



TO LOVE GOD ABOVE ALL THINGS
BY
LEARNING TOGETHER
LOVING OURSELVES
LOVING EACH OTHER
LOVING ALL PEOPLE
LOVING LIFE ITSELF
AND
CONSTANTLY STRIVING FOR
EXCELLENCE
WORTHY OF OUR GOD GIVEN GIFTS.



Vision

Catholic vision and Catholic principles drive **the vision** of the school, at St. Mary's we aim: -

For every child to receive an outstanding education, so that they reach their full-human potential worthy of their God-given gifts.

For every child to leave St. Mary's equipped with the skills they need for the next stage of their education and lives, knowing their contribution makes a difference in our world.

Design Technology Progression Grid and Coverage Document

Vision

At St Mary's, we want children to use their God-given gifts to imagine, design and make products that help people. Through Design and Technology, children learn to solve practical problems, value the ideas of others and care for the resources of God's world.

Intent

Our Design and Technology curriculum develops children's creativity, technical understanding and practical skills. Children investigate real needs, explore possible solutions and make products for a purpose and an intended user. They learn that a successful product needs to work well as well as look appealing.

Learning builds from exploration and construction in Reception to increasingly independent research, planning, making and evaluation in Key Stage 2. Children revisit materials, tools and processes, using what they already know to tackle more demanding tasks. Cooking and nutrition develop the knowledge and skills needed to make informed food choices and prepare food safely.

Aims

- Develop the confidence to investigate a problem, try ideas, persevere and improve a design.
- Build knowledge of materials, components, mechanisms, structures and electrical systems and apply it when making products.
- Communicate ideas through discussion, drawings, models, templates and increasingly precise plans.
- Select and use tools and techniques safely, with increasing control, accuracy and independence.
- Test products against clear criteria, listen to users and explain the reasons for changes.
- Understand food choices and ingredients, and develop safe preparation and cooking skills.
- Consider the needs of different people and the effects of design choices on communities and the environment.

Implementation

We use the Kapow Design and Technology scheme to support the school's selected units. Projects connect research, design, making and evaluation, with technical knowledge taught and applied throughout. Children revisit ideas as they test materials and components; evaluation takes place during construction as well as after a product is finished. Children apply measuring and geometry from mathematics, knowledge of materials and circuits from science, and visual design skills from art. Computing supports design and communication where it forms part of the planned project.

Reception has four DT units. Children in Years 1 to 6 complete three units each year, giving 22 units across the school pathway. This progression grid sets out the knowledge, disciplinary understanding and practical skills developed through these units and the school's adaptations.

Teaching and inclusion

Teachers model tools, techniques and subject vocabulary, then provide opportunities for guided practice and increasingly independent choices. Discussion, practical demonstration, photographs and models help children explain their thinking. Tasks and equipment are adapted so that pupils with SEND can take part meaningfully, while additional challenge deepens reasoning, precision and problem solving.

Safety and food hygiene

Adults select suitable tools and materials, assess the risks of each task and model safe use before practical work. Supervision reflects pupils' experience and the equipment involved, including cutting tools, needles, electrical components and heat. Food work includes handwashing, clean surfaces, safe storage and preparation, allergy checks and preventing cross-contamination.

Impact

Teachers assess what children know, explain and do through questioning, observation, design work, practical outcomes and evaluation. Relevant Kapow assessment resources support recall and help identify misconceptions. A finished product is considered alongside the decisions, knowledge and practical skills used to make it. Assessment reflects the school's adapted product and the skills taught.

By the end of Year 6, pupils should be able to justify design choices, work with increasing accuracy, test and refine their products and explain how they meet users' needs. They should apply safe working habits and draw on prior learning when faced with a new practical problem.

DT Pathway at St Mary's

The pathway follows the school's half-termly sequence. Reception has four units; Years 1 to 6 have three each. A dash indicates that no separate DT unit is scheduled in that half term. Skills are revisited through practical work and linked learning.

