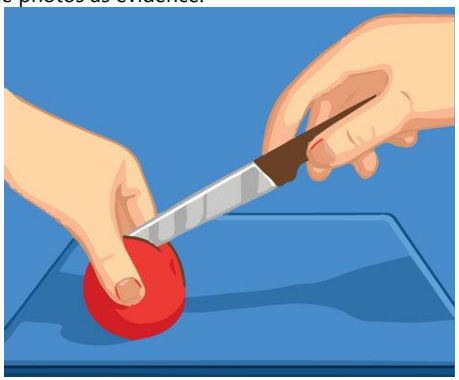
St Day and Carharrack Community School

Design Technology Curriculum – Long Term Plan

	Autumn	Spring	Summer
Year 1 National Curriculum	**Use the basic principles of a healthy and varied diet to prepare dishes** **Understand where food comes from. (NC)**	**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. (NC)**	**Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]** **(NC)**
Year 1	**Focus – Cooking Harvest Soup** **Career – chef, farming.** Brief: Design and cook and seasonal vegetable soup to be shared with friends and family at our KS1 harvest celebration. 1. **L.Q. What vegetables are harvested in autumn?** Suggestion: Inform the children about their outcome, discuss what harvest is and the kinds of vegetables that are harvested at this time of year. Consider a trip to Trevaskis Farm where the children can look around at the different vegetables and choose a pumpkin to use in their soup. Children could sort images of fruits and vegetables based on the time of year they are in season or record what they have learned by drawing harvest vegetables and labelling them in their DT book. **Food, health and nutrition** 2. **L.Q. Which vegetables should we include in our harvest soup?** Suggestion: Allow children to sample various cooked harvest vegetables. Children can rate each one using a star/smiley face system to record their opinions in DT books. Discuss how some vegetables need to be cooked to be consumed and look at how they change once cooked. **Food, health and nutrition** 3. **L.Q. How can we use knives safely?**	**Focus – Textiles – cross curricular link to science topic (materials.)** **Career – toy design and manufacturing.** Brief: design and create a sock puppet that can be used to teach our reception children about the zones of regulation and our different emotions. (Week 1 – request parents donate any clean odd socks to school for this project, specifying no trainer socks.) 1. **L.Q. What is a sock puppet?** Suggestion: look at a variety of images of sock puppets or real puppets, what do they all have in common? What do they like about them? Which features would they want to have in their own? What colours do they prefer? What do they dislike? Capture pupil voice to be recorded in DT books. **Research, plan and design.** 2. **L.Q. What features should my puppet have?** Suggestion: using a template, children should draw their puppet. They should consider whether their puppet is a person, an animal or a mythical creature/monster/alien and add features using simple shapes. The children should indicate colours they plan to use.	**Focus – Construction – cross curricular link to science – plants.** **Career – Environmentalist, wild life preservation, biologist, agriculture, farming.** Tip – email parents to request materials and begin collecting art materials from week 1. Brief: Using recycled equipment design and make an animal habitat to improve our outdoor spaces. This could be a bug hotel, bird feeder, bee bath, bat box, hedgehog house etc. 1. **L.Q. Which materials are most weather resistant?** Suggestion: look at a range of materials – wood, plastic, paper, cardboard, metal etc. Conduct research to see which material is best suited to being left outside for long periods of time. This could be done by either leaving them outside for a week or by simulating conditions e.g. get them wet (rain), which blow away easily (wind), which could animals accidentally eat? Record findings in DT books. **Research, plan and design.** 2. **L.Q. What animals visit our school field and what do they need to survive?** Suggestion: explore the school field looking for evidence of wild life – bugs, bees, birds, rabbit holes, hedgehogs, bats etc. Decide

Suggestion: Introduce the children to the bridge method to use a knife. Perhaps make a small fruit salad or cut some cucumber to eat as snack, ensure fruit is soft to support children to learn this method safely. Discuss the risk of using a knife. Take photos of children completing this task, stick a step by step in DT books using the photos as evidence.



Food, health and nutrition

4. L.Q. What different equipment can be found in the kitchen and what do they do?

Suggestion: explore a range of cooking equipment such as peelers, graters, colanders, sieves, scales, chopping boards, spatula, serving spoon etc. Challenge the children to match the items to their rolls e.g. peelers remove the skin off fruits and vegetables. In particular highlight the difference between similar items such as frying pans and boiling pans or various size spoons. Can the children identify the equipment they think they will need to make their soup? Record using photos and pupil voice, maybe a matching activity.

Food, health and nutrition

5. L.Q. Can I make a harvest soup?

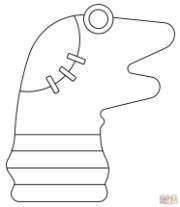
Suggestion: Make a harvest soup to be served at the KS1 Harvest festival.

Manufacture

6. L.Q. What did our families think of our soup?

Suggestion: Present the soup at the KS1 harvest festival to parents. Ask families to rate the soup using a star or number scale. In the next DT lesson review the feedback and discuss what the children liked about the soup and the process of making the soup and what they didn't like. Capture pupil voice.

Evaluate



Research, plan and design.

3. L.Q. Which materials would be best for making a sock puppet?

Suggestion: present the children with a tray of materials they could use for their sock puppet, some that will work well and others that would not be appropriate. E.g. felt, fabric scraps, googly eyes, buttons, paper, wool, ribbon, pebbles, cardboard, pipe cleaners etc. Split the page of the DT book in two, children should sort materials in to appropriate materials or inappropriate materials.

Research, plan and design.

4. L.Q. How can I join materials together?

Suggestion: with scraps of fabric, practise different ways of joining them together, these can be stuck in DT books. Staples, glue, tying, safety pin, sewing (using safety needles.) Discuss which works best. The final piece will be made using glue.

Research, plan and design.

5. L.Q. How can I make a sock puppet?

Suggestion: Using choices made in the past lessons create sock puppets using PVA glue and various materials. Consider stuffing the socks to help the children visualise the final shape while adhering their features.

Manufacture

6. L.Q. How successful was my sock puppet?

Suggestion: stick an image of the children's sock puppets in their DT book. Using a smiley face rating system the children as a class which creature you would like to make a habitat for. Look at existing examples to generate a list of common features/success criteria. Record in DT books.

Research, plan and design.

3. L.Q. Can I design a junk model habitat?

Suggestion: look at existing examples of the habitat you have chosen to make. Look for common features and make a note of them as a class. The children should draw their own design and annotate each of the key features on the class list with written or printed labels to ensure they have included them all.

Research, plan and design.

4. L.Q. Can I make a junk model habitat?

Suggestion: Make a habitat using recycled materials.

Manufacture

5. L.Q. Can I set up a test to see how effective my design was?

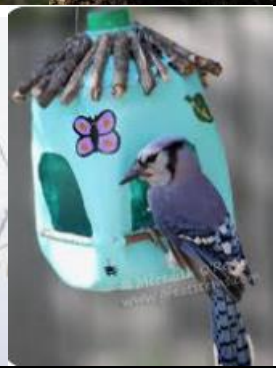
Suggestion: Discuss different ways you could test your habitat. E.g. if it is a bird feeder you could weigh the food and see if any of it has gone when you weight it again, you could check for movement of items, you could look for signs of life like droppings and footprint, you could leave food in a habitat and see if it is gone. Make a decision as a class and set up your test. Take photos of this and record plan in DT book.

Evaluate

6. L.Q. How effective was my habitat?

Suggestion: After a week or two check on the habitats. Using a rating system from 1 – 5 rate the effectiveness of the design against success criteria e.g. How well did my design withstand weather? 1-5, Are there signs of animals using my habitat? Discuss EBI and WWW and record in books.

