Curriculum Progression- Design Technology- Year 3

		Year 3		
Topic Knowledge	**DT topic**	**Food** **Healthy and Varied Diet:** ***Savoury Salad (Potato, pea and feta)***	**Structures** **Shell structures:** ***Hedgehog home***	**Mechanical Systems** **Levers and Linkages:** ***School Display***
	Link to school values	**Together we are problem solvers** **Together we do our best**	**Together we are problem solvers** **Together we do our best**	**Together we are problem solvers** **Together we do our best**
	New Key Vocabulary	• fresh • sweet • savoury • dairy • texture • nutrition • hygiene • techniques • combine • utensils • method • presentation	• shell structure • free standing • three-dimensional • annotated sketch • prototype • strengthen • reinforce • dimensions	• mechanism • lever • linkage • slot • slider • loose pivot • fixed pivot • guide or bridge • system • input movement • output movement
	End points	*By the end of this unit, children will have worked in small teams to follow a recipe (Chickpea Salad) and learned how this recipe fits into a healthy and varied diet. Children will learn about the origin and nutritional value of the ingredients and have a chance to taste, smell and touch these individually through a sensory session. Children will practice the age appropriate skills needed to prepare and cook their recipe, focussing on cutting techniques. During the evaluation stage, children will have the opportunity to taste and evaluate their product and skills.*	*By the end of this unit, children will have researched environmental issues facing hedgehogs and created a design based on a set of criteria. Children will have developed their wood working skills to cut and join wood together to form a shell structure as part of a small team working together. During the evaluation stage, children will evaluate their product against the criteria and seek feedback from others.*	*By the end of this unit, children will have explored a range of levers and linkages created a physical design based on a given set of criteria. Children will have continued to develop their knowledge of levers and linkages to produce a school display featuring these mechanisms. During the evaluation stage, children will seek feedback from children across school and use this to evaluate their product against the success criteria.*
	Crucial knowledge (Understanding of skills and materials needed)	By the end of this unit, children will have developed the following knowledge and skills: 1. A recipe includes specific ingredients, measurements and equipment needed to make the final product. 2. A recipe includes a method, which much be followed accurately, to make the final product. 3. Choices can be made to add or remove ingredients based on the Eatwell guide to improve the dish's nutritional value. 4. Specific hygiene routines (handwashing, surface and equipment preparation and washing) are important to reduce and avoid foodborne illnesses and contamination. Specific cooking skills: 5. Measure raw ingredients accurately using measuring teaspoons and digital weighing scales. 6. Cut cooked and raw ingredients using kitchen scissors and a serrated knife with the bridge technique. 7. Combine cooked and raw ingredients by using a container to mix them. 8. Plate the final dish with a focus on presentation.	By the end of this unit, children will have developed the following knowledge and skills: 1. A shell structure is hollow shape made from 2-dimensional nets. 2. The outer surface of a shell structure gives it strength and form. 2. A net is a 2-dimensional shape that can be folded into a 3-dimentional object, such as a cube, cuboid or pyramid. 3. Shell structures are often made from sheet materials such as paper and card. 4. Joining techniques such as gluing, taping and slots are most suitable for joining a net to form a 3-dimensional structure. 5. Accurate folding and cutting is important to create a stable structure. 6. Sheet materials that form a shell structure can be stiffened and strengthened by laminating, corrugating and ribbing. Specific practical skills: 7. Set up a bench hook and secure it to a surface using a g-clamp. 8. Secure wood for cutting on the bench hook using a spring clamp. 9. Handle and use a junior hacksaw using the correct method. 10. Sand and shape cut ends of wood. 11. Secure two pieces of wood together using a glue gun safely to glue card to create secure, reinforced joins.	By the end of this unit, children will have developed the following knowledge and skills: 1. A mechanism is made up of a set of connected moving parts, including levers and linkages, that work together to create movement. 2. Levers and linkages are used within a mechanism to change direction of motion and make things move further or faster. 3. A lever is a rigid bar that moves around a fixed point called a pivot. 4. A pivot is a fixed point that holds a lever in place as it moves or rotates. 5. A linkage is a system of levers joined together to create movement. 6. Real-world examples of levers and linkages can be found in mechanisms such as scissors and see-saws or paper-based moving mechanisms like moving posters or interactive storybooks. Specific practical skills: 7. Use a ruler (centimetres and millimetres) to read and accurately measure and mark cuts on card for specific parts of the system. 8. Cut out measured and marked parts accurately. 9. Attach pivots accurately to create a loose or fixed pivot. 10. Mark and cut a slot for a guide or bridge.
	Context	Children will understand that they are following a recipe that has been given to them. They will know that the purpose of this project is to learn about a healthy and varied diet, using this	Children will understand that they are creating a home for hedgehogs. They will know that the purpose of the home is to protect hedgehogs based on the environmental issues they are facing. They will know that this	Children will understand that they are creating a moving mechanism display using levers and linkages. They will know that the purpose is to create an interactive display that demonstrates different forms for levers

