# St Augustine's Long Term Plan - Design and Technology Intent

## Design and Technology

EYFS Prerequisite Skills for Design and Technology from Development Matters and Early Learning Goals

| EYFS | | | | | | |
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| | Advent 1 | Advent 2 | Lent 1 | Lent 2 | Pentecost 1 | Pentecost 2 |
| **F1** | Me and My Family | Light and Dark (colours) | People Who Help Us | Growing | Creepy Crawlies and Minibeasts | At the Farm |
| **F2** | Myself and My Super Power | Castles and Knights (fairy tales) | Space | Dinosaurs | Transport | Animals |

| **EYFS** | Personal, Social and Emotional Development | Physical Development | Understanding the world | Expressive Arts and Design |
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| **DM F1** | • Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them. | • Use large-muscle movements to wave flags and streamers, paint and make marks.<br>• Choose the right resources to carry out their own plan.<br>• Use one-handed tools and equipment, for example, making snips in paper with scissors. | • Explore how things work. | • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.<br>• Explore different materials freely, in order to develop their ideas about how to use them and what to make.<br>• Develop their own ideas and then decide which materials to use to express them.<br>• Create closed shapes with continuous lines, and begin to use these shapes to represent objects. |
| **DM F2** | | • Progress towards a more fluent style of moving, with developing control and grace.<br>• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.<br>• Use their core muscle strength to achieve a good posture when | | • Explore, use and refine a variety of artistic effects to express<br>• their ideas and feelings.<br>• Return to and build on their previous learning, refining ideas<br>• and developing their ability to represent them. |

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| | | sitting at a table or sitting on the floor. | | • Create collaboratively, sharing ideas, resources and skills. |
| **ELG** | | **Fine Motor Skills**<br>• Use a range of small tools, including scissors, paintbrushes and cutlery. | | **Creating with Materials**<br>• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.<br>• Share their creations, explaining the process they have used. |

| **Year 1/2 Cycle A** | **Advent 1** | **Lent 1** | **Pentecost 1** |
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| **Topic** | Mechanisms<br>**Wheels**<br>**(History-Windmill Toys)**<br>***Design and create their own structure and functioning windmill.*** | Cooking and Nutrition<br>**Fruit and Vegetables**<br>**(History Robin Hood Sherwood Forest)**<br>*Learn how to identify fruits and vegetables. Then apply this knowledge to design and make a smoothie.* | Mechanisms<br>**Making a moving story book**<br>**(History: Heroes)** |
| **National Curriculum** | **Design**<br>• Design purposeful, functional, appealing products for themselves and other users based on design criteria.<br>• Generate, develop, model, and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.<br>**Make**<br>• Select from and use a range of tools and equipment to perform practical tasks.<br>**Evaluate** | **Cooking and nutrition**<br>• Use the basic principles of a healthy and varied diet to prepare dishes.<br>• Understand where food comes from.<br>**Design**<br>• Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology<br>**Make**<br>• Select from and use a wide range of materials and components, including | **Design**<br>• Design purposeful, functional, appealing products for themselves and other users based on design criteria.<br>• Generate, develop, model, and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.<br>**Make**<br>• Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. |

