

St Columb Minor DESIGN TECHNOLOGY Enquiry Questions and Assessment Checkpoints

Y1	Spring 1	Spring 2	Summer 1
Lead Enquiry Question (Composite Outcome)	Textiles Can I design, make and evaluate a woven landscape to show The Great Fire of London (link to history)	Cooking and Nutrition Creating a healthy salad using local and national ingredients.	Structure and Materials Can I design, make and evaluate a toy? (link to History and Science)
Tier 3 Vocabulary	<i>decorate design fabric glue model hand puppet safety pin staple stencil template</i>	<i>chopping board, compare, cut, design, evaluate, flavour, fork, fruit, healthy, ingredients, leaf, plant, recipe, root, seed, select, stem, table knife, taste, tree, vegetable, vine</i>	<i>materials mechanism purpose adapt design criteria design input model template assemble test</i>
WALTS (Components)	C1: Explore how to join two pieces of fabric together in different ways C2: Practise weaving different with different materials C3: Design and label my woven landscape C4: Make my woven landscape by cutting accurately and joining fabric together C5: Evaluate how successful my finished piece is	C1: Identify if a food is a fruit or vegetable C2: Identify where plants grow (local and national and globally) and which parts we eat C3: Taste and compare fruit and vegetables C4: Taste and compare different salad C5: Design a salad for our lunch C6: Cut ingredients safely using bridge method C7: Make and evaluate the salad	C1: Explore modern toys and compare these with toys from the past C2: Describe how toys from the past were made C3: Design a toy that my grandparents would have played with when they were my age C4: Explore what different materials could be used to make my toy C5: Make my toy using careful cutting C6: Evaluate how successful my toy is

Assessment Checkpoint	Children who are secure will be able to:	Children who are secure will be able to:	Children who are secure will be able to:
	✓ Join fabrics together with staples, glue and a simple running stitch ✓ Design a woven landscape ✓ Cut carefully ✓ Evaluate a finished piece of work	✓ Describe fruits and vegetables and explain why they are a fruit or a vegetable ✓ Name a range of places that fruit and vegetables grow ✓ Describe basic characteristics of fruit and vegetables ✓ Prepare fruits and vegetables to make a salad	✓ Compare toys from different periods ✓ Know some reasons why toys have changed overtime ✓ Desing a toy from 100 years ago ✓ Select appropriate material to make my toy Evaluate the success of my toy

Y2	Autumn 1	Spring 1	Summer 1
Lead Enquiry Question (Composite Outcome)	Cooking and Nutrition Can I design, make and evaluate a healthy wrap? (link to growing)	Mechanisms Can I design, make and evaluate a cart for a horse (Link to Victorians) EDIT: Not in Victorian topic. New objective: Can I design, make and evaluate a pop-up page about the weather?	Structures and Materials Can I design, make and evaluate a model habitat for a chosen animal living in the Arctic?
Tier 3 Vocabulary	<i>balanced</i> <i>carbohydrates</i> <i>chopping board</i> <i>combination</i> <i>cut</i> <i>dairy</i> <i>diet</i> <i>fruit</i> <i>grate</i> <i>ingredients</i> <i>menu</i> <i>oils</i> <i>proteins</i> <i>smell</i> <i>spread</i> <i>spreads</i> <i>table knife</i> <i>taste</i> <i>vegetables</i>	<i>design</i> <i>design criteria</i> <i>mechanism</i> <i>evaluate</i> <i>lever</i> <i>pop-up</i> <i>sliders</i> <i>prototype</i>	<i>design criteria</i> <i>man-made</i> <i>natural</i> <i>properties</i> <i>structure</i> <i>stable</i> <i>shape</i> <i>model</i> <i>test</i> <i>adapt</i> <i>evaluate</i>
WALTS (Components)	C1: Research what makes a healthy diet C2: Explore how wheat is farmed and what products it is used in	C1: Explore a range of sliders and levers and create our own prototypes.	C1: Describe the features of different habitats C2: Design a habitat for an Arctic animal