Evaluate

	should rate themselves against their success criteria. Example of a smiley face rating can be found in DT CPD packs. **Evaluate**	
Outcome Harvest soup to be shared with parents. 	**Outcome** Sock puppets   	**Outcome** Recycled animal habitat.    
Key Vocabulary Designer, product, equipment, make, farm, planting, animals, growth, tradition, hygiene, safety, clean, portion, vegetables, taste, texture, thickness, appearance, smell.	**Key Vocabulary** Textiles, fabric, materials, adhere, join, features, texture, sew, glue, staple, product, construct, tools.	**Key Vocabulary** Construct, product, outcome, environmentally friendly, habitat, wildlife, recycle, reuse, repurpose.
Progression Map Coverage: **Research, plan and design** **Manufacture** **Evaluate** • Identify successes and next steps. **Food, health and nutrition** • Explain that some ingredients need to be prepared before they can be eaten	**Progression Map Coverage:** **Research, plan and design** • Identify some key features of an existing product. • Generate some ideas of their own. • Can explain their ideas orally. **Manufacture** • Explain what they are making. • Select appropriate resources and tools.	**Progression Map Coverage:** **Research, plan and design** • Plan an outcome through pictures with labels/annotations. • Identify some key features of an existing product. **Manufacture** • Use found items/junk-modelling to create. • Describe the materials using different words

	• Explain that some equipment has a special job and know what that special job is, e.g. colander, peeler. • Understand that food is a basic requirement of life • Understand that we need food to grow, be active and maintain health • Talk about foods they like and dislike with reasons • Identify a wide variety of fruit and vegetables available which can be grouped and individually named • Make food choices that are based on a number of factors, such as health, event, hygiene, growing	• Explain which tools they are using and why. • Know how to and use tools safely. • Cut materials using scissors • Join materials and components together in different ways. **Evaluate** • Evaluate their own and others' artwork and make suggestions for improvement **Food, health and nutrition**	• Arrange pieces of the construction before building • Make a structure/model using different materials **Evaluate** • Describe how their product works. • Make links between their own designs and products from another designer **Food, health and nutrition**
	Key Concepts Research, plan and design. / Manufacture / Evaluate / Food, health and nutrition	**Key Concepts** Research, plan and design. / Manufacture / Evaluate / Food, health and nutrition	**Key Concepts** Research, plan and design. / Manufacture / Evaluate / Food, health and nutrition
Year 2 National Curriculum	**Build structures, exploring how they can be made stronger, stiffer and more stable. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics (NC)**	**Evaluate their ideas and products against design criteria Technical knowledge (NC)**	**Explore and evaluate a range of existing products (NC)**
Year 2	**Focus – Construction – cross curricular link to history.** **Career – sailor, engineer, designer, scientist, geographer, explorer, environmentalist, historian.** Brief: Ernest Shackleton and his crew's ship – The Endurance – sank in Antarctica, leaving them stranded in the harsh polar environment. This half term you will be working in teams to design and make a boat that we will test at the end of the process. These boats will be from recycled materials and must float on water. We will test	**Focus – Cooking** **Career – health and safety officer, inspector, chef, risk assessor.** Brief: Consider the hazards we may face when cooking and handling food. Using the knowledge you acquire, bake traditionally Cornish treats to share with your families. **1. L.Q. What foods are traditionally associated with Cornwall?** Suggestion: What foods do the children associate with living in Cornwall? Share with the class that they will be making Hevva	**Focus – Textiles – Batik** **Career – textile artist, fashion designer, seamstress, tailor.** For this project each child will need a plain white canvas object e.g. pencil case, tote bag etc to decorate. These will need to be purchased in bulk before starting the project. **1. L.Q. What is batik?** Suggestion: look at a range of batik clothing and items, what do the children notice about them. Discuss how batik is done and how it makes the object for valuable. Collect pupil voice, what do

the boats to see which design can hold the most amount of weight before sinking.

For this project I recommend emailing parents to send some rubbish for junk modelling. Think of things like plastic bottles, fruit punnets etc, bottle lids can be useful for details like port holes. Paper art straws and scrap paper may be useful for a mast etc.

1. **L.Q. What are the features of a ship?**

Suggestion: Look at several images for different ships, modern and historical examples. Annotate the common features that all boats share. Discuss which type of ship Shackleton had, what materials are the made from and why have those materials/features been used? Record in DT book.

Research, plan and design.

2. **L.Q. Which materials and water resistant?**

Suggestion: In small groups, give the children to a range of materials e.g. tin foil for metal, plastic, lolly stick for wood, fabric, paper, cardboard etc. Introduce the children to the words 'absorbent' and 'water resistant' and explain that we are looking for the most water resistant materials for our design. Allow the children to submerge the materials in some water and observe what happens. The children should order the materials in their DT book from what they thought was the most waterproof to least waterproof.

Research, plan and design.

3. **L.Q. Can I design a ship that can float and hold a lot of weight?**

Suggestion: Show the children several examples of the materials they will have to choose from when they come to make their boats. Children should draw their design thinking carefully about what each section will be made from. Pupils should annotate the item they will use for each part of their boat.

Research, plan and design.

4. **L.Q. Can I build a junk model ship?**

Suggestion: In small groups the children should use the materials provided to build their boat based upon their designs in the sketchbooks. Take photos for DT books.

Manufacture

5. **L.Q. Can my ship successfully meet the brief?**

cake. Look at a recipe for making hevva cake and why this is connected with Cornwall. Explore the ingredients. Collect pupil voice throughout.

Food, health and nutrition

2. **L.Q. What hazards may we come across when cooking?**

Suggestion: looking at an image of a kitchen, ask children to circle potential dangers and hazards, can they spot them all? Talk about each hazard individually: sharp objects, wires, heat, spillages, slipping, glass etc. Discuss what can be done to avoid these hazards. Record this in DT books.

Food, health and nutrition

3. **L.Q. Why is hygiene important when handling food?**

Suggestion: discuss the definition of food hygiene, what might happen if you aren't hygienic when handling food and what methods cooks may use to stay hygienic while cooking. Create a set of rules to be followed when cooking in class.

Food, health and nutrition

4. **L.Q. Can we risk assess our classroom before cooking?**

Suggestion: list hazards discussed in previous lesson. Allow children to move around the word and tick whether these hazards are present in the classroom. Once the audit is complete, discuss as a class how you can avoid hazards and contamination throughout the cooking process.

Food, health and nutrition

5. **L.Q. Can I make Cornish hevva cake?**

Suggestion: https://blog.seasaltcornwall.com/hevva-cake-recipe-the-cornish-chef/ follow this link for a recipe, BBC good food has a less authentic but simpler recipe if needed.

Manufacture

6. **L.Q. How success was our hevva cake?**

Suggestion: children should rate their hevva cake based on several against several criteria using a star or number system. Discuss WWW and what would be EBI next time.

Evaluate

the children like about batik? What do they dislike? Record in DT books.

Research, plan and design.

2. **L.Q. What is a relief?**

Suggestion: inform the children that batik is a relief process and explore the process of making a relief pattern with the children. This is where negative space is left to reveal a design. This can be achieved in a number of ways which the class can explore in their DT books. Some examples of relief processes they can use are making rubbings with a crayon on a rough surface, drawing in a white pencil crayon and then shading over it in another colour to reveal the image and drawing in a white wax crayon and painting over it in watercolour.

Research, plan and design.

3. **L.Q. Can I design a batik pattern?**

Suggestion: Look at a range of batik patterns again, the children should use these to inform their designs. Stencils or 2D shapes may be helpful in creating a consistent repeat pattern. The children should create three patterns and choose their favourite. They should indicate which is their chosen design in their DT books. The chosen design is the design they must use on their final outcome.

Research, plan and design.