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| | • Explore and evaluate a range of existing products.<br>• Evaluate their ideas and products against design criteria.<br>**Technical knowledge**<br>• Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. | construction materials, textiles and **ingredients,** according to their characteristics.<br>• Select from and use a range of tools and equipment to perform practical tasks [for example, **cutting,** shaping, joining and finishing]<br>**Evaluate**<br>• Evaluate their ideas and products against design criteria | **Evaluate**<br>• Explore and evaluate a range of existing products.<br>• Evaluate their ideas and products against design criteria.<br>**Technical knowledge**<br>• Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. |
| **Core Knowledge** | 1. Know how wheels move. (Ref 1).<br>Know what mechanism makes a toy or vehicle move forwards.<br>Know and explain how you could use an axle to make a wheel move and how they could secure this mechanism to the vehicle.<br>2. Know and identify what stops wheels from turning (Ref 2).<br>Know and explain why the vehicle isn't moving and how it could be adapted so that it moved more easily.<br>3. Know how to design a moving vehicle (Ref 3).<br>Know how to use units of measurement to accurately design a moving vehicle.<br>4 and 5 Know how to build a moving vehicle (Ref 4).<br>Know how to build a moving vehicle and explain how their model works.<br>6. Know how to explore and evaluate a range of existing products. KSH – Kind, specific, helpful)<br>Know how to evaluate my moving vehicle made from previous lesson.<br>Know how to evaluate their ideas and products against design criteria. | 1. Know the names of some fruits and vegetables. (Ref 1)<br>Know that some foods we call vegetables are actually fruits e.g. cucumber, peppers, tomato<br>Know that fruits have seeds and vegetables don't.<br>2. Know how to identify where plants grow and which parts we eat (Ref 2)<br>Know that fruits and vegetables grow in one of three places: on trees or vines, above the ground, below the ground.<br>Know fruits grow on trees or vines and vegetables grow above or below ground.<br>3. Know how to taste and compare fruit and vegetables. (Ref 3 - tasting)<br>Know how to describe appearance/feel, smell and taste of fruits and vegetables.<br>Know how to discern between the flavours and identifiable features of | 1. Know how to explore making mechanisms (Ref 1)<br>Know how to create moving models that use sliders.<br>Know how to explore and create mechanisms and look at how they can better control their movements using guides.<br>2. Know how to design and construct the story book background (Part 1 Design - Ref 2)<br>Know which template would be best for their story book.<br>Know how to design own background based on theme.<br>3. Know how to design a moving story book (Part 2 Design - Ref 2)<br>Know how to include one type of movement in their design.<br>Know how to include more than one type of movement in their design.<br>4. Know how to make my background (Part 1 Construct – Ref 3)<br>Know how to use a template.<br>Know how to construct a background relevant to the theme.<br>5. Know how to construct a moving picture (Part 2 Construct - Ref 3). |

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| | | fruits and vegetables when blended in a smoothie.<br>4. Know which ingredients make a good taste combination in a smoothie (Ref 4 - designing)<br>Know how to cut soft fruit safely using a claw grip.<br>Know and describe how to prepare some fruit and vegetables before they are eaten e/g peeling, slicing, mashing.<br>Know what they will include in response to their tasting.<br>Know what they will include or exclude in response to their tasting.<br>5. Know how to design packaging that reflects the contents of the product. (Ref 4)<br>Know what to include on the packaging e.g. images of the fruit used, ingredients.<br>Know how to appeal to the consumer by using an alliterative brand name, references to healthy eating.<br>6. Know how to explore and evaluate a range of existing products. KSH – Kind, specific, helpful) (Ref 4)<br>Know how to evaluate smoothie made from previous lesson.<br>Know how to evaluate their ideas and products against design criteria. | Know how to add one type of movement.<br>Know how to include more than one type of movement considering the length of mechanism.<br>6. Know how to explore and evaluate my finished product. KSH – Kind, specific, helpful) (Ref 4).<br>Know how to evaluate using a word bank.<br>Know how to evaluate the product against design criteria with a sentence finisher (Ref 4 – Version 2). |
| **Wider Knowledge** | • Know that wheels needs to be round to rotate and move.<br>• Understand that for a wheel to move it must be attached to a rotating axle. | • Know the importance of including a range of fruits and vegetables in a diet.<br>• Know the importance of washing fruits and vegetables before preparing. | • Know that a mechanism is the parts of an object that move together.<br>• Know that a slider mechanism moves an object from side to side. |