	C3: Taste test food combinations to inform our design C4: Design my healthy wrap taking into consideration my market research C5: Make my healthy wrap using safe cutting techniques and hygienic cooking rules C6: Evaluate how successful my healthy wrap is	C2: Explore a range of materials to help make design decisions. C3: Design a pop-up page about the weather. C4: Make a pop-up page about the weather. C5: Evaluate how well my mechanisms move on my pop-up page.	C3: Explore different materials for each component of the habitat and label your design when the material has been selected C4: Make the 3D habitat using a range of materials and textures C5: Evaluate how successful each material was for the Arctic habitat.
Assessment Checkpoint	Children who are secure will be able to: ✓ Name the main food groups and identify foods that belong to each group ✓ Describe the taste, texture and smell of a given food ✓ Use market research to inform design Construct a wrap that meets the design brief and their plan	Children who are secure will be able to: ✓ Explain that mechanisms move in different ways. ✓ Make some prototypes ✓ Design a page that has moving mechanisms. ✓ Make a page with moving mechanisms.	Children who are secure will be able to: ✓ Know that different materials have different strengths and textures ✓ Cut and join materials in different ways ✓ Explain why different materials were chosen for different aspects of their habitat ✓ Evaluate how successful their joins and material choices were

Y3	Autumn 1	Spring 1	Summer 2
Lead Enquiry Question (Composite Outcome)	Structure and Materials Design, make and evaluate a House structure for my family (link to PSHE)	Textiles Use cross stitch and applique to design, make and evaluate a volcano tapestry (link to history)	Cooking and Nutrition Design, make and evaluate a 'healthy' and seasonal pizza
Tier 3 Vocabulary	2D 3D home design key features net adapt scoring	appliqué cross-stitch fabric running stitch patch thread embellish template	arid climate complementary country design evaluate export fruit

	<i>shape</i> <i>stable</i> <i>stiff</i> <i>strong</i> <i>structure</i> <i>tab</i> <i>evaluate</i>	<i>cotton</i> <i>wrinkle</i> <i>tear</i> <i>breathable</i> <i>matt</i> <i>shiny</i> <i>biodegrade</i> <i>pinking</i>	<i>import</i> <i>ingredients</i> <i>Mediterranean</i> <i>peel</i> <i>polar</i> <i>seasonal</i> <i>seasons</i> <i>temperate</i> <i>texture</i> <i>tropical</i> <i>vegetable</i>
WALTS (Components)	C1: Recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure C2: Design a house and label it's key features and design specification C3: Construct 3D nets C4: Construct a house form from 3D nets C5: Evaluate the success of the house structure and suggest improvements to the design	C1: Learn how to sew cross-stitch and applique C2: Explore tapestry types and comment on the design of these C3: Design my own tapestry C4: Make my tapestry using cross-stitch and applique C5: Evaluate my tapestry with suggestions for future improvements to design and finish	C1: Know that climate affects food growth C2: Understand the advantages of eating seasonal foods grown in the UK C3: Design a pizza topping that is healthy and nutritious using seasonal vegetables C4: Safely follow a recipe and hygiene rules when cooking C5: Evaluate how successful my toppings were linked to the design brief and taste test
Assessment Checkpoint	Children who are secure will be able to: ✓ Draw and label a simple castle that includes most common features ✓ Design a house with key features ✓ Score or cut along lines on the net of a 2D shape ✓ Securely assembly geometric shapes ✓ Utilise skills to build a complex structure from geometric shapes	Children who are secure will be able to: ✓ Use a cross-stitch to join two pieces of fabric together ✓ Design and cut the template for a tapestry ✓ Use cross-stitch and applique to decorate your tapestry	Children who are secure will be able to: ✓ Explain that fruits and vegetables grow in different countries based on their climates ✓ Understand the seasonal fruits and vegetables are those that grow in a given season and taste best then ✓ Design their own seasonal and healthy pizza toppings ✓ Understand the basic rules of food hygiene and safety