4. **L.Q. Can I produce a repeat pattern on fabric?**

Suggestion: The children may lightly draw their designs on their bag/pencil case etc. Following these lines, using a fine paintbrush pupils should apply PVA glue to the lines as neatly as possible before leaving it to dry. This glue should be applied quite thickly. You may want to put a piece of card inside the item being painted to prevent both sides sticking together.

Manufacture

5. **L.Q. Can I replicate a batik pattern on fabric?**

Suggestion: Before the lesson dilute acrylic paint in water 1:1. WARNING – acrylic paint is not washable, you may wish to ask

	Suggestion: Fill a large container with water. With the class gathered around place small weights in the boat, slowly increasing until the boat sinks. Complete a table recording how much weight each boat can carry to compare. Record in DT books. **Evaluate** **6. L.Q. How could I improve the design on my ship?** Suggestion: Look at the table of results from the last lesson. Which ones were the most successful? Do they have any common features? What was the being fault in their own design? Children should annotate a photo of their own ship with additions and changes they would make if they completed the activity again. **Evaluate**		parents to provide t-shirts for this lesson that they don't mind getting messy. The class should apply the paint to their design, it doesn't matter whether some of the paint goes on top of the glue. Allow these to dry fully, once dry the pencil cases should be hand washed in warm water, this will dissolve the glue a reveal the batik pattern. This can be done with or without the children but they should be aware that this step has taken place. **Manufacture** **6. L.Q. How well did I reproduce the batik process?** Suggestion: Look at the completed items, discuss as a class what went well and what was difficult about making the designs. Ask the children to work with a partner, swapping outcomes pupils should write one WWW and make one suggestion on how the design could be improved next time. They should be provided a list of sentences to choose from. The children should be supported to think critically and decide which sentence from the list applies to their peer the most. These should be recorded in DT books. **Evaluate**
	Outcome Junk modelling, making choices about materials. Outcomes to be tested in water, gradually adding more weight to see which was the best material choice and evaluating WWW and EBI. 	**Outcome** Traditional Cornish hevva cake. 	**Outcome** 
	Key Vocabulary Strong, stable, diagram, joining, assemble, model, components, make, repurpose, recycle, reuse, float, buoyancy, weight, materials.	**Key Vocabulary** Tradition, texture, hygiene, safety, baking, culture, celebration, taste, fruit, ingredients, weigh, equipment, occasion, clean, portion, appearance, cooking.	**Key Vocabulary** Template, country, culture, customise, relief, colour, pattern, repetition, negative, inverse image, batik.

	Progression Map Focus **Research, plan and design** • Generate ideas through comparing existing products. • Plan an innovative product. • Identify appropriate tools and materials explaining their choices. • Describe their design by using pictures, diagrams and words. **Manufacture** • Measure materials to use in a model or structure. • Select appropriate tools for a task. • Cut a variety of materials using a range of tools • Join materials together to create a product • Describe materials and their properties using a range of vocabulary • Make sensible choices of which material to use for their construction • Identify how to and make their structure stronger, stiffer or more stable **Evaluate** • Assess how well their product works through testing. • Explain what they would change if they were going to make their product again. • Explain what prior knowledge helped them to form their designs. **Food, health and nutrition**	**Progression Map Focus** **Research, plan and design** **Manufacture** • **Evaluate** • Explain what they would change if they were going to make their product again. **Food, health and nutrition** • Use a range of simple equipment • Use basic cooking skills to make a dish • Explain the hygiene and safety rules, which need to be followed before, during and after cooking • Explain that people eat different food and meals according to the time of day, who they are, where they are from and the occasion • Know that everyone should eat at least 5 portions of fruit and vegetables every day • Use basic food handling, hygienic practices and personal hygiene, including how to control risk by following simple instructions • Experience food from their own heritage and explain their opinion about it. • Explain the part that food plays in special social occasions • Show a deeper understanding of the country they are studying, their food and customs • Consider that food processing can affect appearance, texture, odour and taste of food • Make food choices that are based on a number of factors, such as health, event, hygiene, growing	**Progression Map Focus** **Research, plan and design** • Magpie features from existing products. • Replicate a design of an existing product. **Manufacture** • Create an item that fulfils a purpose. • Use processes that require precision. **Evaluate** • Make comparisons between their own artwork and other artists or designers • Articulate what they are trying to express in their own designs and products • Make suggestions for improvement in their own and others' products **Food, health and nutrition**

	Key Concepts				Key Concepts				Key Concepts			
	Research, plan and design.	Manufacture	Evaluate	Food, health and nutrition	Research, plan and design.	Manufacture	Evaluate	Food, health and nutrition	Research, plan and design.	Manufacture	Evaluate	Food, health and nutrition
Year 3 National Curriculum	**Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. (NC)**				**Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. (NC)**				**Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Understand and apply the principles of a healthy and varied diet. (NC)**			
Year 3	**Focus – textiles** **Career – textile artists, crafter, haberdasher, fashion designer, tailor, seamstress.** **Brief –** using fabric and other textiles design and make a Christmas ornament that can be sold at the Made in St Day Christmas Fair or at the Christmas happening event. The product should be able to be hung on a tree or decorate a home, Christmas themed and require no sewing. If making rag wreaths or wool gonks (see outcome images below), email families early on to request any old fabric in your chosen colours or wool. **1. L.Q. What features should our Christmas decoration have?** Suggestion: Look at a range of existing Christmas decorations. Create a survey to be sent home to parents with questions decided on as class giving multiple choice options. E.g. what colours do you use to decorate your home at Christmas? With a list of colours for parents to choose from. **Research, plan and design.** **2. L.Q. Where can I find inspiration for my design?** Suggestion: Provide the children with magazines, printed images and other mixed media to create a mood board of images, colours and materials that inspires them.				**Focus – construction – cross curricular link to history.** **Career – gardener, farmer, landscaper, engineer, environmental careers.** **Brief –** as we move towards summer, our school allotment will begin to grow again and will need to be regularly watered. Unfortunately, we have no natural water source like the Nile to flood the land and no water tap on the field. Currently, we must carry water from the water butt by hand, one watering can at a time. Design a system that can be used to transport water from the water butt to the allotment using the equipment provided, reducing the amount of manual labour and time taken to water the space. **1. L.Q. How do farmers irrigate their crops and which method is the most effective?** Suggestion: share 'problem' with class, maybe take them outside to see the space you are describing. Look at how the Nile floods to irrigate the fields and discuss why this wouldn't work for out setting. Look at different systems that exist weighing up pros and cons of each. Record notes in DT book. Follow link below for list of different irrigation types and examples. https://www.cdc.gov/healthywater/other/agricultural/types.html **Research, plan and design.** **2. L.Q. How do different tools and equipment transport water?** Suggestion: Provide the children with a range of equipment. E.g. hose, buckets, drain pipe, straws, plastic bottles. Allow the children the chance to experiment with each material,				**Focus - cooking** **Career – chef, caterer, inspector, health and safety officer, risk assessor, nutritionist.** **Brief –** Your class will be hosting a summer picnic for your parents. Create three simple dishes, two savoury and one sweet to serve to your families. One of the savoury dishes must be vegetarian/vegan, your second savoury dish must be gluten free and the dessert must be safe for someone who is lactose intolerant. All dishes must be nut free. All three dishes when consumed all together should represent the eatwell plate. **1. L.Q. What are dietary requirements?** Suggestion: share with the children that some people are limited by what they can consume, that some foods and drinks cause people to have upset stomachs or cause an allergic reaction and sometimes people make choices about the food they eat because of beliefs. Explore some of the main dietary requirements- lactose intolerant, nut allergy, religious limitations, veganism, vegetarianism, pescatarianism, gluten allergy etc. Look at food labels and how companies support shoppers to make good choices based on these limitations. **Food, health and nutrition** **2. L.Q. What is the eatwell plate?** Suggestion: Look at the eatwell guide from the government website. Explain the importance of each food group in our body. Focus on the key message of 'listening to our bodies' to make good food choices, no foods are not allowed. Look at a range of meals, discuss whether they meet the requirements of the eatwell plate. Children should design a menu for a day where each meal is balanced.			

