



Singleton Church of England Primary School

Progression of Skills and Knowledge

DT - Y3



	Year 3 –Cooking & Nutrition Eating Seasonally	Year 3 – Mechanisms/Mechanical Systems Pneumatic Toys	Year 3 – Structures Constructing a castle	Year 3-Textiles Cross stitch & applique
Previous unit and next unit	EYFS – Soup Y1 –Fruit & Vegetables Y2- A balanced diet Y4 – Adapting a recipe	No EYFS Y1-Making a moving story book Y1 - Wheels and axles Y2- Fairground Wheel Y2- Making a moving monster Y4- Making a sling shot	EYFS- Boats Y1 – Constructing a windmill Y2- Baby bears chair Y4- Fastenings	EYFS – Bookmarks Year 1- Puppets Y2 – Pouches Yr4 – Fastenings
KEY VOCABULARY	Climate, Dry climate, Exported, Imported, Mediterranean climate, Nationality, Nutrients, Polar climate, Recipe, Seasonal food, Seasons, Temperate climate, Tropical climate	Exploded-diagram, Function, Input, Lever, Linkage, Mechanism Motion, Net, Output, Pivot, Pneumatic system, Thumbnail sketch	Aesthetic Assemble Book sleeve Design criteria Evaluation Fabric Fastening Mock-up Net Running-stitch Stencil Target audience Target customer Template	Accurate, Applique, Cross-stitch, Cushion, Decorate, Detail Fabric, Patch, Running-stitch, Seam, Stencil, Stuffing, Target audience, Target customer, Template, Embellish, Pinking
SUBSTANTIVE KNOWLEDGE	<p>Knowledge - Eating Seasonally</p> <ul style="list-style-type: none"> To know that not all fruits and vegetables can be grown in the UK. To know that climate affects food growth. To know that vegetables and fruit grow in certain seasons. To know that cooking instructions are known as a 'recipe'. To know that imported food is food which has been brought into the country. To know that exported food is food which has been sent to another country. To understand that imported foods travel from far away and this can negatively impact the environment. To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre. To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health. To know safety rules for using, storing and cleaning a knife safely. To know that similar coloured fruits and vegetables often have similar nutritional benefits. 	<p>Pneumatic Toys</p> <p>Technical Knowledge</p> <ul style="list-style-type: none"> To understand how pneumatic systems, work. To understand that pneumatic systems can be used as part of a mechanism. To know that pneumatic systems operate by drawing in, releasing and compressing air. <p>Additional Knowledge</p> <ul style="list-style-type: none"> To understand how sketches, drawings and diagrams can be used to communicate design ideas. To know that exploded-diagrams are used to show how different parts of a product fit together. To know that thumbnail sketches are small drawings to get ideas down on paper quickly. 	<p>Constructing a castle</p> <p>Technical Knowledge –</p> <ul style="list-style-type: none"> To understand that wide and flat based objects are more stable. To understand the importance of strength and stiffness in structures <p>Additional Knowledge</p> <ul style="list-style-type: none"> To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose. To know that a façade is the front of a structure. To understand that a castle needed to be strong and stable to withstand enemy attack. To know that a paper net is a flat 2D shape that can become a 3D shape once assembled. To know that a design specification is a list of success criteria for a product. 	<p>Knowledge - cross stitch and applique</p> <ul style="list-style-type: none"> To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. To know that when two edges of fabric have been joined together it is called a seam. To know that it is important to leave space on the fabric for the seam. To understand that some products are turned inside out after sewing so the stitching is hidden.
MAKING CONNECTIONS Key knowledge / key questions	<p>Recall-Y2 A Balanced Diet</p> <p>Knowledge – a balanced diet</p> <ul style="list-style-type: none"> To know that 'diet' means the food and drink that a person or animal usually eats. To understand what makes a balanced diet. To know where to find the nutritional information on packaging. To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. To understand that I should eat a range of different foods from each food group, and roughly how much of each food group. To know that nutrients are substances in food that all living things need to make energy, grow and develop. To know that 'ingredients' means the items in a mixture or recipe. To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy. <p>To know that many foods and drinks we do not expect to contain sugar do; we call these 'hidden' sugars.</p> <p>Cycle A/B</p> <p>This links to Year 4 Adapting a recipe</p> <p>Knowledge - Adapting a Recipe</p> <ul style="list-style-type: none"> To know that the amount of an ingredient in a recipe is known as the 'quantity.' To know that it is important to use oven gloves when removing hot food from an oven. 	<p>Recall – Y2 Fairground Wheel</p> <p>Knowledge – Technical – Fairground wheel</p> <ul style="list-style-type: none"> To know that different materials have different properties and are therefore suitable for different uses. <p>Knowledge – Additional</p> <ul style="list-style-type: none"> To know the features of a Ferris wheel, include the wheel, frame, pods, a base an axle and an axle holder. To know that it is important to test my design as I go along so that I can solve any problems that may occur <p>Knowledge – Technical - Making a Moving Monster</p> <ul style="list-style-type: none"> To know that mechanisms are a collection of moving parts that work together as a machine to produce movement. To know that there is always an input and output in a mechanism. To know that an input is the energy that is used to start something working. To know that an output is the movement that happens as a result of the input. To know that a lever is something that turns on a pivot. To know that a linkage mechanism is made up of a series of levers <p>Knowledge – Additional</p> <ul style="list-style-type: none"> To know some real-life objects that contain mechanisms. <p>Cycle A/B</p> <p>This links to Year 4 Making a sling shot</p> <p>Knowledge – Making a Sling Slot</p> <p>Technical</p> <ul style="list-style-type: none"> To understand that all moving things have kinetic energy. 	<p>Recall- Y2 Baby bears chair</p> <p>Knowledge – Technical – Baby Bears Chair</p> <ul style="list-style-type: none"> To know that shapes and structures with wide, flat bases or legs are the most stable. To understand that the shape of a structure affects its strength. To know that materials can be manipulated to improve strength and stiffness. To know that a structure is something which has been formed or made from parts. To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. To know that a 'strong' structure is one which does not break easily. To know that a 'stiff' structure or material is one which does not bend easily <p>Knowledge – Additional</p> <ul style="list-style-type: none"> To know that natural structures are those found in nature. To know that man-made structures are those made by people. <p>Cycle A/B</p> <p>This links to Year 4 Pavilions</p> <p>Knowledge – Pavilions</p> <p>Technical</p> <ul style="list-style-type: none"> To understand what a frame structure is. To know that a 'free-standing' structure is one which can stand on its own. <p>Additional Knowledge</p> <ul style="list-style-type: none"> To know that a pavilion is a decorative building or structure for leisure activities. To know that cladding can be applied to structures for different effects. 	<p>Recall Y2- Pouches</p> <p>Knowledge – Technical – Pouches</p> <ul style="list-style-type: none"> To know that sewing is a method of joining fabric. To know that different stitches can be used when sewing. To understand the importance of tying a knot after sewing the final stitch. To know that a thimble can be used to protect my fingers when sewing <p>Cycle A/B</p> <p>This links to Year 4 Fastenings</p> <p>Knowledge Fastenings</p> <ul style="list-style-type: none"> To know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and Velcro. To know that different fastening types are useful for different purposes. To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions.