		recipe to explore how this can be applied whilst expanding their cooking skills learned in Year 2. Children will use the Eatwell guide to understand how different food groups are included in the dish, with a focus on a healthy and varied diet. Children will practise the practical skills with the age appropriate equipment needed to complete this recipe and learn to follow a recipe accurately to create the final dish.	home will need to be of an appropriate size with materials for the environment they live in. Children will then create a specific set of design criteria based on their research and design and make their final product.	and linkages to make an image or piece of information move. They will know that different types of pivots will be needed in order for this for the system to function. Children will create a specific set of design criteria that they will follow to design and make and evaluate the final product.
	Evaluating existing products	- Children will receive a client design brief asking them to make a specific product (Potato, pea and feta salad), with a link to the ingredients and recipe needed. - Children will briefly research the history and culture surrounding the recipe, using paper sources. - Children will then complete a sensory evaluation session using the ingredients needed to make the product. During this session children will: - Have the opportunity to touch, smell and taste specific ingredients associated with their project, with a focus of recording textures and flavours. - Discuss the seasonality and origin of ingredients. - Understand how the nutritional facts and coverage of ingredients in reference to the Eatwell guide. - Discuss and explore other food options to cover areas of the Eatwell guide that have not been included. - Discuss and explore alternatives in consideration towards allergies and intolerances.	- Children will investigate and understand what a shell structure is in different contexts, with consideration towards the choice of materials, components and techniques that have been used to strengthen, stiffen and reinforce a structure. - Children will research different animal homes and how they are different, and what features they have. They will then look specifically at natural hedgehog homes and identify key features of the structure. - Children will then use this evaluation to support choices towards their own design.	- Children will investigate and understand how a system that moves within a product is made from a mechanism that includes levers, linkages and pivots, moves within a product (cards, storybooks and toys). - Children will identify the different parts of this mechanism and understand how each part contributes to the outcome of the system. They will be able to distinguish the difference between fixed and loose pivots and apply this to their project. - Children will then use this evaluation to support choices towards their own design.
	Key events and individuals	- During the evaluation process, children will learn about the chef Jamie Oliver and his work towards promoting a healthy lifestyle through cooking, focussing on his influence on and work with schools.	- During the evaluation process, children will learn about the history of shell structures through history, stopping at certain periods to examine the changes in materials and techniques used.	During the evaluation process, children will learn about how levers and linkages have been applied to products in different industries.
	Designing	- Children will learn about the different utensils (small pan with lid, mixing bowl, chipping board, serrated knife, kitchen scissors and mixing container) needed to make the recipe, and be able to describe their uses. - Children will **understand** a list of ingredients utensils and equipment needed to develop the recipe, in line with the design criteria, based on appearance, taste, texture and aroma. - Children will be able to explain the choices of ingredients and suggest potential alternatives to modify the recipe, explaining their choices for these. - Children will be able to **recite** the main stages of a recipe, listing ingredients, utensils and equipment. - Children will be able to understand and carry out appropriate hygiene routines (handwashing, surface and equipment	- Children will learn the importance of sketching and annotating their ideas, and generate an annotated sketch. - Children will generate a prototype using paper straws based on their annotated sketch, and will learn and experiment with different techniques and materials to reinforce the joins using pre-cut card. - Children will be able to explain their choice of materials (type and thickness of wood) according to functional and aesthetic qualities.	- Children will create an annotated sketch to communicate the idea, measurements and parts of their mechanism (display piece), considering the needs and wants of the user. - Children will be able to explain their choice of materials that make up the different parts of the system, according to functional and aesthetic qualities outlined in the design brief. - Children will measure and mark these separate parts onto a template, so that this can be used during the making progress.

		preparation and washing) to avoid foodborne illnesses and minimise the risk of contamination.		
	Making & Technical skills	Through a specific skills session, children will learn to use appropriate utensils and equipment to prepare and combine ingredients: - Learn about different types of knives and select a serrated type suitable for chopping different raw and cooked ingredients for their 7-8 age group. - Learn to use selected knife by chopping cooked and raw ingredients **using kitchen scissors** and the **bridge** technique. - Learn to use **digital scales** to measure ingredients accurately in line with the recipe. - Learn to use **teaspoon and tablespoon measurements** to portion raw ingredients. - Learn how to assemble raw ingredients ready to cook by **combining them using a mixing container.** - Learn how to safely cook a specific ingredient (potatoes) by **boiling.** - Learn how to present a dish with a focus on presentation.	When making their product, children will need to measure, score and cut several parts to build their structure. Children will: - Learn how to use a ruler (centimetres and millimetres) to read and accurately measure and mark joins and cuts on both wood and card. - Learn how to set up and secure a bench hook onto a table using a g-clamp. - Learn how to secure a square section piece of wood onto the bench hook using a g-clamp. - Learn how to handle and hold a junior hacksaw safely. - Learn how to cut a square section piece of wood using a junior hacksaw. - Learn how to finish and shape a cut by sanding it down. - Learn how to handle and use a glue gun safely. - Learn how to assemble the multiple pieces or wood into a cuboid structure, using card to strengthen joins.	When making their product, children will need to measure, score and cut several parts to create the parts to make the mechanism for their moving system. Children will: - Learn how to use a ruler (centimetres and millimetres) to read and accurately measure and mark cuts on card for specific parts of the system. - Learn how to use scissors to cut out measured and marked parts accurately. - Learn how to attach pivots accurately to create a loose or fixed pivot. - Learn how to mark and cut a slot for a guide or bridge. - Learn how to assemble separate parts to create a system using the above skills.
	Evaluating your own product	- Children will have the opportunity to eat a portion of their dish and evaluate against select criteria such as texture, taste and presentation. - Children will suggest personal strengths and areas for improvement in regards to this cooking experience.	- Children will test their final product against the conditions specified in the design brief, specifically strength of structure and joins. - Children will then evaluate their final product using the design criteria derived from the client brief, specifying if they were fully met, partially met or not met. - Children will have the chance to explain what went well and what they would change or improve if completing the project again in an expanded evaluation.	- Children will test each other's final product on the collective final product, focussing on the mechanism as a whole, making sure the multiple parts of the system are working correctly. - Children will then evaluate their final product using their own design criteria set during the evaluation stage, specifying if they were fully met, partially met or not met. - Children will have the chance to explain what went well and what they would change or improve if completing the project again in an expanded evaluation.