Research, plan and design.

3. **L.Q. What criteria must my design meet?**

Suggestion: collect the data as a class from the surveys by making a tally. The children should have their own tally in their DT books. The children should create and record their own success criteria based on the results of the survey. E.g. our ornament must be red and green, environmentally friendly, have recycled materials, have a snowflake theme etc.

Research, plan and design.

4. **L.Q. Can I design a Christmas ornament?**

Suggestion: As a class decide on what you are going to make and the materials you will use. The children should design their item in their DT book and annotate any key features, what they like and what they might change when they come to make their final outcome.

Research, plan and design.

5. **L.Q. Can I make a Christmas ornament?**

Suggestion: Make the ornament, making sure that it meets the criteria from the survey and replicates the design in the children's books. Take photos for their DT books. Once complete ensure a record is kept of how many are sold at the Christmas event.

Manufacture

6. **L.Q. How successful was our design?**

Suggestion: Look at the data collected from the sale. How many items sold or how much money was raised? Children should assess how effective their outcome was using simple sentence stems.

I think our ornaments sold successfully/unsuccessfully because…. (give multiple choice answers to complete the sentence.)

Evaluate

considering their limitations and their pros. Take photos for DT books which the children may then annotate. E.g. drain pipe- can carry a lot of water at a time, water proof, works well in a gravity system however it is rigid and would therefore be more difficult to direct the water where needed.

Research, plan and design

3. **L.Q. What method is most effective to join equipment to make an irrigation system?**

Suggestion: Using the same equipment from the previous lesson allow the children to experiment with different joining techniques- testing each one for durability and water resistance. Take photos of the process and record findings in DT books. Joining ideas – duct tape, masking tape, cello tape, cling film, string, elastic bands, pegs.

Research, plan and design

4. **L.Q. Can I design an irrigation system?**

Suggestion: Using all knowledge collected over previous lessons, model designing an irrigation system using 'thinking out loud' to show reasoning for your decisions. Children should annotate the equipment they have chosen to use. I recommend children designing in groups to reduce the amount of systems that need to be built and tested.

Research, plan and design

5. **L.Q. Can I make an irrigation system?**

Suggestion: take turns to build designs and test that they can transport water. Give each team a time limit for this. For children who aren't building they should rate their peer's systems against criteria.

Manufacture

6. **L.Q. How effective were our irrigation systems?**

Suggestion: Across the week the class should observe the effectiveness of their design (borrow from geography the soil moisture measure) Based on data collected children should list WWW and EBI. Include photos in DT book.

Evaluate.

Food, health and nutrition

3. **L.Q. Can I create a menu that meets dietary requirements?**

Suggestion: Explore a range of recipes, make sure to provide meal options that meet and don't meet the brief, can the children identify the best options? Referring to RRS articles, hold a vote to decide which recipes will be made. If the children want to make something that doesn't fit the brief, can they think of substitutes to replace certain ingredients?

Food, health and nutrition

4. **L.Q. What is cross contamination?**

Suggestion: discuss what cross contamination is and why it is so important when working with allergies, intolerances and dietary requirements. As a class create a plan on how to avoid cross contamination when making your three dishes and record this in DT books.

Food, health and nutrition

5. **L.Q. Can I follow a recipe?**

Suggestion: Cook all three dishes and present them to parents at the end of the school day. During the picnic ask parents to rate the dishes that they children have made and choose a favourite out of the three. Also take a survey of parent's dietary requirements. This will be needed for the next lesson.

Manufacture

6. **L.Q. How well did we meet the brief?**

Suggestion: During the picnic ask parents to rate the dishes that they children have made and choose a favourite out of the three. Also take a survey of parent's dietary requirements. Review the data as a class. Discuss how they could improve their recipe and how their improvement would affect their original outcome.

Evaluate.

	Outcome 	**Outcome** Irrigation system transporting water from the water butt to the allotments. 	**Outcome** 
	Key Vocabulary Folding, criteria, tie, knot, measure, celebration, ornament, survey, fabric, textiles, target audience.	**Key Vocabulary** Criteria, stable, strong, durable, audience, packaging, irrigation, hose, pipes, area, trial.	**Key Vocabulary** Cooking, allergy, dietary requirement, gluten, dairy, restrictions, intolerance, cooking, diet, healthy lifestyle, eat well, criteria, diet, hygiene, meals, produce, nutrition, carbohydrates, protein, sugar, processed foods, variety,
	Progression Map Coverage: **Research, plan and design** • Order the main stages of making their product. • Identify a design criteria and establish a purpose/audience for their product. • Begin to communicate influences of their design/product through clear explanations and designs **Manufacture** • Join materials effectively to build a product. • Use a range of techniques to shape and mould materials. • Join textiles of different types in a range of ways • Choose textiles both for their appearance and also qualities **Evaluate**	**Progression Map Coverage:** **Research, plan and design** • Identify and plan the equipment/tools needed and give reasons why. • Plan and design using accurate diagrams and labels. • Create realistic plans e.g. what tools, equipment, materials and processes they will use. • Explain why they have selected specific materials for their design/product **Manufacture** • Use equipment and tools accurately and safely. • Select the most appropriate materials, tools and techniques to use. • Manipulate materials using a range of tools and equipment.	**Progression Map Coverage:** **Research, plan and design** • Identify and plan the equipment/tools needed and give reasons why. **Manufacture** **Evaluate** **Food, health and nutrition** • Understand that diets around the world are based on similar food groups • Know and find out that food is prepared in different ways due to a number of factors, including country, culture, custom, religion, beliefs and dietary requirement. • Use the eat-well plate and consider the needs of different people when planning and cooking food • Sort a selection of foods into the eat-well food groups

	• Evaluate their learning process and make suggestions for improvement in their own and others' product/ design. **Food, health and nutrition**	• Measure, cut and assemble with increasing accuracy. **Evaluate** • Adapt or improve their original ideas • Think about their ideas as they make progress and be willing to make changes if this helps them to improve their work. • Assess how well their products work in relation to the purpose. • Explain how they could change their design to make it better. **Food, health and nutrition**	• Recognise the 5 groups from the eat-well plate • Put together a balanced meal by choosing foods from different food groups • Assess a healthy plate and improve, explaining their choices • Suggest and demonstrate healthier ways to prepare and cook foods • Read and interpret basic nutrition information on food packaging when making choices • Research, plan and prepare food appropriate for a range of different requirements • Consider that people have different preferences and dietary requirements • Understand the important social aspects of food and how families in the past used to eat • Assess how well their recipe/meal works in relation to the purpose • Explain how they could change their recipe to make it better Assess how well their meal/recipe works in relation to the design criteria and the intended purpose • Explain how they could improve their recipe and how their improvement would affect the original outcome
	Key Concepts Research, plan and design. | Manufacture | Evaluate | Food, health and nutrition	**Key Concepts** Research, plan and design. | Manufacture | Evaluate | Food, health and nutrition	**Key Concepts** Research, plan and design. | Manufacture | Evaluate | Food, health and nutrition
Year 4 **National Curriculum**	**Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design (NC)**	**Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.** **Understand and apply the principles of a healthy and varied diet. (NC)**	**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. (NC)**

