4 will be able to: To investigate a range of products including electrical circuits and savoury, seasonal good gathering information about their purpose and use this to create a design. Use 3D CAD software to help with this design. 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, mark out, 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 and aims		Curiosity, Collaboration, Communication and Perseverance 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
Food and Nutrition – Bread	Name and identify the origin of a number of bread products. Use appropriate vocabulary to describe them. Compare and evaluate a variety of bread products. Understand the contribution bread can make to a healthy diet Use the results of investigations when developing design ideas Explain how they will make their product and explain what purpose they are designing and creating their product for Describe how they could make further improvements to their product if they were to make it again Evaluate what they have learnt throughout the course of the module	Follow a recipe and instructions Weigh and measure accurately Experiment with different ways of altering a basic bread mixture successfully Use a recording sheet to complete a survey Evaluate their findings Apply what they have learnt when making their product. Follow a design accurately. Select and use tools and equipment safely, hygienically and accurately.	**Design** -Plan what a product will be like before it is made. **Make**- Creating the product, following the design **Evaluate**- Judge how well something has worked and identify areas for improvement. **Seasonality** - Changes that occur over the calendar year **Nutrition** -The study of food and how it works in your body **Prove** - Step in bread baking when the dough is left to rise and ferment before baking **Yeast**- Yeast is a leavening agent that plays two main roles in bread making: strengthening and rising. **Ferment -** a chemical process that occurs when yeast in bread dough consumes sugars causing the dough to rise **Measure** T-o find the required weight or volume of ingredients **Raw** - Uncooked food **Baked** -Food cooked by dry heat in an oven.
Key Unit Spring– Year 5	Knowledge	Skills	Vocabulary
Mechanical Systems- Moving Toys	Recognise the movement of a mechanism within a toy or model. Understand that a cam mechanism will change rotary motion into linear motion.	Investigate examples of cam toys and comment on how they work. Explore how different shaped cams affect the movement of the follower.	**Design** -Plan what a product will look like and how it will work before it is made. **Make**- Creating the product, following the design criteria

	Describe how cams work using appropriate vocabulary. Make suggestions for how different cams could be used for different kinds of toys. Make suggestions for how they could make a sturdy structure for a moving toy. Identify ways of strengthening a structure. State the purpose and audience of their design. Desing a moving toy with a cam mechanism. Identify areas of their toy that could be improved and recognise ways in which they have been successful.	Experiment with a variety of materials, tools and techniques. Describe how they will create their toy and select materials and tools they will need. Follow a design to create a moving toy. Work safely with a variety of materials and tools	**Evaluate**- Judge how well something has worked and identify areas for improvement. **Cam** - A rotating disk or cylinder with an irregular shape that is mounted on a shaft **Follower** - a lever or other object that moves along the surface of a rotating cam to convert rotary motion into linear motion. **Rotary Motion** -the circular movement of an object around a central axis, also known as an axis of rotation. It's also known as circular motion. **Linear Motion -** Linear motion is a change in position from one point to another in a straight line in one dimension. Driving a car along a straight road is an example of Linear motion. **Revolving** -Something that moves around a central point **Join**- Something that joins two pieces together **Mechanism** - A device used to create movement in a product
Key Unit Summer – Year 5	Knowledge	Skills	Vocabulary
Textiles – Fashion and Textiles	Identify the materials used in the manufacture of some items made using textiles.	Design an item made using textiles according to design criteria. Draw pattern pieces, adding details such as seam allowances.	**Design** -Plan what a product will look like and how it will work before it is made. **Make**- Creating the product,

	Identify ways in which materials are joined in some items made using textiles. Understand the main stages in the production of cotton cloth. Identify different sewing stitches on items made using textiles. Distinguish between functional and decorative sewing stitches on items made using textiles. Identify potential uses for different sewing stitches. Understand that design criteria are used by fashion designers to develop designs.	Use pattern pieces to mark fabric for cutting and sewing. Can children cut fabric according to a pattern. Add design details to a product according to their own design. Thread a needle by themselves. Join fabric pieces using a simple hand-sewing stitch. Tie threads to ensure seams do not unravel. Use simple stitches to sew hems on an item made using textiles. Evaluate their own work and add detail to an item made using textiles to improve it.	following the design criteria **Evaluate**- Judge how well something has worked and 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 **Pattern-** A paper cut out of the fabric needed to create a product **Seam allowance -**A 1-2cm border around the edge of fabric which allows the fabric to be joined without making the product smaller **Fastening** -Something used to hold two pieces of fabric together **Embellishments** - A decorative detail or features added to something to make it more attractive
A designer at the end of Year 5 will know: How mechanical systems such as cams create movement and how to measure, mark out and cut accurately and safely. They will know how to follow a recipe and the stages involved in bread proving and baking. They will be familiar with different kinds of bread and		A designer at the end of Year 5 will be able to: To investigate a range of products including mechanical systems and bread and textile products gathering information about their purpose and use this to create a design with annotations of how parts work.	