Curriculum Progression- Design Technology- Year 4

		Year 4		
Topic Knowledge	**DT topic**	**Cooking and Nutrition** **Healthy and Varied Diet:** ***Aloo Tikki (Spiced Potato Cakes) with dip***	**Textiles** **2D to 3D product:** ***Pencil Case***	**Electrical Systems** **Simple Circuits and Switches:** ***Torch***
	Link to school values	**Together we are problem solvers** **Together we do our best**	**Together we are problem solvers** **Together we do our best**	**Together we are problem solvers** **Together we do our best**
	New Key Vocabulary	• herb • spice • texture • seasonal • organic • origin • source • nutrition • allergies • intolerance	• function • aesthetic • joining methods • finishing techniques • template • seam • seam allowance • running stitch • over stitch	• simple circuit • series circuit • connection • fault • insulator • conductor • push-to-make switch • push-to-break switch • reed switch • toggle switch • input and output device • system
	End points	*By the end of this unit, children will have worked in small teams to follow a recipe (Aloo Tikka – Spiced potato cakes with dip) and learned how this recipe fits into a healthy and varied diet. Children will learn about the seasonality, origin and nutritional value of the ingredients and have a chance to taste, smell and touch these individually through a sensory session. Children will practice the age appropriate skills needed to prepare and cook their recipe, focussing on advancing their cutting techniques. During the evaluation stage, children will have the opportunity to taste and evaluate their product and skills.*	*By the end of this unit, children will have continued to develop their sewing skills from Year 2 and will now be able to competently use a back stitch and over stitch to join multiple pieces of material together to make a net to form a 3D pencil case. Children will have researched existing pencil cases and know that they are made from several 2D pieces to make a 3D product, and understand why the specific materials, fastenings and joining methods have been used. Children will design and make this product based on a set of criteria given by a client. During the evaluation stage, children will seek feedback from the client based on the skills and needs of the project.*	*By the end of this unit, children will have worked independently to make a torch, using a simple circuit, using their knowledge developed though their 'Electricity' topic in science. Children will also gain knowledge of how different switches work within a simple circuit in real life products (e.g. torches), and apply this knowledge to design their own torch for the client, following the brief. Children will make these using appropriately researched materials and evaluate their final product against the criteria.*
EIR	**Crucial knowledge (Understanding of skills and materials needed)**	By the end of this unit, children will have developed the following knowledge and skills: 1. A recipe includes specific ingredients, measurements and equipment needed to make the final product. 2. A recipe includes a method, which much be followed accurately, to make the final product. 3. Choices can be made to add or remove ingredients based on the Eatwell guide to improve the dish's nutritional value. 4. Specific hygiene routines (handwashing, surface and equipment preparation and washing) are important to reduce and avoid foodborne illnesses and contamination. Specific cooking skills: 5. Measure raw ingredients accurately using measuring spoons and digital weighing scales. 6. Cut raw ingredients using a serrated knife with both the bridge and claw technique. 7. Combine ingredients in a particular order by hand. 8. Use a frying pan to fry the combined raw ingredients until cooked. 9. Plate the final dish with a focus on presentation.	By the end of this unit, children will have developed the following knowledge and skills: 1. Function describes how a product works and helps meet the users needs. 2. Aesthetics describes the visual appearance and appeal of a product. 3. A 3D textile product is made from several 2D pieces of material joined together. 4. To join materials together, different joining methods such as sewing, adhesives (glue), stapling, pinning and taping. 5. Fastenings, such as zips, buttons and poppers can be used to secure the contents of a bag. 6. A prototype is a template model made up of 2D parts, or net, that can be used to test size, shape and function. Specific practical skills: 7. Thread a needle and tie a knot independently, with the understanding that this makes it secure. 8. Join two pieces of fabric together using an overstitch and back stitch. 9. Join a button to the fabric for function.	By the end of this unit, children will have developed the following knowledge and skills: 1. A complete (closed) circuit within an electrical product is needed for the electricity to flow and the device to work. 2. A broken (open) circuit means electricity cannot flow, and the device won't work. 3. A switch (such as push-to-make, push to break, reed and toggle) controls the flow of electricity by opening and closing the circuit. 4. A handmade switch can be made using materials that conduct electricity. 5. An exploded diagram shows the separate parts of a product and how they fit together. They show components that would usually be hidden in a solid drawing. Specific practical skills: 6. Cut and trim wire using wire cutters safely. 7. Select and cut and secure functional insulating materials to shape around exposed electrical components.
	Context	Children will understand that they are following a recipe that has been given to them, similar to what they experienced in Year 3. As a progression in Year 4, children will have the chance to	Children will understand they are creating a pencil case for a pupil in another class. They will know that the function of this product is to hold their current range of stationary, with aesthetic choices agreed through a	Children will understand that they are to design and make a torch for a spy character (James Bond) considering specific given criteria (e.g. slimline, waterproof etc). They will know that the purpose of the project is to apply

