Singleton Church of England Primary School
Progression of Skills and Knowledge
DT - Y4

	Year 4 –Cooking & Nutrition Adapting a recipe	Year 4 – Mechanisms/Mechanical Systems Making a sling shot	Year 4 – Structures Pavilions	Year 4-Textiles Fastenings
Previous unit and next unit	**EYFS – Soup** **Yr. 1 –Fruit & Vegetables** **Yr. 2- A balanced diet** **Yr. 3 – Eating Seasonally** **Yr. 5 – What could be healthier**	**No EYFS** **Yr. 1-Making a moving story book** **Yr. 1 - Wheels and axles** **Yr. 2- Fairground Wheel** **Yr. 2- Making a moving monster** **Yr. 3- Pneumatic Toys** **Yr. 5 – Pop up book**	**EYFS- Boats** **Yr. 1 – Constructing a windmill** **Yr. 2- Baby bears chair** **Yr. 3- Constructing a castle** **Yr. 5- Bridges**	**EYFS – Bookmarks** **Year 1- Puppets** **Yr. 2 – Pouches** **Yr. 3 – Cross stitch & applique** **Yr. 5- Stuffed toys**
KEY VOCABULARY	Adapt, Budget, Cooling rack, Creaming, Equipment, Evaluation, Flavour, Ingredients, Method Net Packaging prototype, Quantity, Recipe, Rubbing, Sieving, Target audience, Unit of measurement, Utilities	Chassis, energy, kinetic, mechanism, air resistance, design, structure, graphics research model template	Cladding, Design criteria, Evaluation, Frame structure, Function, Inspiration Pavilion. Reinforce, Stable, Structure, Target audience, Target customer, Texture, Theme	Aesthetic Assemble Book sleeve Design criteria Evaluation Fabric Fastening Mock-up Net Running-stitch Stencil Target audience Target customer Template
SUBSTANTIVE KNOWLEDGE	**Knowledge - Adapting a Recipe** • 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. • To know the following cooking techniques: sieving, creaming, rubbing method, cooling. • To understand the importance of budgeting while planning ingredients for biscuits	**Knowledge – Making a Sling Slot** **Technical** • To understand that all moving things have kinetic energy. • 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. **Additional Knowledge** • 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.	**Knowledge – Pavilions** **Technical** • To understand what a frame structure is. • To know that a 'free-standing' structure is one which can stand on its own. **Additional Knowledge** • 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. • 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. • To know that architects consider light, shadow and patterns when designing.	**Knowledge Fastenings** • 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.
MAKING CONNECTIONS **Key knowledge / key questions**	**Recall- Y3 Eating seasonally** **Knowledge - Eating Seasonally** • 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. **Cycle A/B** This links to Year 5 What **could be healthier** **Knowledge - What could be healthier?**	**Recall – Y3 Pneumatic Toys** **Technical Knowledge** • 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. **Additional Knowledge** • 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. **Cycle A/B** This links to **Year 5 Pop-up book** **Knowledge – Pop Up Book** **Technical**	**Recall- Y3 -** **Constructing a castle** **Technical Knowledge –** • To understand that wide and flat based objects are more stable. • To understand the importance of strength and stiffness in structures **Additional Knowledge** • 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. **Cycle A/B** This links to Year 5 **Bridges** **Knowledge – Bridges** **Technical** • To understand some different ways to reinforce structures. • To understand how triangles can be used to reinforce bridges.	**Recall Y3- Cross stitch and applique** **Knowledge - cross stitch and applique** • 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. **Cycle A/B** This links to Year 5 stuffed toys **Knowledge – Stuffed Toys** • To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. • To understand that it is easier to finish simpler designs to a high standard. • To know that soft toys are often made by creating appendages separately and then attaching them to the main body.

	• 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-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.	• 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. **Additional Knowledge** • 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 properties are words that describe the form and function of materials. • To understand why material selection is important based on properties. • To understand the material (functional and aesthetic) properties of wood. **Additional Knowledge** • To understand the difference between arch, beam, truss and suspension bridges. • To understand how to carry and use a saw safely.	• To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely
Key Skills	**Design**: • Designing a biscuit within a given budget, drawing upon previous taste testing judgements. **Make:** • Following a baking recipe, from start to finish, including the preparation of ingredients. • Cooking safely, following basic hygiene rules. • Adapting a recipe to improve it or change it to meet new criteria (e.g. from savoury to sweet). **Evaluate:** • Evaluating a recipe, considering: taste, smell, texture and appearance. • Describing the impact of the budget on the selection of ingredients. • Evaluating and comparing a range of food products. • •Suggesting modifications to a recipe (e.g. This biscuit has too many raisins, and it falling apart, so next time I will use less raisins).	**Design**: • Designing a shape that reduces air resistance. • Drawing a net to create a structure from. • Choosing shapes that increase or decrease speed as a result of air resistance. • Personalising a design. **Make:** • Measuring, marking, cutting and assembling with increasing accuracy. • Making a model based on a chosen design. **Evaluate:** • Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance.	**Design**: • Designing a stable pavilion structure that is aesthetically pleasing and selecting • materials to create a desired effect. • Building frame structures designed to support weight. **Make:** Creating a range of different shaped frame structures. • Making a variety of free-standing frame structures of different shapes and sizes. • Selecting appropriate materials to build a strong structure and cladding. • Reinforcing corners to strengthen a structure. • Creating a design in accordance with a plan. • Learning to create different textural effects with materials. **Evaluate:** • Evaluating structures made by the class. • Describing what characteristics of a design and construction made it the most effective. • Considering effective and ineffective designs.	**Design**: • Writing design criteria for a product, articulating decisions made. • Designing a personalised book sleeve. **Make:** • Making and testing a paper template with accuracy and in keeping with the design criteria. • Measuring, marking and cutting fabric using a paper template. • Selecting a stitch style to join fabric. • Working neatly by sewing small, straight stitches. • Incorporating a fastening to a design. **Evaluate** • Testing and evaluating an end product against the original design criteria. • Deciding how many of the criteria should be met for the product to be considered successful. • suggesting modifications for improvement. • Articulating the advantages and disadvantages of different fastening types.
Key Assessment Opportunity	**Key Assessment Opportunity-lesson 4** Lesson 3/ 4 – application of skills and knowledge Final design / budget and biscuit bake	**Key Assessment Opportunity** Lesson 4 – application of skills and knowledge – design and make a slingshot car	**Key Assessment Opportunity** Lesson 3 & 4 – application of skills and knowledge – design and make a pavilion with Cladding	**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