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| | • Know that an axle moves within an axle holder which is fixed to the vehicle or toy.<br>• Know that the frame of a vehicle (chassis) needs to be balanced.<br>• Know some real-life items that use wheels. | • Know how to prepare and sample a variety of fruits and vegetables.<br>• Know the health benefits of eating fruits and vegetables daily.<br>• Know that some fruits are high in natural sugars.<br>• Know how to develop knife skills and basic culinary techniques. | • Know that a slider mechanism has a slider, slots, guide and an object.<br>• Know that bridge and guides are bits of card that purposefully restrict the movement of the slider. |
| **Skills** | • Designing a vehicle that includes wheels, axles and axle holders, which will allow wheels to move.<br>• Creating clearly labelled drawings that illustrate movement.<br>• Designing a moving car for a given audience.<br>• Following a design to create moving car.<br>• Adapting mechanisms.<br>• Testing mechanisms, identifying what stops wheels from turning, knowing that a wheel needs an axle in order to move.<br>• Reviewing the success of a product by testing it with its intended audience. | • Identifying if a food is a fruit or a vegetable.<br>• Describe appearance, smell and taste.<br>• Chopping fruit and vegetables safely to make a smoothie.<br>• Peel, chop and grate a selection of vegetables<br>• Tasting and evaluating different food combinations.<br>• Suggesting information to be included on packaging.<br>• Designing smoothie carton packaging by – hand or an ICT software. | • Explaining how to adapt mechanisms, using bridges or guides to control the movement.<br>• Designing a moving story book for a given audience.<br>• Following a design to create moving models that use levers and sliders.<br>• Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.<br>• Reviewing the success of a product by testing it with its intended audience. |
| **Diversity Links** | • Know that people in Western Asia built the earliest known windmills more than 1000 years ago. The windmills were used to grind grain. | • Know that warmer climates enhances and speeds up the growth of crops.<br>• Know that China is the leading producer of fresh fruit and vegetables.<br>• Know that China has enough land to grow so much, especially apples and pears. | Know that Martin Luther King worked to change attitudes about equality towards people of different races.<br>Know that Emmeline Pankhurst worked to change attitudes about equality towards women. (Ref. Protected characteristics)<br>Case studies of Martin Luther King and Emmeline Pankhurst and their respective campaigns for equality.<br>Use as case studies of individuals who have fought for equality and had such an impact that they have changed attitudes in society. |

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| | | | Know how we live out the British Values of 'tolerance of people with different cultures and faiths in school.<br>Know how we live out the British Value of 'mutual respect' in school.<br>Know and explain how we live out the British Values of 'tolerance of people with different cultures and faiths in school.<br>Know and explain how we live out the British Value of 'mutual respect' in school. |
| **Vocabulary** | axle, axle holder, chassis, diagram, dowel, equipment, mechanism, wheel. | Fruit and vegetable names.<br>Sensory vocabulary:<br>Soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard.<br>Flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate. | Sliders, mechanism, adapt, design criteria, design, input, model, template, assemble, test. |

| **Year 3/4 Cycle A** | **Advent I** | **Lent I** | **Pentecost I** |
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| **Topic** | Electrical Systems<br>Electrical Posters (History-Stone age to iron age) | Mechanical systems<br>Making a slingshot car | Textiles<br>Cushions<br>(History: Victorians) |
| **National Curriculum** | **Design**<br>• 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.<br>• Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, | **Make**<br>• Select from and use a wider range of tools and equipment to perform practical tasks [for example, **cutting, shaping, joining and finishing],** accurately.<br>• Select from and use a wider range of materials and components, including **construction** materials, textiles and ingredients, according to **their** | **Design**<br>• Design purposeful, functional, appealing products for themselves and other users based on design criteria'<br><br>**Make**<br>• Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] |

