DT Long Term Plan Year Five 2023-24

	Autumn Term	Spring Term-A Wonderful World	Summer Term-Back to the Future
Topic	**Electrical systems: Doodlers**	**Mechanical systems :making a pop-up book**	**Cooking and Nutrition: What could be healthier?**
Sticky Knowledge	Series circuits only have one flow of electricity To know when there is a break in a series circuit, all components turn off. To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. To know a motorised product is one that uses a motor to function.	To know that mechanisms control movement. To understand that mechanisms can be used to change one kind of motion into another. To understand how to use sliders, pivots and folds to create paper-based mechanisms. To know that a design brief is a description of what I am going to design and make. To know that designers often want to hide mechanisms to make a product more aesthetically pleasing.	To know that I can adapt a recipe to make it healthier by substituting ingredients. To know that I can use a nutritional calculator to see how healthy a food option is.
Vocabulary	circuit component configuration current develop DIY investigate motor motorised problem solve product analysis series circuit stable target user	design input motion mechanism criteria research reinforce mode	beef reared processed ethical diet Ingredients supermarket farm balanced
Suggested Tasks	**Wow-** Share with the children a range of toys/games that use electrical systems. Recap and recall the main parts of an electrical circuit. **Design-** Look at how factors can be changed on a product. Use design criteria effectively **Make-** Using clear steps to make a product	**Wow-** Share with the class a range of pop up and interactive books! Discuss what might appeal to the Y1 children and what they could base their books on. **Design-** Use a story board to support the design process (this could link to a current topic in Y1) **Make-** Make a pop-up book focusing on accuracy of the mechanisms **Evaluate-** Evaluate other's work and receive feedback to improve their own product	**Wow-** Ask children to discuss their favourite savoury dish. What do they think is a popular dish eaten at home (this might vary due to different cultures within school) **Design-** Adapt a traditional recipe (this is a good opportunity to involve parents/families). How can they make it appealing to families? **Make-** Follow a step by step method ad prepare food safely **Evaluate-** How is the recipe nutritionally different to the original?

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	Evaluate- Looking at how changes can affect a product. Use peer evaluation to analyse the effectiveness of the product.											
Skills linked to outcomes	**Design** Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. Developing design criteria based on findings from investigating Developing design criteria that clarifies the target user	**Make** Altering a product's form and function by tinkering with its configuration. Making a functional series circuit incorporating a motor. Constructing a product with consideration for the design criteria Breaking down the construction process into steps so that others can make the product	**Evaluate** Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses Determining which parts of a product affect its function and which parts affect its form Analysing whether changes in configuration positively or negatively affect and existing product. Peer evaluating a set of instructions to build a product.	**Technical (knowledge)** To know that series circuits only have one direction for the electricity to flow. To know when there is a break in a series circuit, all components turn off To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. To know a motorised product is one that uses a motor to function. To know that product	**Design** Designing pop-up book which uses a mixture of structures and mechanisms Naming each mechanism, input and output accurately Story boarding ideas for a book	**Make** Following a design brief to make a pop-up book, neatly and with focus on accuracy Making mechanisms and/or structures using sliders, pivots and folds to produce movement. Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result	**Evaluate** Evaluating the work of others and receiving feedback on their own work Suggesting points for improvement	**Technical (knowledge)** To know that mechanisms control movement To understand that mechanisms can be sued to change one kind of motion into another To understand how to use sliders, pivots and folds to create paper based mechanisms To know that a design brief is a description of what they are going to design and make To know that designers often want to hide mechanisms to make a	**Design** Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients Writing an amended method for a recipe to incorporate the relevant changes to ingredients Designing appealing packaging to reflect a recipe	**Make** Cutting and preparing vegetables safely Using equipment safely, including knives, hot pans and hobs Knowing how to avoid cross-contaminati on Following a step by step method carefully to make a recipe	**Evaluate** Identifying the nutritional differences between the different products and recipes Identifying and describing healthy benefits of food groups	**Technical (knowledge)** To understand where meat comes from- learning that beef is from cattle and how beef is reared and processed including key welfare issues To know that I can adapt a recipe to make it healthier by substituting ingredients To know that I can use a nutritional calculator to see how healthy a food option is To understand that cross

				analysis is critiquing the strengths and weaknesses of a product To know that configuration means how the parts of a product are arranged.				product more aesthetically pleasing				contaminati on means bacteria have been passed onto ready to eat foods and it happens when these foods mix with raw meat or unclean objects
Assessment Opportunities	Use the quiz at the beginning and end of the unit. Adapt the knowledge catcher to suit the needs/outcomes of your class. Use as part of the evaluation within the unit.				Use the quiz at the beginning and end of the unit. Adapt the knowledge catcher to suit the needs/outcomes of your class. Use as part of the evaluation within the unit.				Use the quiz at the beginning and end of the unit. Adapt the knowledge catcher to suit the needs/outcomes of your class. Use as part of the evaluation within the unit.			

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Previous and Past learning experiences	**Why this topic now?** **This topic follows on from Y4 topic Electrical Systems: Torches (Y4)**	**Why this topic now?** **This topic follows on from Y4 Making a sling shot car**	**Why this topic now?** **This topic follows on from Cooking and Nutrition: Eating Seasonally (Y3)**
National Curriculum Links	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 Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Evaluate their ideas and products against design criteria. Evaluate a range of existing products Investigate and analyse a range of existing products Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use electrical systems in their products	Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology. 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 Investigate and analyse a range of existing products Evaluate their ideas and products against 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, textiles and ingredients, according to their characteristics. Understand and use mechanical systems in their products	Understand how key events and individuals in design and technology have helped shaped the world Apply their understanding of computing to program, monitor and control their products Understand and apply 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. 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 Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology. Investigate and analyse a range of existing products Evaluate their ideas and products against design criteria.