where the ingredients came from. Know that textiles product can be made from a combination of fabric shapes and made using a variety of stitches.	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, mark out, 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 and aims	Curiosity, Collaboration, Communication and Perseverance 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 Autumn – Year 6	Knowledge	Skills	Vocabulary
Mechanical Systems- Fairgrounds	Know about the history of the Ferris-Wheel, how it was designed and how it works: Identify the moving parts of a rotating ride/ object. Explain how they think a ride/object is powered and/or built. Understand how pulley and belt systems can be used to transfer movement. Describe how an electrical circuit with a motor can be used to create rotating parts. Describe ways of strengthening and reinforcing structures. Suggest ways in which ideas for frameworks could be developed to	Create a detailed diagram of their chosen ride/object. Design an appropriate electrical circuit for their ride. Manipulate their pulleys to create different movements. Use a variety of materials and components accurately. Follow a design to create a fairground ride with a rotating part. Work accurately and safely with a variety of tools, materials and electrical components. Identify ways of improving their fairground rides to create a finished product of a high quality. Evaluate a finished product fairly and suggest ways they could	**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 **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

	ideas for their own fairground ride designs. Make a decision about what kind of ride they will make. .Describe the process they will need to go through to successfully complete their product.	improve their product if they were to make it again. .	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 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
Key Unit Spring– Year 6	Knowledge	Skills	Vocabulary
Structures – Bird House Builders	Explain what a bird house is and why people construct them. Understand that different birds require different bird house features.	Research, observe and record bird behaviours and their needs. Draw 3-D diagrams and exploded diagrams.	**Design** - To make or draw plans for something, including how it will work **Make** -To create something, following a plan

	Describe the materials and features bird houses have. Understand what exploded and 3-D diagrams are used for. Make amendments to plans to make construction easier. Answer evaluation questions on their completed bird house. Understand why evaluating designs and products is important.	Select what tools, materials and equipment are needed to make objects with wood. Follow instructions to practise woodwork skills. Understand and adhere to safety precautions when working with wood and tools. Design a bird house to suit a specific bird. Draw diagrams of their bird house design. Follow a plan to make a bird house. Use retail ideas to promote their bird house to a prospective buyer.	**Evaluate**- To think about how well something works and what would be changed next time to improve it further, based against the success criteria **Exploded Diagram -** a drawing that shows how a product's parts fit together and how it can be assembled. **Design criteria** - A list of the things that the design should contain **Bench Hook** – A tool used in woodworking to hold a workpiece in place while sawing **Jig** - Serves as a template for repetitive tasks in measuring, cutting, drilling and more **Join** - Something that joins two pieces together
Key Unit Summer – Year 6	Knowledge	Skills	Vocabulary
Food and Nutrition - Burgers	Explain why nutrition facts are important to read Know that making better food choices can make us healthier. Recognise sauces can be matched to different burger patties. Make decisions on sides to match a particular burger flavour. Make informed decisions about the type of ingredients to use. Write a recipe for a burger. To know the functional properties	Read tables and interpret the information to answer questions. Follow a recipe to prepare and cook patties. Measure and mix ingredients correctly. Explain the cooking skills required when preparing burger patties. Make a simple sauce to go with a burger. Record information from tests they carried out.	**Design** - To create plans for something based on design criteria. **Make** -To create something, following a plan **Evaluate**- To check that decisions throughout the design and making process are going to plan and judge the quality of the final product, suggesting where improvements could be made.

	and aesthetic qualities of food. To know at least 4 key rules for storing and handling raw food. Evaluate their product, the cooking session and their own skills.	Investigate different products and evaluate them. Choose appropriate ingredients, equipment and method needed to cook burgers. Follow a plan to make a burger. Use cooking utensils and equipment correctly and safely.	**Nutrition facts** - The nutritional content of a food, including the amount of calories, fat, carbohydrates, protein, fibre, vitamins and minerals in a serving. **Pattie** – A small flat cake of minced or finely chopped food, especially meat. **Diet** - Food and drink consumed by a person **Balanced diet** -Eating the right amounts of food in each food group to maintain good health Food Hygiene - Ways food is kept safe and clean to eat so people don't get ill. **Ingredients** - Foods which are put together to make a food product. **Utensils** - Equipment or tools used food products
A designer at the end of Year 6 will know: 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. They will also know that a recipe can be adapted by adding or substituting one or more ingredients. They will know 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 correctly.		A designer at the end of Year 6 will be able to: To investigate a range of products including structures, electrical circuits, mechanical systems and savoury food; 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 and aims		Curiosity, Collaboration, Communication and Perseverance	

	Mutual respect - working together Tolerance - listening and respecting opinions of others Tolerance - learning about other cultures and diversity