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| | prototypes, pattern pieces and computer-aided design.<br><br>**Make**<br>• Select from and use a wider range of tools and equipment to perform practical tasks [for example, **cutting, shaping, joining and finishing],** accurately.<br>• 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.<br><br>**Evaluate**<br>• Investigate and analyse a range of existing products.<br><br>**Technical knowledge**<br>• Understand and use electrical systems in their products for example, series circuits incorporating switches, bulbs, buzzers and motors. | **functional properties** and aesthetic qualities.<br>•<br>**Evaluate**<br>• Investigate and analyse a range of existing products.<br>• Understand how key events and individuals in design and technology have helped shape the world.]<br><br>**Technical knowledge**<br>• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.<br>• Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] | • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics'<br><br>**Evaluate**<br>• **E**xplore and evaluate a range of existing products.<br>• Evaluate their ideas and products against design criteria. |
| **Core Knowledge** | 1.Know and understand the purpose of information design (Ref 1).<br>Know and explain the importance of information design.<br>Know and explain the purpose of information design, understanding the criteria for a successful design.<br>2. Know how to select information to develop a range of initial ideas for my design (Ref 2). | 1. Know how to build a car chassis (Ref 1)<br>Know that the chassis is the frame of a car on which everything else is built.<br>Know the benefits of adding extra reinforcement bars across the chassis<br>2. Know how to create launch mechanism. (Ref 1)<br>Know energy is the energy that something (object or person) has by being in motion e.g. the energy a swing has to keep moving.<br>Know that a car needs a launch mechanism to provide kinetic energy. | 1. Know how to sew cross-stitch and appliqué (Ref 1).<br>Know how to use a running stich to join two pieces of fabric together.<br>Know how to use a neat and considered cross stitch to join an appliqué patch to another piece of fabric and attempt to reverse applique.<br>2. Know how to design a product and its template (Ref 2).<br>Know how to label their design and leave a 1cm space around the edge of the template before cutting the fabric to allow for the seam. |

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| | Know reasons for my initial ideas for my design which relate to the electrical posters functions and purpose.<br>3.Know how to design an electrical poster (Ref 3).<br>Know how to design an electrical poster with two electrical components.<br>4 and 5. Know how to make an electrical poster based on my design (Ref 4).<br>Know how to make and assemble an electrical poster explaining and justify reason for their choices.<br>6. Know that it is important to assess and evaluate design ideas and posters against a list of design criteria. KSH – Kind, specific, helpful - own criteria created<br>Showcase their knowledge and skills further by evaluating their electronic poster with an audience.<br>Know and identify the things they found challenging and what they would do to remedy this next time. | 3. Know how to design a shape that reduces air resistance (Ref 2)<br>Know how to draw a net to create a structure from.<br>Know that air resistance can slow down a moving object and the shape of the object can reduce air resistance.<br>Know which shapes increase or decrease the speed of the car as a result of air resistance.<br>4. Know how to make a model based on a chosen design (Ref 3)<br>Know that nets are flat shapes that can be turned into 3D structures.<br>Know how to measure, mark and cut panels against the dimensions of a chassis.<br>5. Know how to assemble and test my completed product. (Ref 4)<br>Know how to test the speed of the car.<br>Know how to test other aspects of their design (How straight a line it travels in - if the axle/chassis isn't straight it will travel in a curve)<br>6. Know that it is important to assess and evaluate design ideas and models against a list of design criteria. KSH – Kind, specific, helpful) (Ref 4)<br>Know that smaller shapes create less air resistance and can move faster through the air when evaluating a product.<br>Know how to evaluate the speed of my design based on the understanding that some cars are faster than others as a result of: Body shape, stored energy in the | Know which materials to use and how they work together and know the effect of the choice of materials made.<br>3. Know how to decorate fabric using appliqué using running/cross stitch (Ref 3).<br>4. Know how to assemble a cushion (Part 1 Construct – Ref 4).<br>Know how to thread a needle, tie a knot and how to turn fabric inside out.<br>Know how to ensure stitches are tight and secure.<br>5. Know how to complete the cushion (Part 2 Construct – Ref 4).<br>Know how to leave space for a seam.<br>Know how to thread a needle, tie a knot and how to turn fabric inside out.<br>Know how ensure stitches are tight and secure.<br>6. Know that it is important to assess and evaluate design ideas and models against a list of design criteria. KSH – Kind, specific, helpful - own criteria created<br>Showcase their knowledge and skills further by evaluating their cushion with an audience.<br>Know and identify the things they found challenging and what they would do to remedy this next time. |

