St Nicholas C of E (VA) Primary School and Nursery

Design and Technology Curriculum Overview 2023-25 Year A

	Autumn	Spring	Summer
Values	Year A Compassion and Thankfulness Year B Generosity and Perseverance	Forgiveness and Truthfulness Trust and Respect	Service and Justice Friendship and Courage
Nursery	Knowing how to use different tools for different purposes Creating models with construction kits and recycled materials Joining things together in a variety of ways Cooking a variety of things like cookies, pinwheel pizza's, gingerbread man with adult support		
Reception	During their journey through reception the children will: Explore the textures, movement, feel and look of different media and materials. • Respond to a range of media and materials developing an understanding that they manipulate and create effects with these. • Use different media and materials to express their own ideas. • Construct with a purpose in mind using a variety of resources. Develop skills to use simple tools and techniques competently and appropriately. Select appropriate resources for a product and adapt their work where necessary.		
National Curriculum Expectation **Key Stage 1**	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. When designing and making, pupils should be taught to: **Design** design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology **Make** 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 **Evaluate** explore and evaluate a range of existing products, evaluate their ideas and products against design criteria **Technical knowledge** , build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.		

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	Cooking and nutrition As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from.		
Year 1 and 2 **Year A**	**Structures**: Making houses Design their own house in a Tudor or Stuart style and then make and evaluate their final product. **Skills:** Research the features of a Tudor house. Skills in basic joining techniques for 3D modelling using glue and tape **Design** Draw a labelled design of your model **Make** To add buttress to a wall or frame to make it stable Investigate how to attach a roof to their model making a way to support it eg a cardboard beam sat across the top of the house structure or lay model straws at intervals. Attach with glue or tape. Measure and check that the roof over hangs the building Practise making a working door and window shutters that use hinges to open and close. The children could create hinges by scoring and bending card and joining a second piece with masking tape. use basic tools eg scissors and snips safely and effectively, Make crease lines in paper using a ruler to make the hinges, Decorate and finish off your Tudor house with features that you have learnt about eg leading on the windows, brick tiles on the roof, **Evaluate** Consider ways to make their structures more stable. • Encourage the children to talk about their	**Mechanisms**: Fairground wheel To explore wheel mechanisms and design a Ferris wheel. **Skills:** Selecting a suitable linkage system to produce the desired motions. **Design** Designing a wheel. Selecting appropriate materials based on their properties. Selecting materials according to their characteristics. **Make** Following a design brief. **Evaluate** Evaluating different designs. Testing and adapting a design. **Knowledge:** To understand the history of Ferris wheels**.** To know that different materials have different properties and are therefore suitable for different uses. 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. **Vocabulary:**	**Cooking and Nutrition:** Balanced diet (Design and make a wrap) **Skills:** Designing a healthy wrap based on a food combination which works well together. **Design** Designing three wrap ideas based on a food combination which work well together. **Make** Chopping foods safely to make a wrap. Constructing a wrap that meets a design brief. Grating foods to make a wrap. Snipping smaller foods instead of cutting **Evaluate** Describing the taste, texture and smell of fruit and vegetables Taste testing food combinations and final products. Describing the information that should be included on a label Evaluating food by giving a score. **Knowledge:** 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 that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar.

	finished homes and the main features they have added. Discuss strengths and areas for development. **Knowledge:** What features would you find on a Tudor style building? What features would you find on a Tudor style building? How could you create a roof that is attached to the top of the Tudor building? How can we evaluate our models to check that they meet the design criteria? **Vocabulary:** Tudor houses, design, evaluate, wattle and daub, roof, joining, buttress, stability, tiled roof, folding, hinges, chimney	Design, design criteria, wheel, Ferris wheel, pods, axle, axle holder, frame, mechanism, waterproof, strong, weak, rotating, bricks, metal, wood.	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 'ingredients' means the items in a mixture or recipe. **Vocabulary:** balanced diet, balance, carbohydrate, dairy, fruit, ingredients, oils, sugar, protein, vegetable, design criteria
	<u>Enrichment opportunities:</u> School chef can talk about her job, visit to the London eye,		
National Curriculum Expectation **Key Stage 2**	When designing and making, pupils should be taught to: **Design** 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, generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Make** select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately, 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 **Evaluate** investigate and analyse a range of existing products, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, understand how key events and individuals in design and technology have helped shape the world **Technical knowledge** apply their understanding of how to strengthen, stiffen and reinforce more complex structures, understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages], understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors], apply their understanding of computing to program, monitor and control their products. **Cooking and Nutrition** Understand and apply the 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.		