		modify this recipe and experiment with or add ingredients to ensure all food groups on the Eatwell plate are covered in the dish to promote a healthy and varied diet. Children will practise the practical skills with the age appropriate equipment that progresses from the skills learned in Year 3 needed to complete this recipe.	recorded discussion with the pupil (the client). They will then devise a specific set of design criteria that they will follow, to design and make and evaluate the final product.	their previous knowledge of insulators and conductors, circuits and switches with suitable materials to design and make a product to suit this brief. Children will know that they are evaluating the success of their product based on the criteria suggested by the client.
	Evaluating existing products	- Children will receive a client design brief asking them to make a specific product (Aloo Tikka - Spiced Potato Cakes with dip), with a link to the ingredients and recipe needed. - Children will briefly research the history and culture surrounding the recipe, using specified online sources. - Children will then complete a sensory evaluation session using the ingredients needed to make the product. During this session children will: - Have the opportunity to touch, smell and taste specific ingredients associated with their project, with a focus of recording textures and flavours. - Discuss the seasonality and origin of ingredients. - Understand how the nutritional facts and coverage of ingredients in reference to the Eatwell guide - Discuss and explore other food options to cover areas of the Eatwell guide that have not been included. - Discuss and explore alternatives in consideration towards allergies and intolerances.	- Children will receive a brief asking them to make a specific product (pencil case) for another pupil in their class. - Children will extract the key design criteria from the brief, and add specific criteria based on the needs and wants of the client (a pupil), and place these into a table that they will use to evaluate their final product. - Children will investigate and evaluate how design elements (appearance/function/ fastenings etc) of different pencil cases are chosen for an intended user and purpose. - Children will understand, through physical examples, that pencil cases are made from separate 2D pieces of material to form a 3D net. - Children will analyse the different materials used and understand why have been chosen in context of their properties for function, aesthetics and user. - Children will analyse the different joining methods and fastenings used and understand how these secure the materials and why they have been used in context of the function, aesthetics and user. - Children will analyse and compare a range of pencil cases with different features, and then use this evaluation to support choices towards their own design based on the design criteria.	- Children will receive a client brief asking them to make a specific product (slim-line spy torch that can be hidden) for James Bond (or similar spy character). - Children will extract the key design criteria from the client's letter, and place these into a table that they will use to evaluate their final product. - Children will firstly inspect and disassemble select examples of existing battery powered products incorporating switches, bulbs and buzzers. - Children will then focus on investigating and disassemble different practical examples of relevant battery-powered products (torches and or relevant lighting products). - Children will create a written evaluation of each product that includes: How the circuit built into the product and how the switch works, what materials have been used and why (focussing on conductors and insulators) and how is it suited to the intended purpose/user.
	Key events and individuals	- During the evaluation process, children will learn about the chef, restaurateur and business woman Garima Arora (the first Indian woman to win a Michelin Star) and her influence on cooking.	- During the evaluation process, children will learn about the evolution of the pencil case, looking at influential designs and the background of the product.	- During the evaluation process, children will learn about the evolution of electronic products that use a light as the main function.
	Designing	- Children will learn about the different utensils (Chopping board, serrated knife, measuring spoons, mixing bowl, pastry brush and frying pan) needed to make the recipe, and be able to describe their uses. - Children will **understand and modify** a list of ingredients utensils and equipment needed to develop the recipe, in line with the design criteria, based on appearance, taste, texture and aroma. - Children will be able to explain the choices of ingredients and suggest potential alternatives to modify the recipe, explaining their choices for these. - Children will be **recite and modify** the main stages of a recipe, listing any changes of ingredients, utensils and equipment. - Children will be able to understand and carry out appropriate hygiene routines (handwashing, surface and equipment	- Children will learn about the importance of creating prototypes and understand how they are important in testing the measurements and assembly of 2D pieces to make a 3D product. - Children will generate a realistic prototype made from paper showing the separate 2D pieces and joins. - Children will generate a 3D sketch of this product to include measurements, functional components and aesthetic choices and annotate these decisions that consider the needs of the user. - Children will be able to explain their choice of materials (hessian or felt) according to functional and aesthetic qualities in context to the user and purpose.	- Children will use the client's design criteria to make decisions on the following: - Children will select components to design a simple circuit that powers a bulb. - Children will design a shell to contain the circuit, explaining their choice of materials chosen to explain insulators and conductors. - Children will produce a realistic annotated sketch of their intended product, with an exploded diagram to show this internal simple circuit and shell separately. - Children will add measurements to their plan to specify lengths of wire that they will need to cut.

		preparation and washing) to avoid foodborne illnesses and minimise the risk of contamination.		
	Making & Technical skills	Through a specific skills session, children will learn to use appropriate utensils and equipment to prepare and combine ingredients: - Learn about different types of knives and select a serrated type suitable for chopping different raw or cooked ingredients for their 8-9 age group. - Learn to use selected knife by chopping a range of soft and hard raw ingredients using both bridge (learned in Y3) and new-to-year group **claw** technique. - Learn to use **both digital and manual scales** to measure dry ingredients accurately. - Learn to use measured spoons (e.g. i**ncremental teaspoon/tablespoon measurements** and correlating grams/millilitres.) - Learn how to assemble raw ingredients ready to cook by **combining them by hand.** - Learn how to safely cook the final product made from raw ingredients by **frying**. - Learn how to present a dish with a focus on presentation.	Through a specific skills session and during assembly and making of their product, children will: - Learn how to thread a needle and tie a knot to secure it. - Learn how to sew a back stitch on a single piece of material. - Experiment using a back stitch on different materials. - Learn how to sew an over stitch on a single piece of material. - Experiment using an over stitch on different materials. - Learn how to select and use the correct needle for the fabric. - Learn how to tie the thread off when the stitch is completed. - Learn how to sew a running stitch and overstitch to secure two pieces of material together and tie this off. - Learn how to join a button to the fabric for function.	When making their product, children will: - Learn to create a handmade switch using conductive materials - Learn to cut and trim wire using wire cutters safely. - Learn to select and cut functional insulating materials to shape around exposed electrical components. - Learn to secure functional insulating materials around exposed electrical components using secure fixings. - Learn to use materials to finish their product according to their functional and aesthetic properties, in line with the design brief.
	Evaluating your own product	- Children will have the opportunity to eat a portion of their dish and evaluate against select criteria such as texture, taste and presentation. - Children will have the chance to taste other children's dishes to compare the outcomes of using of different ingredients. - Children will suggest personal strengths and areas for improvement in regards to this cooking experience.	- Children will test their final product in the conditions specified in the design brief. - Children will then evaluate their final product using the design criteria derived from the client brief, specifying if they were fully met, partially met or not met. - Children will have the chance to explain what went well and what they would change or improve if completing the project again in an expanded evaluation.	- Children will test their final product in the conditions specified in the design brief. - Children will then evaluate their final product using the design criteria derived from the client brief, specifying if they were fully met, partially met or not met. - Children will have the chance to explain what went well and what they would change or improve if completing the project again in an expanded evaluation.