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| | | elastic band and accuracy of the angle in the chassis and axle. | |
| **Wider Knowledge** | • Know and understand the importance and purpose of information design.<br>• Know and understand how material choices (such as mounting paper to corrugated card) can improve a product to serve its purpose (remain rigid without bending when the electrical circuit is attached). | Know that cars (formula one) designs have developed over many years. | • Know that appliqué is a way of mending or decorating a textile by applying smaller pieces of fabric.<br>• Know that when two edges of fabric have been joined together is it called a seam.<br>• Know that is it important to leave space on the fabric for the seam.<br>• Understand that some products are turned inside out after sewing so the stitching is hidden. |
| **Skills** | • Carry out research based on a given topic (e.g. The Stone Age) to develop a range of initial ideas<br>• Generate a final design for the electric poster with consideration to the client's needs and design criteria<br>• Design an electric poster that fits the requirements of a given brief<br>• Plan the positioning of the bulb (circuit component) and its purpose<br>• Mount the poster onto corrugated card to improve its strength and withstand the weight of the circuit on the rear<br>• Measure and mark materials out using a template or ruler<br>• Fit an electrical component (bulb)<br>• Learn ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge)<br>• Evaluate-Learning to give and accept constructive criticism on own work and the work of others | 2. Build a Chassis structure following a model.<br>3. Create a launch mechanism and explain how it works.<br>4. Designing a shape that reduces air resistance.<br>3. Drawing a net to create a structure from.<br>3. Choosing shapes that increase or decrease speed as a result of air resistance.<br>4. Measuring, marking, cutting and assembling with increasing accuracy.<br>5. Making a model based on a chosen design.<br>6. Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of work-person-ship on performance. | • Designing and making a template from an existing cushion and applying individual design criteria.<br>• Following design criteria to create a cushion.<br>• Selecting and cutting fabrics with ease using fabric scissors.<br>• Threading needles with greater independence.<br>• Tying knots with greater independence.<br>• Sewing cross stitch to join fabric.<br>• Decorating fabric using appliqué.<br>• Completing design ideas with stuffing and sewing the edges.<br>• Evaluating an end product and thinking of other ways in which to create similar items. |

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| | • Testing the success of initial ideas against the design criteria and justifying opinions<br>• Revisiting the requirements of the client to review developing design ideas and check that they fulfil their needs. | | |
| **Diversity Links** | | Lewis Hamilton's father is black and Grenadian descent, his mother is White British. Hamilton was raised as a Catholic and is guided by his faith. He went with different makes of car based on their design and achieved four titles in a row (2017 – 2020) He is a prominent advocate against racism and for increased diversity in motorsport. | • Know that William Morris was a famous textile designer in the Victorian period.<br>• Know that William Morris designs were used to decorate the home on wall paper as well as soft furnishings. |
| **Vocabulary** | Information design, design, public, design criteria, research, initial ideas, sketch, bulb, develop, final design, electrical system, electric product, circuit, circuit component, bulb, battery, crocodile wires. | chassis, energy, kinetic, mechanism, air resistance, design, structure, graphics, research, model, template. | applique, design, fabric, running stitch, seam, cross – stitch, equipment, patch, thread, texture, knot. |