Year 4	**Focus – textiles – cross curricular links to history.** **Career – historian, designer, artist, military, politician, graphic designer, advertising.** **Brief –** Look carefully at the SPQR banner/flag used by the Holy Roman Empire. This banner was a symbol of strength, power, authority and military. It would be used for many reasons and displayed proudly. It would have been carried in to battle. Create your own symbol for the Roman Empire that can be used on a flag/banner. It should represent the power the Roman Empire had over and its impact on Britain. **1. L.Q. What is a symbol?** Suggestion: Look at the Roman Empire flag and discuss how their symbol represents what they were and what they wanted to achieve. Look at a variety of other symbols on flags, what message do the class think they are trying to share? E.g. pride flag, Olympic flag, UK flag, charity banners etc. The class should write their thoughts about each symbol in their DT books.  **Research, plan and design.** **2. L.Q. Can I design my own symbol?** Suggestion: Each pupil should think of a message they would like to convey about themselves/their class/their school, in DT books they should draw several logo ideas that show this, experimenting with colour and different compositions. The class should rate each of their symbols, indicating in their book which design they have chosen to use on their flag and why. **Research, plan and design.**	**Focus - cooking – cross curricular link to history** **Career – chef, dietician, nutritionist.** **Brief –** can you design and make a pizza that represents every food groups that makes a balanced diet and takes in to consideration any dietary restrictions and preferences? **1. L.Q. What is a balanced diet?** Suggestion: Explore the eatwell plate and the food types. Emphasize that **there are no "bad" foods** but that eating foods in the correct proportion is important for a healthy body. Children could design a school lunch based on the eatwell plate in DT books. **Food, health and nutrition** **2. L.Q. How can the information on food labels inform our food choices?** Suggestion: look at a range of food labels. Children should learn to read the colour coding guidance and understand how this can be used to inform food choices and can be used to make sure they are eating a balanced diet. They should explore ingredient labels, allergy warnings and portion recommendations. Explore how much of each item you should consume as part of a balanced diet. You may also like to point out dolphin safe tuna logos, vegan and vegetarian logos, halal logos etc. **Food, health and nutrition** **3. L.Q. Can I use a survey to inform my design choices?** Suggestion: with the children create a survey of questions to be sent home or sent around the school to collect data. Example questions could be: Which of the following vegetables toppings would you have on your pizza? Do you have any special dietary requirements? Etc. **Food, health and nutrition** **4. L.Q. Can I plan a recipe for a pizza?** Suggestion: collect data from surveys in a table. Use this to inform a pizza design. Children can draw their topping choices based on the information received. **Food, health and nutrition** **5. L.Q. Can I make a pizza?**	**Focus – construction – cross-curricular link to history.** **Career – carpenter, designer, historian, joiner.** **Brief –** You are a Viking clan, setting sail in a few short weeks to invade the Anglo-Saxons. Design and make a wooden shield to strike fear in to the hearts of your enemy and to keep your body safe from harm. **1. L.Q. What are the features of a Viking shield?** Suggestion: Look at a range of Viking shields. Annotate the parts of the shield. Discuss the designs, are there any common images or patterns? Are there any recurring colours? What shape are they? Create a set of criteria for your own designs. **Research, plan and design.** **2. L.Q. Can I design a Viking shield?** Suggestion: Using reference images for inspiration the children should use a template to design 4 shields. They should annotate images and colours. They should write a summary explaining which of the 4 designs they will be using in their final outcome and why they prefer this over the others. This should be quite detailed e.g. I have chosen design 3 because I think it is the most historically accurate and detailed. I am disappointed with the dragon on shield 2 because I found it difficult to draw. I think the other two designs aren't as detailed or interesting as design 3. **Research, plan and design.** **3. L.Q. How can I safely create the shape of a shield out of wood?** Suggestion: Provide each child with a square of wood/MDF that is close to the dimensions of the final shape, this means that the class will just have to saw the corners off and can refine the shape through sanding. Teach the children how to use the clamps and junior hack saws safely through modelling. Children should work in small teams to ensure that they are safe. Take photos for DT books. **Manufacture** **4. L.Q. Can I accurately recreate a design on my final product?** Suggestion: Pupils should have access to their DT book to look at the design they have chosen. They should recreate this on to

	3. L.Q. Can I design a flag/banner? Suggestion: Using the symbol from the previous lesson the children should design their flag/banner. They should consider where the logo should sit, the size of the logo and the background of the flag e.g. stripes, colour etc. They should indicate in their DT book which design they have chosen as their final piece and why. **Research, plan and design.** **4. L.Q. What is a running stitch?** Suggestion: In this lesson pupils should learn to thread a needle with embroidery thread. Using binca they should practise a basic running stitch, keeping stitches the same size and distance apart and in a straight line. **Research, plan and design.** **5. L.Q. Can I create a flag/banner?** Suggestion: Pupils should replicate their chosen design from their sketchbook on to fabric. Begin by drawing in pencil before decorating using fabric paint or markers. Pupils should fold over one edge of their flag and sew along that edge to create a loop, this is where a dowel will be thread through to hang the flags. **Manufacture** **6. L.Q. Did the message I wanted to convey come across in my design?** Suggestion: Join up with another class and share the designs. Pupils from the other class should place post-its on the flags to say what they think the flag represents e.g. love, kindness, power etc. Based on this feedback discuss how successful the designs were and record thoughts in DT books. **Evaluate**	Suggestion: cook dough from scratch, this is important for progression of skills. Children may be given a section of dough to top with toppings they chose during the last lesson. **Manufacture** **6. Can I evaluate my recipe and ingredient choices?** Suggestion: Stick photo of pizza in DT book and collect feedback from families about the pizza that was made. Consider WWW, EBI and the children should write what they would do differently next time if they made another pizza. **Evaluate**	their shield as accurately as possible without deviating e,g, they cannot change colours etc. Pupils should sketch their design in pencil before painting. **Manufacture** **5. L.Q. Can I add embellishments to my outcome?** Suggestion: Inform the class of the meaning of embellishment. Pupils should add the metal caps to the centre of the shield, they may also choose to add nails as rivets. All pupils should add a strap to the back. Take photos for DT book. **Manufacture** **6. L.Q. How historically accurate is my shield design?** Suggestion: Evaluate your outcomes against the success criteria created in the first lesson. What were the limitations we faced creating our shields in school e.g. size. What advantages did we have creating our shields in school e.g. modern inventions such as glue guns and sand paper. **Evaluate.**
	Outcome  	**Outcome** Homemade pizza. 	**Outcome** 
	Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**

	Purpose, demonstrate, running stitch, needle, embroidery thread, binca, symbol, symbolism, sewing, fabric.	Diet, hygiene, meals, produce, fresh food, nutrition, carbohydrates, proteins, sugars, processed foods, variety, preparation, healthy lifestyle, prepare, raw, planning, balanced diet, dietary requirements.	Finish, model, c clamp, junior hack saw, sand paper, refine, accuracy, replica,
	Progression Map Coverage: **Research, plan and design** • Plan and design using accurate diagrams and labels and to be able to give fluent explanations for their choices of materials. • Create a final design for their product based on initial ideas and research based on existing products and ideas. • Create a detailed plan considering their target audience, design criteria and intended purpose. • Discuss how a range of factors influences design from different cultures. **Manufacture** • Manipulate materials effectively and accurately using a range of tools and equipment. • Measure, cut and assemble accurately explaining the process verbally. • Begin to use a range of simple stitches • Devise a template or pattern for their product **Evaluate** • Think about their ideas as they progress and alter the design to make improvements. • Explain how they could improve their design and how their improvement would affect the original outcome. • Critique their own and others' design/product throughout the learning	**Progression Map Coverage:** **Research, plan and design** **Manufacture** **Evaluate** • **Food, health and nutrition** • Know that food is prepared in different ways due to a number of factors, including country, culture, custom and religion • Use the eat-well plate and consider the needs of different people when planning and cooking food • Suggest and demonstrate healthier ways to prepare and cook foods • Read and interpret basic nutrition information on food packaging when making choices • Identify the taste and texture of the product • Experience food from a different culture and comment on their opinions • Assess how well their recipe/meal works in relation to the purpose • Explain how they could change their recipe to make it better • Assess how well their meal/recipe works in relation to the design criteria and the intended purpose	**Progression Map Coverage:** **Research, plan and design** • Plan and design using accurate diagrams and labels and to be able to give fluent explanations for their choices of materials. • Create a final design for their product based on initial ideas and research based on existing products and ideas. • Create a detailed plan considering their target audience, design criteria and intended purpose. • Use a range of sources e.g. books, internet, museums to influence their ideas. **Manufacture** • Use equipment and tools with increased accuracy and safety. • Select the most effective materials, tools and techniques to use. • Measure accurately to build effective structures. • Use a range of techniques to shape and mould. • Use finishing techniques, showing an awareness of audience. e.g. sanding, varnishing, glazing etc. • Consider which materials are fit for purpose and join them appropriately • Devise a template or pattern for their product **Evaluate**