Curriculum Progression- Design Technology- Year 5

		Year 5		
Topic Knowledge	**DT topic**	**Cooking and Nutrition** **Celebrating Culture and Seasonality:** *Savoury and Fruit Muffins*	**Textiles** **Combining different fabric shapes:** *3D Character Toy*	**Structures** **Frame Structures:** *Freestanding structure to transport an object*
	Link to school values	**Together we are problem solvers** **Together we do our best**	**Together we are problem solvers** **Together we do our best**	**Together we are problem solvers** **Together we do our best**
	New Key Vocabulary	• seasonality • origin • nutrition • vitamins • nutrients • gluten • natural • processed • milling • grinding	• seam allowance • wadding • hem • overstitch • back stitch • blanket stitch • seam allowance • tacking • appliqué • embroidery	• frame structure • free standing • triangulation • stability • reinforce • stiffen • strengthen • strut • compression • tension • tie
	End points	*By the end of this unit, children will have worked in small teams to follow and modify a recipe for a client (Savoury and Fruit Muffins), and learned how this recipe fits into a healthy and varied diet with a* ***focus on seasonality****. Children will learn about the seasonality, origin and nutritional value of the ingredients and have a chance to taste, smell and touch these individually through a sensory session. Children will practice the age appropriate skills needed to prepare and cook their recipe, focussing on advancing a range of preparation techniques. During the evaluation stage, children will have the opportunity to taste and evaluate their product and skills*	*By the end of this unit, children will have researched existing products and created a design based on a set of criteria from the client. Children will have built on their skills and knowledge form Year 3 to develop their sewing skills to use an over stitch and backstitch to join fabric together. They will use different techniques and material, such as wadding and tacking, to from and join different fabric shapes to create a final product. During the evaluation stage, children will evaluate their product in conjunction with the client.*	*By the end of this unit, children will have researched and evaluated various frame structures, both small scaled prototypes and examples from real life, gaining an understanding the details of how these structures are made stable and strengthened. Children will create a set of design criteria based on this knowledge, then design their own freestanding frame structure to transport an object from a to b. During the evaluation stage, children will test their structure against the criteria and suggest areas of improvement.*
	Crucial knowledge (Understanding of skills and materials needed)	By the end of this unit, children will have developed the following knowledge and skills: 10. A recipe includes specific dry ingredients that are combined to make a base. 11. A base recipe can be modified to include various sweet or savoury ingredients corresponding to the users (client) preferences. 12. Using different savoury or sweet ingredients will change the method of preparation and cooking. 13. Ingredients based on the Eatwell guide to improve the dish's nutritional value, and in consideration to intolerances and allergies. 14. Processing an ingredient refers to any method or technique used to transform raw agricultural products into food items. E.g. Flour is processed by milling, grinding and adding other raw ingredients. Specific cooking skills: 15. Measure raw ingredients accurately using measuring spoons and digital weighing scales. 16. Peel, cut and grate raw ingredients safely using a serrated knife (both the bridge and claw technique), peeler and grater. 17. Combine ingredients by melting and mixing ingredients using a whisk. 18. Use an oven to cook the combined mix safely.	By the end of this unit, children will have developed the following knowledge and skills: 8. Different fabrics have properties (e.g. soft, stretchy) that are suited to the use and user of the product. 9. Reinforcing fabric by layering can improve its strength or durability. 10. Changing the seam allowance allows for stronger joins and adjustments. 11. Stiches can be used for aesthetics as well as a joining method. 12. A template can be used to accurately measure and cut materials. Specific practical skills: 13. Accurately cut pieces using fabric scissors around measured templates. 14. Thread a needle and tie it off independently. 15. Use a back stitch to join two pieces of material together, with consideration for seam allowance. 16. Use a blanket stitch to join two pieces of material together on the outside edges. 17. Use a running stich and/ or blanket stick for to create an embroidery design and/or applique and attach material for decoration.	By the end of this unit, children will have developed the following knowledge and skills: 1. A frame structure is a structure made from rods, beams 2. Frame structures are often rigid and support loads. 3. Scaffolding, bridges, climbing frames and shelters are real world examples of frame structures. 4. A free-standing structure is a structure that can stay upright by itself. 5. Frame structures often use joins and reinforcements to make it stronger and more stable. 6. Triangulation is a technique using triangles to strengthen a structure. Specific practical skills: 7. -To competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make and strengthen frameworks.