| **Year 5/6 Cycle A** | **Advent 1** | **Lent 1** | **Pentecost 1** |
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| **Topic** | Cooking and Nutrition<br>Adapting traditional recipes/ Understanding nutritional value | Textiles<br>Waistcoats-Compare modern Islamic clothing (History Early Islamic Civilization)<br>*Learn how to measure, cut and assemble fabric to create a waistcoat. They will draw a design in accordance with their own design criteria.* | Electrical Systems<br>Doodlers<br><br>(Science/Space link to solar systems) |
| **National Curriculum** | **Cooking and Nutrition**<br>• Understand and apply the principles of a healthy diet.<br>• Prepare and cook a variety of predominately savoury dishes using a range of cooking techniques. | **Design**<br>• Generate, develop, model and communicate their ideas through **discussion, annotates sketches,** cross-sectional and exploded diagrams, prototypes, **patterns pieces** and computer aided design. | **Design**<br>• 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. |

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| | • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.<br><br>**Design**<br>• 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.<br>• Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.<br><br>**Evaluate**<br>• Investigate and analyse a range of existing products.<br>• Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.<br>• Understand how key events and individuals in design and technology have helped shape the world. | **Make**<br>• Select from and use a wider range of tools and equipment to perform practical tasks.<br><br>**Evaluate**<br>• Understand how key events and individuals in design and technology have helped shape the world.<br>• Evaluate their ideas and products against their own design criteria and consider the views of others. | **Make**<br>• 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.<br><br>**Evaluate**<br>• Investigate and analyse a range of existing products.<br><br>**Technical knowledge**<br>• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.<br>• Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] |
| **Core Knowledge** | 1. Know where food comes from (Ref 1).<br>Know how beef is reared and processed.<br>Know and explain how beef is reared and processed and the ethical issues around farming.<br>2. Know what foods make up a balanced diet (Ref 2).<br>Know the nutritional differences between different products and give reasons as to why this might be based on the different ingredients and quantities. | 1. Know the importance of designing clothing with the target customer in mind.<br>Know that a template is a stencil made of metal, plastic or paper used for making many copies of a shape which helps to accurately mark out a design on fabric.<br>Know that they will be designing a waistcoat *(a formal vest- type jacket with no arms, usually worn over a shirt and under a jacket. They sometimes have buttons or pocket detailing)* using a template. (Teacher Planning) | 1. Know and understand how motors are used in electrical products (Ref 1).<br>Know how to identify simple circuit components and explain what a series circuit is.<br>Know some motorised products and explain their primary function.<br>2. Know what a doodler is and the factors that affect the product's form and function (Ref 2). |

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| | 3. Know how to adapt and design a traditional recipe (Ref 3).<br>Know how to calculate and compare two adapted recipes looking at nutritional values.<br>Know that the nutritional value of a recipe can change if you remove, substitute or add additional ingredients.<br>4. Know how to make my recipe following my design (Ref 4).<br>Know how to carefully follow a method to make a recipe justifying the reasons for my choices.<br>5. Know how to design appealing packaging that reflects my recipe (Ref 4).<br>Know how my packaging displays key features of my product and justify the reasons for my choices.<br>6. Know how to evaluate my work according to my design criteria. (KSH – Kind, specific, helpful).<br>Know how to reflect on things they would change or modify in their recipe.<br>Know how to justify reasons the recipe used in the product. | 2. Know how design a waistcoat. (Ref 1)<br>Know how to annotate their design.<br>Know how to add extra details to their designs with reasons for their choices of decorations, materials, colours and where they will join the fabric.<br><br>3. Know how to mark and cut fabric according to a design. (Ref 2)<br>Know how to draw accurately around parts of the template onto the fabric.<br>Know the importance of accuracy when marking and cutting out.<br><br>4. Know how to assemble a waistcoat. (Ref 3)<br>Know what a running stitch is and how to use it to join two pieces of fabric together.<br>Know how to make sure stiches are small, consistent in size, neat and follow the edge.<br>Know how to tie strong knots to secure the thread in place.<br><br>5. Know how to decorate your waistcoat. (Ref 4)<br>Know how to attach a secure fastening.<br>Know how to attach objects for decoration using thread.<br><br>6. Know how to evaluate my work according to my design criteria. (KSH – Kind, specific, helpful) (Teacher Planning)<br>Know how to reflect on things they would change or modify on their design. | Know what a doodler is and the function it has.<br>Know how to alter the way a product functions by changing parts of its configuration.<br>3. Know how to design a unique product based on research from previous lessons (Ref 3 - Design).<br>Know how to design the circuit based on design criteria.<br>Know how to design the circuit using a motor on the doodler.<br>4. Know how to construct a unique product based on research from previous lessons (Ref 3 - construct).<br>Know how to construct the circuit based on design criteria.<br>Know how to construct the circuit using a motor on the doodler.<br>5. Know how to develop a DIY kit for another individual to assemble their product.<br>Know how explain the steps required to assemble the product.<br>Know how to explain how to build and integrate an electrical system as part of the product.<br>6. Know how to evaluate my work according to my design criteria. (KSH – Kind, specific, helpful) (Teacher Planning).<br>Know how to reflect on things they would change or modify on their design.<br>Know how to justify reasons for electrical systems used in the product. |