	<ul style="list-style-type: none"> To know the following cooking techniques: sieving, creaming, rubbing method, cooling. To understand the importance of budgeting while planning ingredients for biscuits 	<ul style="list-style-type: none"> To understand that kinetic energy is the energy that something (object/person) has by being in motion. To know that air resistance is the level of drag on an object as it is forced through the air. To understand that the shape of a moving object will affect how it moves due to air resistance. <p>Additional Knowledge</p> <ul style="list-style-type: none"> To understand that products change and evolve over time. To know that aesthetics means how an object or product looks in design and technology. To know that a template is a stencil you can use to help you draw the same shape accurately. To know that a birds-eye view means a view from a high angle (as if a bird in flight). To know that graphics are images which are designed to explain or advertise something. To know that it is important to assess and evaluate design ideas and models against a list of design criteria. 	<ul style="list-style-type: none"> To know that aesthetics are how a product looks. To know that a product's function means its purpose. To understand that the target audience means the person or group of people a product is designed for. <p>To know that architects consider light, shadow and patterns when designing.</p>	
Key Skills	<p>Design:</p> <ul style="list-style-type: none"> Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish. <p>Make:</p> <ul style="list-style-type: none"> Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination. Following the instructions within a recipe. <p>Evaluate:</p> <ul style="list-style-type: none"> Establishing and using design criteria to help test and review dishes. Describing the benefits of seasonal fruits and vegetables and the impact on the environment. Suggesting points for improvement when making a seasonal tart. 	<p>Design:</p> <ul style="list-style-type: none"> Designing a toy which uses a pneumatic system. Developing design criteria from a design brief. Generating ideas using thumbnail sketches and exploded diagrams. Learning that different types of drawings are used in design to explain ideas clearly. <p>Make:</p> <ul style="list-style-type: none"> Creating a pneumatic system to create a desired motion. Building secure housing for a pneumatic system. Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy. <ul style="list-style-type: none"> Selecting materials due to their functional and aesthetic characteristics. Manipulating materials to create different effects by cutting, creasing, folding and weaving. <p>Evaluate:</p> <ul style="list-style-type: none"> Using the views of others to improve designs. Testing and modifying the outcome, suggesting improvements. Understanding the purpose of exploded-diagrams through the eyes of a designer and their client. 	<p>Design:</p> <ul style="list-style-type: none"> Designing a castle with key features to appeal to a specific person/purpose. Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours. Designing and/or decorating a castle tower on CAD software. <p>Make:</p> <ul style="list-style-type: none"> Constructing a range of 3D geometric shapes using nets Creating special features for individual designs. Making facades from a range of recycled materials. <p>Evaluate:</p> <ul style="list-style-type: none"> Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison, to the original design. Suggesting points for modification of the individual designs. 	<p>Design:</p> <ul style="list-style-type: none"> Designing and making a template from an existing cushion and applying individual design criteria. <p>Make:</p> <ul style="list-style-type: none"> Following design criteria to create a cushion or Egyptian collar. Selecting and cutting fabrics with ease using fabric scissors. Threading needles with greater independence. Tying knots with greater independence. Sewing cross stitch to join fabric Decorating fabric using appliqué. Completing design ideas with stuffing and sewing the edges (Cushions) or embellishing the collars based on design ideas (Egyptian collars). <p>Evaluate:</p> <ul style="list-style-type: none"> Evaluating an end product and thinking of other ways in which to create similar items.
Key Assessment Opportunity	Key Assessment Opportunity-lesson 4 Lesson 4 – application of skills and knowledge – creating a recipe	Key Assessment Opportunity Application - Designing and Making a pneumatic toy The assessment comes in week 3/ 4 – construction and testing and evaluation	Key Assessment Opportunity Lesson 4 – application of skills and knowledge – Designing and making a book cover inclusive of fastenings Week 4 – assembling the Book Sleeve	Key Assessment Opportunity Lesson 4 – application of skills and knowledge – design and make and use a collar using cross stitch and applique