	Context	Children will understand that they are using recipe to modify and add to in response to a client's dietary needs and preferences. They will know that the purpose of this project is to learn about seasonality, using this recipe to explore how this can be applied whilst expanding their cooking skills and experimenting with different ingredients that alter the method. They will get the chance to add to the recipe to cover the different food groups on the Eatwell guide, utilising both savoury ingredients and seasonal fruit. Children will practise the practical skills, progressing from those learned in Year 3 and 4, with the age appropriate equipment needed to complete this recipe and learn to follow a recipe accurately to create a final dish.	Children will understand that they are creating a fabric character toy for a client (child in Year 2). They will know that the purpose of this fabric character toy is for the Year 2 pupil to have a personalised 'worry angel', to help with Year 3 transition and develop a relationship with that pupil through the design and evaluating process. Children will create a specific set of design criteria, based on the client's aesthetic choices gathered through a discussion, to design and make their product. They will then use these to evaluate their final product with the client.	Children will understand that they are creating a freestanding structure that will be used to transport an object (water/ball) based on the research and design criteria derived from the evaluation stage (looking at successful structures and identifying specific techniques that make it strong and stable). Children will develop prototypes of different frames and use and identify different techniques to join, reinforce and strengthen these structures, including triangulation. Children will then design their own freestanding frame structure as a team, and have the chance to build this using a variety of techniques. They will use the design criteria to test and evaluate their final products success.
	Evaluating existing products	- Children will receive a design brief asking them to make specific products (Savoury and Fruit Muffins). ▪ - Children will focus on exploring the origin and seasonality of ingredients, exploring which ingredients can be used at the time of year. - Children will use this research to provide a list of potential ingredients that can be added to the base mix for their chosen client to choose from. n will then complete a sensory evaluation session using various ents needed or which can be added to make the product. During this children will: - Have the opportunity to touch, smell and taste specific ingredients associated with their project, with a focus of recording textures and flavours. - Discuss the seasonality and origin of ingredients. - Understand how the nutritional facts and coverage of ingredients in reference to the Eatwell guide. - Discuss and explore other food options to cover areas of the Eatwell guide that have not been included. - Discuss and explore alternatives in consideration towards the client's preferences, allergies and intolerances.	- Children will build on their knowledge of creating a 3D product using 2D pieces in Year 3. - Children will investigate and analyse textile products linked to the context of the intended user, using specific products that use a range of materials, wadding and a variety of stitches to join separate pieces together. - Children will focus on two of these examples in detail, specifying why the techniques used are successful in regards to the making and longevity of the product. - Children will create a questionnaire to ask their client. This will contain the different options for materials, stitching and applique options derived from evaluating two products. - The questionnaire will then be used to develop a specific design criteria to fit the clients preferences. This will be used to evaluate their final product.	- Children will recall their knowledge of shell structures from Year 3. - Children will, through small scaled examples, research and understand they key techniques for building a strong and stable frame structure (how components are joined, reinforced, strengthened and shaped). - Children will then research a range of existing frame structures from real life, and identify and evaluate key techniques used. - Children could also carry out research using web-based resources to understand how to strengthen, stiffen and reinforce 3-D frameworks. - In small groups, children will then use this research and evaluation to create their own design criteria needed to design and make a strong and stable structure, capable of transporting an object from a to b.
	Key events and individuals	- During the evaluation process, children will learn about influential bakers such as Paul Hollywood, Nadiya Hussain and Duff Goldman.	- During the evaluation process, children will learn about influential people in the textile industry, focussing on both practical applications and fashion design.	During the evaluation process, children will learn about influential figures in relation to structural projects, such as buildings, bridges and other frame strictures.
	Designing	- Children will learn about the different utensils (knives, graters, peelers, mixing bowls, whisks, casings, cooking trays) needed to make the recipe, and be able to describe their uses. - Children will understand a list of base ingredients utensils and equipment needed to develop the recipe **and select and modify additional ingredients in line with their client's preferences and intolerances.**	- Children will draw an annotated sketch to show their initial design, detailing the separate pieces of materials to make a 3D product (building on Year 3 knowledge). - Children will be able to explain their choice of materials (felt or…) according to functional and aesthetic qualities that consider the needs and wants of the client. - Children will build on their knowledge templates, creating individual templates to show specific measurements, such as seam	- Children will begin the design phase by creating several small-scale prototypes based on examples from the evaluation phase, using paper art straws, focussing on applying various strengthening and joining techniques to reinforce joins using card, glue and elastic bands. Children will also apply their knowledge of triangulation to these. - Children will then create an annotated sketch, using exploded diagrams of joins, to detail their ideas as a small group.

		- Children will be able to explain the choices of ingredients and suggest potential alternatives to modify the recipe, explaining their choices for these in regards to the client's needs and wants. - Children will be able to **recite and modify** the main stages of a recipe, listing any changes of ingredients, utensils and equipment. - Children will be able to understand and carry out appropriate hygiene routines (handwashing, surface and equipment preparation and washing) to avoid foodborne illnesses and minimise the risk of contamination.	allowances, and account for the wadding that will be used. These will be used to cut the fabric needed to be sewn together to make their final product.	- Children will consider and detail the constraints of this project (types of materials and resources, money etc). on their initial design. - Children will produce a detailed, step-by-step plan listing tools and materials needed, justifying their choices using previous research.
	Making & Technical skills	h a specific skills session, children will learn to use appropriate s and equipment to prepare and combine ingredients: - Learn about different types of knives and select a type suitable for chopping different raw or cooked ingredients for their 9-10 age group. - Learn to use selected knife by chopping a range of soft and hard raw ingredients by **selecting the most appropriate method** - bridge and claw techniques (learned in Year 3 and 4). - Learn to use a handheld **peeler and grater** safely to prepare raw ingredients. - Learn to use both manual and digital scales independently to measure dry ingredients accurately. - Learn to use measured spoons (e.g. i**ncremental teaspoon/tablespoon measurements** and correlating grams/millilitres.) - Learn how to **combining raw ingredients by whisking,** focussing on the ideal consistency of the mix. - Learn how to safely cook the final product made from raw ingredients by **using an oven.** - Learn how to present a dish with a focus on presentation.	h a specific skills session, children will: - Learn how to sew both a backstitch and blanket stitch. ▪ - Experiment using these stitches on a range of materials. - Learn how to select the correct needle and thread for specific fabrics. - Learn how to use backstitch and overstitch to secure two pieces on material together. assembly of their final product, children will: - Learn how to accurately use their measured templates to cut pieces using fabric scissors. ▪ - Learn how to sew separate pieces of material together, allowing for seam allowance and changes in shape from wadding. - Learn how to use stiches to applique and attach material for decoration.	During the prototype stage, children will: - Learn how to join paper straws using different techniques such as creasing, flattened and glued, using internal pipe cleaner, sleeve around a joint and taping. - Learn how to reinforce a paper straw structure using triangulation. When making their final product, children will: - To competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make and strengthen frameworks.
	Evaluating your own product	- Children will have the opportunity to present their final dish to their client, who will evaluate the product against select criteria such as texture, taste and presentation. - Children will have the opportunity to eat a portion of their dish and evaluate against select criteria such as texture, taste and presentation.	- Children will test and evaluate their final 3D character toy against the client design criteria. - Children will also collate personal opinions from the client. - Children will describe what went well, and what they found challenging to explain how they could improve their product if the process were to be completed again.	- Children will test and evaluate their final freestanding frame structure against the design criteria created during the evaluation phase. - Children will then perform a more in-depth evaluation, critically analysing their product by providing comments on challenges and future improvements. - Children will have the opportunity to implement these changes to

		- Children will suggest personal strengths and areas for improvement in regards to this cooking experience.		improve their structure.

