Singleton Church of England Primary School
Progression of Skills and Knowledge
DT - Y5

	Year 5 –Cooking & Nutrition What could be healthier	Year 5 – Mechanisms/Mechanical Systems Pop-up book	Year 5 – Structures Bridges	Year 4-Textiles Stuffed toys
Previous unit and next unit	**EYFS – Soup** **Yr. 1 –Fruit & Vegetables** **Yr. 2- A balanced diet** **Yr. 3 – Eating Seasonally** **Yr. 4- Adapting a recipe** **Yr. 6 Come dine with me**	**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. 4 Making a sling shot** **Yr. 6– Automata Toys**	**EYFS- Boats** **Yr. 1 – Constructing a windmill** **Yr. 2- Baby bears chair** **Yr. 3- Constructing a castle** **Yr. 4 – Pavilions** **Yr. 6- Playgrounds**	**EYFS – Bookmarks** **Yr. 1- Puppets** **Yr. 2 – Pouches** **Yr. 3 – Cross stitch & applique** **Yr. 4- Fastenings** **Yr. 6 Waist coats**
KEY VOCABULARY	Beef ● Cross-contamination ● Diet ● Ethical issues ● Farm ● Healthy ● Ingredients ● Method ● Nutrients ● Packaging ● Reared ● Recipe ● Research ● Substitute ● Supermarket ● Vegan ● Vegetarian ● Welfare	Aesthetic ● Computer-aided design (CAD) ● Caption ● Design ● Design brief ● Design criteria ● Exploded-diagram ● Function ● Input ● Linkage ● Mechanism ● Motion ● Output ● Pivot ● Prototype ● Slider ● Structure ● Template	Abutment ● Accurate ● Arched bridge ● Beam bridge ● Coping saw ● Evaluation ● File ● Mark out ● Material properties ● Measure ● Predict ● Reinforce ● Research ● Sandpaper ● Set square ● Suspension bridge ● Tenon saw ● Test ● Truss bridge ● Wood	Accurate ● Annotate ● Appendage ● Blanket-stitch ● Design criteria ● Detail ● Evaluation ● Fabric ● Sew ● Shape ● Stuffed toy ● Stuffing ● Template
SUBSTANTIVE KNOWLEDGE	**Knowledge** - What **could be healthier?** • 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.	**Knowledge – Pop Up Book** **Technical** • 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.	**Knowledge – Bridges** **Technical** • To understand some different ways to reinforce structures. • To understand how triangles can be used to reinforce bridges. • 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.	**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 know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely
MAKING CONNECTIONS **Key knowledge / key questions**	**Recall-yr. 4 Adapting a recipe** **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 **Cycle A/B** This links to Year 6 Come dine with me **Knowledge - Come dine with me** • To know that 'flavour' is how a food or drink tastes. • To know that many countries have 'national dishes' which are recipes associated with that country. • To know that 'processed food' means food that has been put through multiple changes in a factory. • To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. • To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).	**Recall – yr. 4 Making a sling shot** **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.	**Recall- yr. 4 Pavilions** **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. **Cycle A/B** This links to Year 6 **Playgrounds** **Knowledge – Playgrounds** **Technical** • To know that structures can be strengthened by manipulating materials and shapes.	**Recall yr. 4 Fastenings** **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. **Cycle A/B** This links to Year 6 Waistcoats **Knowledge – Waistcoats** • To understand that it is important to design clothing with the client/ target customer in mind. • To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric. • To understand the importance of consistently sized stitches**.**

		Cycle A/B This links to **Year 6 Automata toys** **Knowledge - Automata Toys** **Technical** • To understand that the mechanism in an automata uses a system of cams, axles and followers. • To understand that different shaped cams produce different outputs **Additional Knowledge** • To know that an automata is a hand powered mechanical toy. • To know that a cross-sectional diagram shows the inner workings of a product. • To understand how to use a bench hook and saw safely. • To know that a set square can be used to help mark 90° angles.	**Additional Knowledge** • To understand what a 'footprint plan' is. • To understand that in the real world, design, can impact users in positive and negative ways. • To know that a prototype is a cheap model to test a design idea.	
Key Skills	**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-contamination. • Following a step by step method carefully to make a recipe. **Evaluate:** • Identifying the nutritional differences between different products and recipes. • Identifying and describing healthy benefits of food groups.	**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 structure that is able to support weight. • Creating a frame structure with a focus on triangulation. **Make:** • Making a range of different shaped beam bridges. • Using triangles to create truss bridges that span a given distance and support a load. • Building a wooden bridge structure. • Independently measuring and marking wood accurately. • Selecting appropriate tools and equipment for particular tasks. • Using the correct techniques to saws safely. • Identifying where a structure needs reinforcement and using card corners for support. • Explaining why selecting appropriating materials is an important part of the design process. • Understanding basic wood functional properties. **Evaluate:** • Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary. • Suggesting points for improvements for own bridges and those designed by others.	**Design**: • Designing a stuffed toy, considering the main component shapes required and creating an appropriate template. • Considering the proportions of individual components. **Make:** • Creating a 3D stuffed toy from a 2D design. • Measuring, marking and cutting fabric accurately and independently. • Creating strong and secure blanket stitches when joining fabric. • Threading needles independently. • Using appliqué to attach pieces of fabric decoration. • Sewing blanket stitch to join fabric. • Applying blanket stitch so the spaces between the stitches are even and regular. **Evaluate** • Testing and evaluating an end product and giving point for further improvements.
Key Assessment Opportunity	**Key Assessment Opportunity-lesson 4** Follow a recipe to produce a healthy Bolognese sauce. Complete a food product. Design packaging that promotes the ingredients of the Bolognese.	**Key Assessment Opportunity** Lesson 2 – application of skills and knowledge to include mechanisms and structure to make a pop-up book Quiz in lesson 4	**Key Assessment Opportunity** Lesson 4/5 Make a bridge. application of skills and knowledge to make a bridge	**Key Assessment Opportunity** Week 4 – Application – the making of the designed stuffed toy