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| | | Know how to justify reasons for choices of colour/material/design. | |
| **Wider Knowledge** | • Know where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues | • Know how create patterns from Islamic Art.<br>• Know about the use of geometric patterns in Early Islamic art.<br>• Know how to create a tessellating pattern and describe its 'code' to recreate on waistcoat.<br>• Know about early civilisation (Enrichment - Islamic speaker) | • Know that, in a series circuit, electricity only flows in one direction.<br>• Know when there is a break in a series circuit, all components turn off.<br>• Know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin.<br>• To know a motorised product is one which uses a motor to function. |
| **Skills** | • Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients.<br>• Writing an amended method for a recipe to incorporate the relevant changes to ingredients.<br>• Designing appealing packaging to reflect a recipe.<br>• Cutting and preparing recipes safely.<br>• Using equipment safely, including knives, hot pans and hobs.<br>• Knowing how to avoid cross-contamination.<br>• Following a step-by-step method carefully to make a recipe.<br>• Identifying the nutritional differences between different products and recipes.<br>• Identifying and describing healthy benefits of food groups. | • Designing a waistcoat in accordance to specification linked to set of design criteria to fit a specific theme.<br>• Annotating designs.<br>• Using a template when pinning panels onto fabric.<br>• Marking and cutting fabric accurately, in accordance with a design.<br>• Sewing a strong running stitch, making small, neat stitches and following the edge.<br>• Tying strong knots.<br>• Decorating a waistcoat -attaching objects using thread and adding a secure fastening.<br>• Learning different decorative stitches.<br>• Sewing accurately with even regularity of stitches<br>• Evaluating work continually as it is created. | • Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product.<br>• Developing design criteria based on findings from investigating existing products.<br>• Developing design criteria that clarifies the target user.<br>• Altering a product's form and function by tinkering with its configuration.<br>• Making a functional series circuit, incorporating a motor.<br>• Constructing a product with consideration for the design criteria.<br>• Breaking down the construction process into steps so that others can make the product.<br>• Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses.<br>• Determining which parts of a product affect its function and which parts affect its form. |

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| | | | • Analysing whether changes in configuration positively or negatively affect an existing product.<br>• Peer evaluating a set of instructions to build a product. |
| **Diversity Links** | British values – Mutual respect and tolerance of those with different faiths and beliefs. | Islamic art includes architecture, calligraphy, painted glass, illustrated patterns, pottery, and textile arts. (Link to History) | |
| **Vocabulary** | beef, reared, processed, ethical, diet, ingredients, supermarket. | accurate, adapt, annotate, design, design criteria, detail, fabric, fastening, knot, properties, running-stitch, seam, sew, shape, target audience, target customer, template, thread, unique, waistcoat, waterproof | circuit component, configuration, current, develop, DIY, investigate<br>motor, motorised, problem solve, product analysis, series circuit, stable, target user |