Curriculum Progression- Design Technology- Year 6

Topic Knowledge	**DT topic**	**Food** **Celebrating culture and seasonality:** *Ratatouille*	**Electrical Systems** **More complex switches and circuits:** *Pressure Sensitive Burglar Alarm*	**Mechanical Systems** **Pulleys and Gears:** Toy Vehicle
	Link to school values	**Together we are problem solvers** **Together we do our best**	**Together we are problem solvers** **Together we do our best**	**Together we are problem solvers** **Together we do our best**
	New Key Vocabulary	• herbs • spices • season • seasonings • seasonality • culture • source • carbohydrate • innovative	• series circuit • parallel circuit • insulator • conductor • switches: push-to-make, push-to-break, toggle. • input & output device • connection • fault	• drive belt • gear rotation • spindle • driver • follower • ratio • transmit • input • output • process
	End points	*By the end of this unit, children will have worked in small teams to prepare and cook a savoury dish (ratatouille) for their guest (client), based on given criteria and the client's needs and preferences. Children will **focus on understanding the cultural aspects** of this dish, and will have tasted and analysed a range of ingredients in reference to healthy eating **and building on their knowledge of seasonality**. Children would have practised appropriate preparation skills that utilise and advance on those built in the previous years, using select utensils and equipment. Children will prepare, cook and serve their main and side dish to their guest. During the evaluation stage, children will evaluate their final dish in conjunction with their guest.*	*By the end of this unit, children will have built on the skills learned during Year 4 and 6 science electricity topics, children will design and make a pressure sensitive alarm to protect using electrical components for a museum. Children will focus on implementing their understanding gained in their Year 6 science electricity topic to change the input and output devices to alternate volume and speed. Children will design and make a parallel circuit, within a casing, with a pressure switch that will trigger a sound or movement when the object is removed using appropriate equipment and materials. During the evaluation stage, children will have evaluated their product against the client's criteria.*	*By the end of this unit, children will have researched and explored existing products that function using pulleys and gears, and created a design based on a set of criteria from a client. Children will have used this knowledge to explore and construct mechanisms using pulleys and/ or gears using specialist equipment/ kits.* *Children will then construct their own toy car and utilise their new knowledge to design and make a mechanism to propel it forward.* *During the evaluation stage, children will evaluate their product in conjunction with the client.*
	Crucial knowledge (Understanding of skills and materials needed)	By the end of this unit, children will have developed the following knowledge and skills: 19. A recipe includes specific dry ingredients that are combined to make a base. 20. A base recipe can be modified to include various sweet or savoury ingredients corresponding to the users (client) preferences. 21. Using different savoury or sweet ingredients will change the method of preparation and cooking. 22. Ingredients based on the Eatwell guide to improve the dish's nutritional value, and in consideration to intolerances and allergies. 23. Processing an ingredient refers to any method or technique used to transform raw agricultural products into food items. E.g. Flour is processed by milling, grinding and adding other raw ingredients. Specific cooking skills: 24. Measure raw ingredients accurately using measuring spoons and digital weighing scales. 25. Peel, cut and grate raw ingredients safely using a serrated knife (both the bridge and claw technique), peeler and grater. 26. Combine ingredients by melting and mixing ingredients using a whisk. 27. Use an oven to cook the combined mix safely.	By the end of this unit, children will have developed the following knowledge and skills: 18. A series circuit is an electrical circuit where components are connected to create a single path for the current to flow. 19. Output devices are electrical components that produce an outcome e.g. bulbs and buzzers. 20. Input devices are electrical components that are used to control an electrical circuit e.g. switches or sensors. 21. Switches can be used to control specific parts of an electrical circuit. 22. Reed and tilt switches can be used to control the electrical circuits and responses in security systems. 23. A circuit diagram shows the layout of the electrical components using standardised symbols. 24. A computer control program can be used to enable an electrical product to work automatically in response to changes in the environment. Specific practical skills: 25. Safely cut, strip and join electrical wire using wire strippers and twist and tape to make a safe electrical connection. 26. Create a handmade switch using conductive and insulating materials that will react to changes in the environment or an external stimulus. 27. Create a parallel circuit that includes a switch and buzzer or bulb.	By the end of this unit, children will have developed the following knowledge and skills: 1. Pulleys use wheels and rope or belt to lift or move loads with less effort. 2. Pulleys change the direction of a force and make lifting a load easier. 3. Gears are toothed wheels that interlock and transfer motion from one part to another. 4. Gears can change the direction or speed of movement. 5. Gears and pulleys help control movement, speed and force. Specific practical skills: 6. Set up a bench hook securely and safely for cutting wood. 7. Secure multiple pieces of wood together using a glue gun safely to glue card to create secure, reinforced joins. 8. Use wheels and axles that allow their vehicle to move freely. 9. Attach mechanical system to a frame and assemble components by attaching