<table>
<tr><td></td><td>process to develop and support each other
Food, health and nutrition</td><td></td><td>• Asses how well their product works in relation to the design criteria and the intended purpose.
Food, health and nutrition</td></tr>
<tr><td></td><td>Key Concepts
Research, plan and design. | Manufacture | Evaluate | Food, health and nutrition</td><td>Key Concepts
Research, plan and design. | Manufacture | Evaluate | Food, health and nutrition</td><td>Key Concepts
Research, plan and design. | Manufacture | Evaluate | Food, health and nutrition</td></tr>
<tr><td>Year 5
National Curriculum</td><td>Investigate and analyse a range of existing products. (NC)</td><td>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
Understand how key events and individuals in design and technology have helped shape the world (NC)</td><td>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques (NC)</td></tr>
<tr><td>Year 5</td><td><u>Focus – Textiles – cross curricular link to history.</u>
<u>Career – historian, embroidery artist, crafter, seamstress, tailor.</u>

<u>Brief –</u> Using historical sources research Ancient Maya textile techniques. Replicate their style using modern techniques and processes.

1. L.Q. How did the ancient Maya create art using fabric?

Suggestion: Look at examples of Mayan weaving, make note of the colours and shapes used. Discuss how a range of factors influences designs and aesthetics from different cultures.
Research, plan and design.
2. L.Q. What is weaving?

Suggestion: look at the traditional method of weaving that would have been used by Maya civilisation. Using weave cards and either wool or scrap fabric replicate this technique. Stick photos of the children completing this process in their DT books and ask the children to describe the method in their own words.</td><td><u>Focus – Construction – cross curricular link to science.</u>
<u>Career – engineer, astronaut, Goonhilly, Cornwall Spaceport, physicist, scientist.</u>

<u>Brief –</u> You have been selected by Spaceport Cornwall to work as an engineer and design a new Mars Rover to explore the planet and look for signs that there was once life on the planet. This Rover will be left on Mars for many years and needs to be durable and suitable for the harsh conditions on Mars.

1. L.Q. What are the features of a Mars Rover?

Suggestion: explore real life examples of rovers and moon buggies. What are the important features they share? Create success criteria to be followed throughout the design process.
Research, plan and design.
2. L.Q. Can I illustrate and annotate a design for a Mars rover?

Suggestion: Children to design their own Mars rover using images of real rovers for reference. Children should annotate parts and give reasons for their design choices. E.g. square chassis, allows four-wheel drive, more stable.
Research, plan and design</td><td><u>Focus – Cooking – cross curricular link to history.</u>
<u>Career – health and safety officer, health care, chef, nutritionist, dietician, historian.</u>

<u>Brief –</u> Across England, different localities have different traditions and food that are part of their local history and heritage. For Cornwall that is the Cornish pasty. Design and make a traditional Cornish pasty, using recipes and techniques used by Cornish miners.

1. L.Q. Why are pasties traditional in Cornwall?

Suggestion: Make links to history topic and the history behind pasties being eaten by miners. Compare modern pasties to historical ones e.g. how they used to have a sweet side and a savoury side, how crusts were never eaten but now are, this explains the distinctive shape of a pasty. Children should make notes and comparisons in their DT books.
More information about the history of the pasty can be found here…
History Of The Cornish Pasty - Proper Cornish
www.propercornish.co.uk/history-of-the-cornish-pasty
Food, health and nutrition</td></tr>
</table>

Research, plan and design.

3. **L.Q. What is cross-stitch?**

Suggestion: Inform the class that we will take inspiration from the geometric patterns used in Mayan weaving with cross-stitch, a more modern process to create our outcomes. Using binca to help guide the children they should learn to cross-stitch using embroidery thread. They should begin by creating large stitches and gradually get smaller.

Research, plan and design.

4. **L.Q. Can I design a geometric pattern inspired by the ancient Maya?**

Suggestion: Looking at ancient Maya weaving/carving and design the class should design their own repeating patterns in their DT book. They should prioritise shapes with straight edges as this will be helpful when filling in the design with cross stitch in subsequent lessons. The class should annotate on which is their chosen design and why out of all created. They should annotate colours etc.

Research, plan and design.

5. **L.Q. Can I use cross stitch to create a repeating pattern?**

Suggestion: Provide each child with a strip/square of brightly coloured felt. They should use contrasting embroidery thread in

3. **L.Q. How can I use a prototype to test the effectiveness of equipment and tools?**

Suggestion: Using a range of materials create chassis and test their durability. E.g. use lolly sticks, paper straws, wood frame, plastic straws. You may also wish to test different "engine" options. E.g. using a balloon to propel the vehicle, circuits, elastic band.

Research, plan and design

4. **L.Q. How can I modify my design based on the prototype results?**

Suggestion: Children should revisit their design and modify their notes using purple polisher to show where they have reflected on their design. They should then write a paragraph explaining these decisions and what they learned through the prototyping process.

Research, plan and design

5. **L.Q. Can I build a Mars Rover model?**

Suggestion: Using basic wood working skills build a wooden frame chassis, attach a dowel axle and wooden wheels and build the engine. If you plan to reinforce the chassis with wood glue as well as nails, you may wish to measure and make these prior to this session. Children may wish to decorate their rover if there is time.

Manufacture

6. **L.Q. What are the strengths and limitations of my design?**

Suggestion: stick a photo of the children's outcomes in their book. Evaluate how effective they would be on Mars. What would they do differently next time? Children to rate their own rovers against the success criteria created in the first lesson.

Evaluate

2. **L.Q. How should food be prepared and stored to prevent sickness?**

Suggestion: Discuss food hygiene including handwashing, different coloured chopping boards for different food types, preparing a work station for cooking and appropriate ways to store food. Discuss the risks of not following this guidance. Introduce the 5 Cs of food hygiene. Consider completing an investigation e.g. the pepper and soap experiment or try leaving a slice of bread in different environments for a few days and compare – wrapped up vs not wrapped up. Record in DT books.

Food, health and nutrition

3. **L.Q. What hygiene risks are there in the classroom?**

Suggestion: Allow the children time to assess the classroom and consider what they will need to do before, during and after cooking to prevent poor hygiene and sickness. Create a risk assessment and have children sign it to agree to follow it during the cooking lesson.