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Y4	Autumn 1	Spring 2	Summer 2
Lead Enquiry Question (Composite Outcome)	Cooking and Nutrition Design, make and evaluate a Greek Salad for our family to enjoy.	Textiles Design, make and evaluate a fabric book sleeve from one of our class reads this year.	Electrical Design, make and evaluate an Iron man face with light up eyes
Tier 3 Vocabulary	<i>adapt</i> <i>addition</i> <i>budget</i> <i>combine</i> <i>compare</i> <i>construct</i> <i>cream</i> <i>crunchy</i> <i>design</i> <i>evaluate</i> <i>hygiene</i> <i>ingredients</i> <i>layout</i> <i>market research</i> <i>modify</i> <i>multiplication</i> <i>opinion</i> <i>pounds</i> <i>sieve</i> <i>sift</i> <i>target audience</i> <i>taste</i> <i>texture</i> <i>unique</i>	<i>criteria</i> <i>fabric</i> <i>fastening</i> <i>fix</i> <i>mock-up</i> <i>stitch</i> <i>template</i> <i>program</i> <i>plan</i> <i>test</i> <i>control</i> <i>adapt</i> <i>evaluate</i>	<i>battery</i> <i>bulb</i> <i>conductor</i> <i>circuit</i> <i>circuit diagram</i> <i>electricity</i> <i>insulator</i> <i>series circuit</i> <i>switch</i> <i>component</i> <i>design criteria</i> <i>diagram</i> <i>evaluation</i> <i>LED</i> <i>target audience</i> <i>input</i> <i>recyclable</i> <i>theme</i> <i>aesthetics</i> <i>assemble</i> <i>equipment</i> <i>properties</i> <i>sketch</i> <i>test</i>
WALTS (Components)	C1: Know the differences between Greek and UK food. C2: Follow a Greek salad recipe C3: Make and test a prototype C4: Design a Greek salad to a given budget (buy from COOP) C5: Make a Greek salad that meets a design brief	C1: Identify and evaluate different types of fastenings C2: Design a product to meet a design criteria C3: Make and test a paper template C4: Assemble a book jacket using a running stitch and back stitch	C1: Learn about electrical items and how they work C2: Analyse and evaluate electrical toys C3: Design a product that fits a specific design brief C4: Make a working circuit with a switch function

	C6: Evaluate the success of the adaptation to the recipe in designing a new Greek salad.	C5: Apply finishing touches and applique to book sleeve C6: Evaluate my book sleeve	C5: Complete design product using a range of materials, joining and finishing techniques C6: Evaluate the success of my finished product and suggest any improvements I would make
Assessment Checkpoint	Children who are secure will be able to: ✓ Follow a recipe ✓ Describe the features of a Greek Salad based on taste, smell, texture and appearance ✓ Adapt a recipe by adding extra ingredients to it ✓ Plan a biscuit recipe within a budget	Children who are secure will be able to: ✓ Identify the features, benefits and disadvantages of a range of fastening types ✓ Write design criteria and design a sleeve that satisfies the criteria ✓ Make a template for their book sleeve Assemble their case using any stitch they are comfortable with	Children who are secure will be able to: ✓ Identify electrical products and explain why they are useful ✓ Make a working switch ✓ Create suitable designs that fit the success criteria and their own design brief ✓ Create an Iron Man face with light up eyes that you can switch on and off

Y5	Autumn 2	Spring 2	Summer 1
Lead Enquiry Question (Composite Outcome)	Textiles Design, make and evaluate a sustainable fabric tree decoration	Cooking and Nutrition Design, make and evaluate a pasty.	Structure and Materials, Design, make and evaluate lever and pulley for tin mines.
Tier 3 Vocabulary	<i>criteria</i> <i>fabric</i> <i>fastening</i> <i>fix</i> <i>mock-up</i> <i>stitch</i> <i>template</i> <i>program</i> <i>plan</i> <i>test</i> <i>control</i> <i>adapt</i> <i>evaluate</i>	<i>adaptation</i> <i>balanced</i> <i>brand</i> <i>cook</i> <i>cross-contamination</i> <i>cut</i> <i>design</i> <i>enhance</i> <i>equipment</i> <i>evaluate</i> <i>hygiene</i> <i>ingredients</i> <i>label</i> <i>measure</i> <i>nutrient</i> <i>nutrition</i> <i>nutritional value</i> <i>preference</i> <i>process</i> <i>recipe</i>	<i>Mechanism</i> <i>Lever</i> <i>Fulcrum</i> <i>pivot</i> <i>Pulley</i> <i>Cable</i> <i>Axle</i> <i>Vertical</i> <i>Design</i> <i>Experiment</i> <i>Develop</i>