	Context	Children will understand that they are cooking a particular style of ratatouille dish for a nominated guest (KS2 teacher). They will know that the purpose of the project is to extend their learning about a healthy and varied diet, whist using the dish to explore culture and seasonality of the dish by incorporating specific ingredients alongside the Eatwell guide. Children will understand that the choices they have to modify the dish to their client's needs and wants, and this will challenge and expand their cooking skills through different ingredients that alter the skills and methods needed to complete the dish. Children will practise the practical skills, progressing from those learned in Year 3, 4 and 5, with the age appropriate equipment needed to complete this recipe and create their own method based on the ingredients chosen.	Children will understand that they are making a pressure sensitive alarm to protect an artefact from being stolen from a museum (the client). They will be given a design brief from the museum, through which they will derive several design criteria to design, make and evaluate their product against. They will know that they are using their previous knowledge, built through Year 4 and 6 learning on electricity and circuits from both science and design and technology topics, to make a safe and functioning circuit that needs to be modified to suit the clients need and wants. Children will then test each other's final products and evaluate the against the design criteria.	Children will understand that they will be making a vehicle using a motor to propel it. They will be given a design brief from a client, through which they will derive the design criteria on which they will base their designs and evaluation. They will know that they are using their experience of woodwork from Year 3 to make the vehicle frame, electrical knowledge from precious projects and science topics, and their new knowledge of pulleys and gears to create the final product. They will use these skills to assemble and make a toy vehicle that drives forward under its own power. Children will then test their vehicle against the design criteria.
	Evaluating existing products	- Children will understand the type of dish they are to modify and cook through a given design brief. They will further understand that they are to modify and cook this style of dish for a guest of their choice. ▪ - Children will research the history and culture of the dish using online sources and complete a short report to explain and celebrate the cultural importance of this dish. - Children will focus on the origin and seasonality of possible ingredients, with these options being considered when offering choices to the client. - n will then complete a sensory evaluation session using the ents needed to make the product through which they will: - Have the opportunity to touch, smell and taste specific ingredients associated with their project, with a focus of textures and flavours and record evaluations using tables. ▪ - Understand how the nutritional facts and coverage of base ingredients in reference to the eat well plate, and explore optional ingredients to expand their dish to incorporate all food groups. - Discuss and explore other food options to cover areas of the Eatwell guide that have not been included. - Discuss and explore alternatives in consideration towards the client's preferences, allergies and intolerances.	- Children receive a letter from a client (a museum), asking them to create an alarm for a valuable item on show. - Children will extract the key design criteria from the client's letter, and place these into a table that they will use to evaluate their final product. - Children will begin to investigate how electrical systems are used and applied in a variety of real-world applications, such as alarms and games. - Children will investigate and evaluate electrical products that include a computer control program that works automatically in response to changes in the environment using web-based research. - Children will detail this research in the form a written report focussing on three products.	- To analyse products and understand that mechanical and electrical systems have an input, process and an output. ▪ - To analyse products and understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.
	Key events and individuals	- During the evaluation process, children will learn about French chefs Raymond Blanc and Michel Roux and their influence on cooking.	- During the evaluation process, children will learn about Edwin Holmes, the inventor of the first electromagnetic burglar alarm in 1911 and his influence on following designs.	- During the evaluation process, children will learn about influential figures from the world of engineering. They will focus on the use of pulleys and gears within their products and how they have influenced the progression and use of these.
	Designing	- Children will generate a list of optional ingredients to add to the dish for their chosen client to choose from. - Children will generate a questionnaire to send to their client detailing the choices they have to modify the dish.	- Children will develop an exploded diagram to detail key functions and workings of their proposed product. - Children will draw a circuit diagram using the correct circuit symbols (as learnt in Y6 science).	- Children will generate ideas using physical resources to create a prototype. - Children will communicate ideas through design specification, annotated exploded drawings from different views. CAD (if possible).

		- Children will generate a list of ingredients needed for the base of their stir-fry. Children will be able to **explain the use of these ingredients based on the appearance, taste, texture and aroma they bring to the dish.** - Children will write the main stages (method) of the recipe, listing ingredients, key utensils and equipment, detailing reasons for their choices in relation to the client. - Children will select and be able to explain why they have chosen the utensils and equipment needed to cut, peel or grate their ingredients. - Children will create written hygiene routines (handwashing, surface and equipment preparation and washing) based on previous knowledge, to advise others on how to avoid foodborne illnesses and minimise the risk of contamination.	- Children will decide and detail the amount of cells needed to change the volume of the buzzer or speed of the motor. - Children will communicate innovative ideas to the client through a mock-up (using electrical equipment), changing the design based around their needs and wants. - Children will suggest ways in which computer control could improve their alarm system.	
	Making & Technical skills	h a specific skills session, children will: - **Select the most suitable knife** for chopping different ingredients (based on those available for their 10-11 age group. - Practise using selected knife by chopping different raw ingredients by **selecting the most appropriate method -** bridge and claw techniques (learned in all previous year groups). - **Independently select and use a peeler and grater** safely based on the type of raw ingredients. - Apply their learning of **using both manual and digital scales** independently to measure ingredients accurately. - **Independently** select and use measured spoons (e.g. i**ncremental teaspoon/tablespoon measurements** and correlating grams/millilitres.) - Learn how to safely cook the final product made from raw ingredients on a **hob using a deep stockpot.** - Independently select methods/ techniques to **combine ingredients, including the use of heat from a hob using pot**. - Whilst cooking the ingredients and assembling their final product, children will focus on **adding seasonings to enhance or modify the flavour.**	making their product, children will: - Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. - Demonstrate and enable methods for making secure electrical connections e.g use automatic wire strippers, twist and tape electrical connections, screw connections. - Create a parallel circuit that includes a switch sensitive to changes In the environment. - Learn how to create a handmade switch using conductive materials that will complete or break the circuit as a response to changes in the environment/ added stimuli.	making their product, children will: - To competently select from and use a range of tools and equipment to make a wooden frame for their vehicle that that is accurately assembled, reinforced and well finished. ▪ - Apply their knowledge of pulleys and gears to create a power unit that will propel the vehicle forwards using a motor. - To secure an electrical system safely using insulating materials.

		- Learn how **herbs can be used in the presentation** of the final dish.		
	Evaluating your own product	- Children will have the opportunity to present their ratatouille final dish to their client, who will evaluate the product against select criteria such as texture, taste and presentation. - Children will have the opportunity to eat a portion of their dish and evaluate against select criteria such as texture, taste and presentation. - Children will suggest personal strengths and areas for improvement in regards to this cooking experience.	- Children will test each other's final product in the conditions specified in the design brief. - Children will then evaluate their final product using the design criteria derived from the client brief, specifying if they were fully met, partially met or not met. - Children will detail what they would change or improve if completing the project again in an expanded evaluation to identify strengths and areas for development, considering others views towards areas for development. - Children will be given an opportunity to action these changes to improve their product.	- Children will test each other's final product in the conditions specified in the design brief. - Children will then evaluate their final product using the design criteria derived from the client brief, specifying if they were fully met, partially met or not met. - Children will detail what they would change or improve if completing the project again in an expanded evaluation to identify strengths and areas for development, considering others views towards areas for development. - Children will be given an opportunity to action these changes to improve their product.