Food, health and nutrition

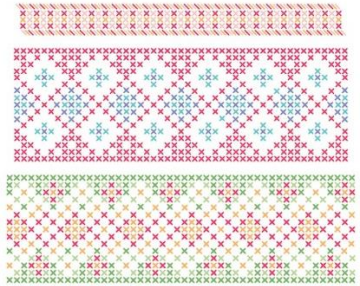
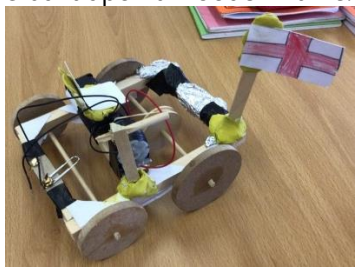
4. **L.Q. Can I design a pasty recipe?**

Suggestion: explore a range of different recipes for pasties, comparing them and finding common features. Using elements from each construct a pasty recipe which will be followed when the pasties are made. The whole class must agree on a pastry recipe and the vegetables that will be included. You may consider allowing option additional fillings that children can choose to add to their pasty such as cheese and meat for the savoury side and fruits for the sweet side.

Food, health and nutrition

5. **L.Q. Can I make a traditional Cornish pasty?**

Manufacture

bright colours when they come to cross stitch. Pupils can plot their pattern on the felt with a felt tip, soft artist pencil or chalk. The children should follow their pattern to create their pattern using cross-stitching. **Manufacture** **6. L.Q. What obstacles did I face while creating my design?** Suggestion: Discuss EBIs and WWWs not of the final outcome but their process. Common issues might include tangled thread, threading the needle, making knots in the thread, the needle frequently falling off the needle. Ask the class to suggest improvements, alternatives and advice they would give their past selves to overcome these problems. **Evaluate**		**6. L.Q. How successful was my pasty recipe?** Suggestion: Consider how and when you will evaluate your pasties, you may wish to taste test in class (always nice as a summer picnic), send feedback slips home for families to respond to, give them out at sports day or a school event etc. Pasties should be evaluated on their taste, appearance and how well the recipe was executed. Children should consider and record ideas for how they would improve or extend the recipe if they had to do it again and without the limitation of being traditional. **Evaluate**
Outcome 	**Outcome** Mars Rovers built upon a wooden frame. 	**Outcome** 
Key Vocabulary Fabric, weaving, cross-stitch, sewing, repeat pattern, artefact, tradition, culture, sewing, needle, embroidery thread, colour, vibrant,	**Key Vocabulary** Products, components, inventors, innovate, engineer, complex, reinforce, strengthen, adapt, substitute, designers, equipment, scale, proportion, chassis, axel.	**Key Vocabulary** Products, hygiene, processed foods, nutrition (protein, carbohydrates, protein, sugars, fats, sodium, fibre), diet, cross contamination, events, occasions, catering, vitamins, minerals, storage, traditions,
Progression Map Coverage: **Research, plan and design** • Suggest some alternative design and compare the benefits and drawbacks to inform the design process and outcome.	**Progression Map Coverage:** **Research, plan and design** • Take a user's view into account when designing.	**Progression Map Coverage:** **Research, plan and design** • Identify their target audience and use this to generate ideas. • Produce a detailed step-by-step plan for their design method.

- Discuss how a range of factors influences designs and aesthetics from different cultures

Manufacture

- Choose appropriate tools and materials to ensure that the final product will appeal to the audience.
- Use a range of fabrics to weave a pattern
- Build an image using fabrics

Evaluate

- Critique their own and others' design/product throughout to develop and support each other and offer solutions to design problems.

Food, health and nutrition

- Suggest some alternative design and compare the benefits and drawbacks to inform the design process and outcome.

Manufacture

- Utilise a range of tools and equipment with good accuracy and effectiveness within established safety parameters.
- Refine their product after testing it
- Measure accurately to ensure precision
- Refine and further improve their product
- Make a product which moves

Evaluate

- Create and evaluate a prototype before creating a final outcome.
- Assess how well their product works in relation to the design criteria and the intended purpose and suggest improvements.
- Evaluate appearance and function against the original design criteria.

Food, health and nutrition

Manufacture

Evaluate

- Continuously check that their design is effective and fit for purpose.

Food, health and nutrition

- Write and follow recipes
- Explain the importance of hygienic food preparation and storage
- Weigh and measure accurately
- Adapt a recipe by adding or substituting an ingredient
- Change ingredients by using a heat source
- Explain the hygiene and safety rules, which need to be followed before, during and after cooking and the consequences if these rules are not followed.
- Know that improperly handled, stored and prepared food can cause illness.
- Know that poor hygiene when cooking leads to the spread of bacteria, infection and fungi.
- Know how to prevent contamination when cooking and handling food.
- Recognise that there is a wide variety of food products from different cultural traditions
- Recognise that different food products are an important part of a balanced diet
- Recognise that food around the world is prepared in different ways, sometimes because of culture, customs and religion
- Know about a country and how its customs and culture can affect the food people eat
- Evaluate food based on its purpose, i.e. for exercise

Key Concepts				Key Concepts				Key Concepts			
Research, plan and design.	Manufacture	Evaluate	Food, health and nutrition	Research, plan and design.	Manufacture	Evaluate	Food, health and nutrition	Research, plan and design.	Manufacture	Evaluate	Food, health and nutrition

Year 6 National Curriculum	Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. (NC)	Prepare and cook a variety of dishes using a range of cooking techniques. (NC)	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. (NC)
Year 6	**Focus – Construction** **Career – Carpenter, joiner, builder, mechanic, interior designer.** **Brief –** Design and make your own wooden clock for a child's bedroom. The design should appeal to a child aged between 8-11 years old and have a clear theme. The younger classes will rate each design at the end of the project. **1. L.Q. Can I complete market research based on a brief?** Suggestion: Look at a range of clocks markets towards children. Can the class identify any common themes? Look at popular shapes, representations of numbers, colour schemes and patterns. Record their findings in their DT books. **Research, plan and design.** **2. L.Q. Can I complete a survey to inform my design?** Suggestion: Using the research from last lesson create a list of questions to help inform their design such as: what is your favourite colour? What shape do you prefer? Do you prefer a wall clock or standing clock? Etc. For the second half of the lesson pupils should interview each other or, preferably, another class to collect feedback. **Research, plan and design.** **3. L.Q. Can I design a clock based on my research?** Suggestion: Look at the results collected in the previous lesson. What can pupils deduce from their findings? Pupils should draw their design in their DT books annotating their decisions based on their research findings. **Research, plan and design.**	**Focus – Cooking** **Career – chef, nutritionist, dietician, scientist, health and safety officer, risk assessor, events planner, charity worker.** **Brief –** This half term you will be fundraising for your end of year camp trip and/or adventure learning week. You must plan and design an event that is centred around food that you have prepared in school. This might be a tea and biscuit morning, a picnic, a cake sale, a playtime tuck shop, playtime toast stall, cake raffle, hamper raffle etc. You can raise money through the sale of food items or admission/raffle tickets. Your goal is £200. **1. L.Q. How can we use food to fundraise?** Suggestion: Look at the brief, mind map ideas for fundraising. For each idea create another line off and list barriers/limitations that may prevent you doing that option and the pros to doing this idea. Whittle down the list to three options and vote as a class to decide the fundraiser you will complete. **Research, plan and design.** **2. L.Q. What causes food to decay?** Suggestion: As a class discuss how food can spoil and decay due to the action of microbes, insects and other pests. To demonstrate this, leave a piece of fruit/bread outside, one in the classroom and one in the fridge. Review how these pieces of fruit have been affected after a week has passed. **Food, health and nutrition** **3. L.Q. How can we prevent illness when handling food?** Suggestion: Explain how to use date marks on food packaging and the difference between best before and use by. Look at food	**Focus – textiles – leavers t-shirts or leavers bunting.** **Career – clothing designer, seamstress, tailor.** **Brief –** As we draw near to the end of your final term at St Day and Carharrack school we challenge you to create a t-shirt/bunting that will be using during your leaver's assembly. Your item must be representative of you and your time at this school. For example: it may be themed around your favourite memory, best trip or favourite subject or celebrate a significant achievement or relationship you have made. **1. L.Q. Can I create a digital mood board?** Suggestion: Using Google Draw model creating a mood board filling the canvas with images that can be used as inspiration or reference, colour schemes etc. Stick these mood boards in to DT books and annotate explaining the choices that have been made. **Research, plan and design.** **2. L.Q. How can I mark make on fabric?** Suggestion: give each child a swatch of fabric. Explore simple mark making techniques such as fabric markers, fabric paint, dye, embroidery stitches, printing etc. Children should assess which are the most effective and explain why in DT books. **Research, plan and design.** **3. L.Q. Can I adhere materials together using hand sewing techniques?**

4. L.Q. Can I prototype my design?

Suggestion: Using card pupils should create a mock-up of their design. Stick this prototype in their books to inform and write a summary explaining what they like/dislike/might change about this design based on their prototype.