		<i>safety theme</i>	
WALTS (Components)	C1: Explore a range of tree decorations made from different materials and fabrics C2: Explore different types of second hand fabrics and decide on the best fabric and filling for their decoration based on its properties (design/ Flexibility C3: Design a sustainable fabric decoration C4: Make our product using running stitch or blanket stitch C5: Evaluate the success of my finished product and suggest any improvements I would make	C1: Know the origin of the Cornish pasty C2: Understand where the different ingredients come from that make a traditional pasty C3: Explore different fillings of a pasty and evaluate taste and targeted audience C4: Design my own version of a pasty for a Class lunch C5: Write a recipe to follow C6: Follow a recipe and safety rules when cooking C7: Evaluate how successful my version of a Cornish pasty is	C1: Explore different pulleys and levers – including how the wheel is used as a mechanism to move ropes C2: Explore different types of materials and decide which to use for the pulley C3: Design my pulley and lever making material choice explicit C4: Use a range of tools safely to make my pulley and lever C5: Evaluate the success of my pulley and lever in moving sand
Assessment Checkpoint	Children who are secure will be able to: ✓ Make a fabric and stuffed tree decoration using second hand fabrics ✓ Create suitable designs that fit the success criteria and the design brief ✓ Explain how their design meets the brief ✓ Evaluate the success of my product	Children who are secure will be able to: ✓ Explain the food sometimes has a heritage and origin linked to place ✓ Know where our food comes from ✓ Design and write an adapted recipe ✓ Use hygiene and safety rules when cooking ✓ Use a range of cutting techniques	Children who are secure will be able to: ✓ Understand how pulleys move and how levers are used ✓ Design a pulley and lever making effective material choices ✓ Use hinges to join ✓ Create a fair test to evaluate the success of lever and pulley

Y6		Autumn 1	Spring 2	Summer 2
Lead Enquiry Question (Composite Outcome)		Computing and Programming Design using CAD 3D modelling software.	Mechanism Design, make and evaluate a rocket launcher	Electrical Design, make and evaluate a motorised boat (link to geography)

Tier 3 Vocabulary	<i>design brief</i> <i>design criteria</i> <i>client</i> <i>function</i> <i>program</i> <i>duplicate</i> <i>replica</i> <i>variable</i> <i>value</i> <i>lightweight</i>	<i>accurate</i> <i>assembly-diagram</i> <i>bench hook</i> <i>cam</i> <i>clamp</i> <i>component</i> <i>diagram</i> <i>exploded-diagram</i> <i>finish</i> <i>follower</i> <i>frame</i> <i>function</i> <i>linkage</i> <i>mark out</i> <i>measure</i> <i>mechanism</i> <i>pneumatic</i> <i>model</i> <i>research</i>	<i>assemble</i> <i>battery</i> <i>battery pack</i> <i>benefit</i> <i>motor</i> <i>motor holder</i> <i>circuit</i> <i>circuit symbol</i> <i>component</i> <i>conductor</i> <i>design</i> <i>design criteria</i> <i>evaluation</i> <i>fit for purpose</i> <i>form</i> <i>function</i> <i>insulator</i> <i>user</i>
WALTS (Components)	C1: Use technology and sketching to develop an organized system for drawing ideas and documenting progress. C2: Develop proportional models based on real measurements C3: Convert feet/inches to millimetres. C4: Choose an appropriate scale to create a room on a Tinkercad workplace. C5: Create a 3D room and accessories that are easily identifiable. C6: Design a 3D room that can be 3D printed.	C1: Explore pneumatic mechanics and products that use this type of mechanism C2: Design a rocket launcher to a specified brief C3: Write clear steps for the making of rocket launcher C4: Make a prototype and refine design based on texting C5: Make final design using cutting and joining techniques C6: Test and evaluate success of design, suggesting future improvements	C1: Explore the shapes of the hull and which is the most buoyant C2: Evaluate different materials, to determine which would be most suitable for a motorised boat. C3: Explore electrical circuits that would be suitable for our motorised boats C4: Design a motorised boat for speed C5: Make a motorised boat using careful joining techniques C6: Evaluate the success of my finished product and suggest any improvements I would make
Assessment Checkpoint	Children who are secure will be able to: ✓ Identify errors (bugs) in the code and suggest ways to fix (debug) them	Children who are secure will be able to: ✓ Make and test a prototype to refine design ideas	Children who are secure will be able to: ✓ Determine an appropriate shape for the hull of a boat

	✓ Make Identify key industries that use 3D CAD modelling and why	✓ Write a step by step guide for the making process ✓ Use effective cutting and joining techniques ✓ Test rocket launcher and evaluate its success against the design brief	✓ Name the best material to use to build a model boat ✓ Build an electrical circuit which could be used to power a model boat ✓ Make a model boat ✓ Evaluate the success of the boat
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