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THE CHURCH OF ENGLAND

Lower KS2 Year A	**Cooking and Nutrition**: Eating Seasonally **Skills**:Describing how climate affects where foods grow. Identifying seasonal ingredients from the UK. **Design** Designing a recipe for a savoury tart **Make** Following the instructions within a recipe. Tasting seasonal ingredients Selecting seasonal ingredient Peeling ingredients safely. Cutting safely with a vegetable knife. **Evaluate** 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. **Knowledge:** 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 know that eating seasonal foods can have a positive impact on the environment. To know that similar coloured fruits and vegetables often have similar nutritional benefits To know that the appearance of food is as important as taste.	**Textiles**: Fastenings, book cover **Skills:** To understand that fabrics can be attached using various methods using zips, Velcro, toggles, press studs **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. **Knowledge:** 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	**Electrical and structure**: Viking boats with Crumble **Skills:** Researching, designing and making a Viking boat using individual drawing and design criteria **Design** Prepare pattern pieces as templates for their design. Plan the stages of the making process. **Make** Cut slots. Cut internal shapes. Select from a range of tools for cutting, shaping, joining and finishing. Use tools with accuracy. Select from techniques for different parts of the process. Select from materials according to their functional properties. Use appropriate finishing techniques. Use Crumble controller, Sparkles and appropriate algorithm to create flashing lights **Evaluate** Evaluate end-product. Understand that a product's function relies on material choices. Identify and explain some materials and explain their aesthetic and/or functional properties **Knowledge:** Develop more than one design or adaptation of an initial design.

	Vocabulary: appearance, arid, climate, complementary, country, cut, design, evaluate, export, fruit, grate, import, ingredients, Mediterranean, mock-up, mountain, peel, polar, seasonal, seasons, snip, taste, temperate, texture, tropical, vegetable, weather	their design is useful for checking ideas and proportions. **Vocabulary** Aesthetic, Assemble, Book sleeve. Design criteria, Evaluation, Fabric, Fastening, Mock-up, Net, Running-stitch, Stencil, Target audience, Target customer, Template	Plan a sequence of actions to make a product. Record the plan by drawing annotated sketches. Use prototypes to develop and share ideas. Think ahead about the order of one's work and decide upon tools and materials. Propose realistic suggestions as to how to achieve their design ideas. **Vocabulary:** design, sequence, annotated sketches, prototype, pencil, tone, pattern, shapes, joining, finishing, materials, finishing techniques, Crumble controller, Sparkles, evaluate
Upper KS2 Year A	**Textiles:** Stuffed Toys **Skills:** **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**	**Cooking and Nutrition**: Design a dish **Skills:** **Design** Writing a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken. **Make** Following a recipe, including using the correct quantities of each ingredient. Adapting a recipe based on research. Working to a given timescale. Working safely and hygienically with independence. **Evaluate** Evaluating a recipe, considering: taste, smell, texture and origin of the food group. Taste testing and scoring final products. Suggesting and writing up points of improvements in productions. Evaluating health and safety in production to minimise cross contamination.	**Structures:** Playground. **Skills:** **Design** Designing a playground featuring a variety of different structures, giving consideration to how the structures will be used. Considering effective and ineffective designs. **Make** Building a range of play apparatus structures drawing upon new and prior knowledge of structures. Measuring, marking and cutting wood to create a range of structures. Using a range of materials to reinforce and add decoration to structures. **Evaluate** Improving a design plan based on peer evaluation. Testing and adapting a design to improve it as it is developed. Identifying what makes a successful structure.

	Testing and evaluating an end product and giving points for further improvements. **Knowledge:** 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. **Vocabulary:** Accurate, annotate, appendage, blanket-stitch, design criteria, detail, evaluation, fabric, sew, shape, stuffed toy, stuffing, template	**Knowledge:** 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). **Vocabulary**: Equipment, flavours, ingredients, method, research, recipe, bridge method, cookbook, cross-contamination, farm to fork, preparation storyboard	**Knowledge:** To know that structures can be strengthened by manipulating materials and shapes. 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. **Vocabulary:** apparatus design criteria equipment playground landscape features cladding
	Enrichment opportunities Stem projects (For eg like the roots research project), After School Code Club run by our Computing Lead, School wide Bake Off, Visit to Tesco, farm to fork.		