Research, plan and design.

5. L.Q. Can I build a functioning clock?

Suggestion: This may take two lessons. The class should use C and D clamps with junior hack saws to cut out their shapes, sand the edges to get a smooth finish and drill a hole in the centre of their design for the mechanism. They can then begin to decorate their clocks with their design before adding the mechanism once dry.

Manufacture

6. L.Q. Does my design appeal to my target audience?

Suggestion: Invite a class of peers to review the designs. Pupils can rate each design, older classes may leave EBI and WWW post-its to be collected and recorded in DT books. Year 6 should look at the feedback they have received and write a summary with their own interpretation of WWW, EBI and what they would do differently next time.

Evaluate

storage instructions on a range of food packaging. Retrieve and record the instructions from a range of packaging in their DT books.
E.g. Ham
Store in: Fridge
Best by: 11/6/2024
Use by: 15/6/2024
Special instructions: Keep covered and consume within 3 days of opening.

Food, health and nutrition

4. L.Q. Can I plan a fundraising event?

Suggestion: As a class plan your event. Split in to teams and small groups to action your plan. E.g. create signs, research recipes, write a shopping list for ingredients, newsletter article, posters, advertising etc.

Food, health and nutrition

5. L.Q. Can I host a successful fundraising event?

Suggestion: Spend this day baking/cooking and preparing for your event. Keep a record of money raised throughout the event.

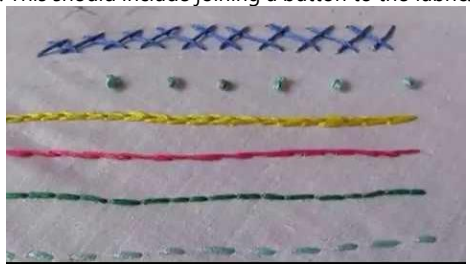
Manufacture

6. L.Q. Did we reach our fundraising goal?

Suggestion: Look at how much money was raised, did you achieve the £200 goal? WWW/EBI.

Evaluate

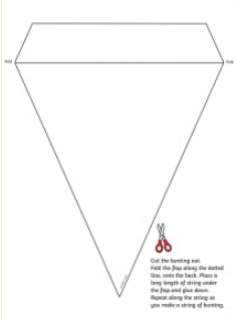
Suggestion: Using scraps of fabric, practise joining fabric using a range of stitches. For those who struggle use binca to help space stitches. This should include joining a button to the fabric.

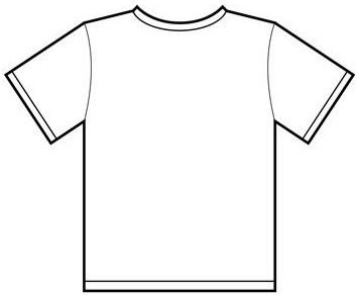


Research, plan and design.

4. L.Q. Can I design a leaver's t-shirt/bunting?

Suggestion: Using a template ask the children to loosely design their t-shirts or bunting, roughly sketching 3-4 designs. Around these images they should annotate which elements they like and dislike. On a larger template, pupils should choose their favourite elements of their thumbnail designs to create their final design which will be replicated on to the final piece.





Research, plan and design.

5. L.Q. Can I use a sewing machine to create my t-shirt/bunting?

Suggestion: Allot each child a period of time to use the sewing machine. They may like to use this to join different fabrics to their t-shirt/bunting, to hem it or to add to their design. While some children are using sewing machines the rest of the class should be working on their design using beads, buttons, fabric paint, dye, embroidery etc.

Manufacture

		6. L.Q. Can I think critically about my design? Suggestion: Evaluate what went well and what was difficult during the process of making the t-shirt/bunting. Once errors and difficulties have been identified challenge pupils to suggest solutions to the issue. This might be different equipment, practising a skill or prototyping. **Evaluate**
Outcome Wooden clocks. 	**Outcome** Fund raising event with home cooked food. 	**Outcome** Leavers bunting or t-shirt to be used as part of the leavers assembly or performance.  
Key Vocabulary Precision, mechanism, dial, drill, sand, smooth, prototype, diagram, modify, components, specifications, sanding, decorate, measure.	**Key Vocabulary** Hygiene, processed foods, nutrition, diet, cross contamination, events, fundraising, occasions, catering.	**Key Vocabulary** precision, prototype, sequential diagram, specifications, components, modify, traditions, equipment, sewing machine, bobbin, embellish,
Progression Map Coverage: **Research, plan and design** • Apply a range of information to inform their design. • Carry out market research to inform plans such as: surveys, interviews, questionnaires and internet research. • Consider culture and society in their designs – target demographic.	**Progression Map Coverage:** **Research, plan and design** • Develop design specifications while working within constraints e.g. time, resources or cost. • Find evidence to support or refute whether their ideas and designs will/won't work using specific constraints e.g. time, resources and costs **Manufacture** **Evaluate**	**Progression Map Coverage:** **Research, plan and design** • Justify their plan to someone else and communicate their design ideas using annotated sketches, ICT and other methods. • Consider the use of the product when selecting materials. **Manufacture**

	• Research how their product could be marketed through packaging and advertising. **Manufacture** • Choose appropriate tools and materials to ensure that the final product will appeal to the audience. • Utilise a range of tools and equipment with good accuracy and effectiveness within established safety parameters. **Evaluate** • Create and evaluate a prototype before creating a final outcome. • Test and evaluate their final product. • Ensure their product meets all design criteria and explain why it does. • Refine their product after testing it and explain what they have improved and why. • Explain their own design or construction and what has influenced their choices **Food, health and nutrition**	• Research and explore what information they would need to make improvements. • Identify and understand the impact the product has on individuals, society and the environment. **Food, health and nutrition** • Demonstrate an extended range of food skills and techniques • Select tools and techniques that are appropriate to complete a task. • Demonstrate good personal hygiene and safety when cooking • Recognise that the amount of energy and nutrients provided by food depends on the portion eaten • Evaluate food based on its purpose, i.e. for exercise • Explain why food is important beyond health and nutrition and make choices for this • Use food as a tool to bring people together. • Make choices about ingredients, recipes and portion.	• Identify and begin to explore specialist tools, techniques and processes. • Apply measurements accurately to scale, according to design plans, ensuring precision. • Refine and further improve their product. • Use a sewing machine to join fabric and embellish fabric. **Evaluate** • Explore if different resources could have improved their product, explaining what it would have improved. • Identify and address their own design problems during the construction process. • Critique, evaluate and demonstrate that their product is strong and fit for purpose. • Experiment with combining different materials exploring what makes them effective • Compare their design to X, explaining the effectiveness of both products mechanical components **Food, health and nutrition**

Key Concepts				Key Concepts				Key Concepts			
Research, plan and design.	**Manufacture**	**Evaluate**	**Food, health and nutrition**	**Research, plan and design.**	**Manufacture**	**Evaluate**	**Food, health and nutrition**	**Research, plan and design.**	**Manufacture**	**Evaluate**	**Food, health and nutrition**