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Make Your House Structures	Soup Cooking and nutrition	—	Hanging Egg Decorations Textiles foundations	—	Boats Structures
Year 1	—	Puppets Textiles	Moving Storybook Mechanisms	—	—	Healthy Smoothie Cooking and nutrition
Year 2	Wheels and Axles London Eye Mechanisms	—	Healthy Wrap with Indian Spices Cooking and nutrition	—	—	Chair Structures
Year 3	—	Seasonal Food Tart Cooking and nutrition	—	Egyptian Collars Textiles	—	Poster Electrical systems
Year 4	—	Birmingham City Structures	Roman Sandal with a Fastening Textiles	—	—	Mayan Chocolate Biscuit Cooking and nutrition
Year 5	—	Chilli con Carne Cooking and nutrition	—	Doodlers Electrical systems	—	Pop-up Book Mechanisms
Year 6	—	War Shelter Anderson shelter Structures	Waistcoats Textiles	—	—	Come Dine with Me Cooking and nutrition

Progression in Cooking and Nutrition

Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Name and explore vegetables, then help choose ingredients for soup. Discuss healthy choices and preferences. Plan how the packaging will hold and present the soup. Bt5M — Health and self-care, Range 6. ELG — Managing Self Relevant aspects: hygiene and healthy food choices.	Taste ingredients and choose a smoothie combination. Design packaging by hand or using ICT, selecting colours and images that show the ingredients and appeal to the user.	Learn about Jamie Oliver's work to improve school meals. Choose ingredients from different food groups for a healthy wrap with Indian spices. Use taste testing to decide which combinations work together.	Identify seasonal ingredients and choose vegetables for a nutritious savoury tart. Explain choices of taste, texture, smell and appearance. Set out the ingredients and method in a recipe.	Use taste testing to choose ingredients for a Mayan chocolate biscuit. Compare costs and quantities against the budget, then adapt the recipe and explain the choices.	Review a chilli con carne recipe and compare ingredient nutrition. Choose substitutions and explain the intended benefit. Write the amended ingredients and method, then design appealing packaging.	Research ingredients and food origins before selecting a dish. Write a recipe with quantities, ordered steps and timings. Explain choices using facts and drawings, planning how preparation and cooking will fit the timescale.
Make	Wash hands and prepare vegetables hygienically. Practise supported chopping with suitable tools. Help combine ingredients for soup, with adults supervising preparation and managing heat. Bt5M — Moving and handling, Range 6. ELG — Fine Motor Skills Use a range of small tools, including scissors, paint brushes and cutlery.	Wash hands and prepare the workspace. Identify and safely chop the chosen fruit and vegetables. Combine ingredients for blending with adult support, then prepare packaging for the smoothie.	Prepare food hygienically and select a bridge or claw grip for cutting. Slice the chosen ingredients safely, arrange the filling and assemble a wrap that meets the brief.	Prepare themselves, tools and the workspace hygienically. Measure and prepare ingredients, then follow the recipe's order to assemble and cook the tart with supervision. Keep ingredients and equipment clean to avoid contamination.	Measure ingredients and follow the adapted recipe hygienically. Use sieving, creaming or rubbing in as required. Shape and bake the biscuits, handling hot trays with adult supervision and allowing biscuits to cool.	Prepare and measure ingredients before cooking. Use knives, pans and hobs safely under supervision, following the amended method in order. Keep raw ingredients and equipment separate where needed to prevent cross-contamination.	Organise ingredients, equipment and the preparation sequence. Measure accurately and follow the researched recipe, coordinating steps to meet the timescale. Check progress and maintain safe, hygienic practice with increasing independence and appropriate supervision.

Cooking and Nutrition Evaluation and Technical Knowledge

Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluate	Describe the soup's appearance, smell, feel and taste. Say which ingredients or packaging they prefer and give a simple reason. Suggest a change they would like to try. Bt5M — Health and self-care, Range 6.	Taste and compare smoothie combinations using appearance, smell and taste. Explain a preference and suggest a change. Check whether the packaging clearly shows what is in the smoothie.	Compare fillings by taste, texture and smell before judging the finished wrap against the brief. Explain which cutting grip helped. Discuss useful labelling and suggest an ingredient change with a reason.	Taste the tart and compare it with the design criteria. Explain benefits and environmental considerations of seasonal ingredients. Identify a change to the recipe or preparation method and explain the expected improvement.	Compare biscuits for taste, smell, texture and appearance. Check whether the product meets the criteria and budget. Explain how cost affected ingredient choices and identify a change to improve the next batch.	Compare nutritional information for the original and adapted recipes. Taste the adapted chilli and explain the benefits of the food groups used. Judge whether it meets its nutritional aim and suggest a justified adjustment.	Taste-test and score the dish for taste, smell and texture. Review ingredient origins, timing and hygiene, including prevention of cross-contamination. Use the findings to explain and record specific improvements to the recipe or method.
Technical knowledge	Soup combines vegetables and liquid. Vegetables are grown and have different names and tastes. Packaging holds and presents food.	Fruit and vegetables grow on plants in different ways. A blender breaks down and combines ingredients into a smoothie. Packaging protects the product and communicates its ingredients to the user.	Foods provide different nutrients. A balanced diet includes a variety of food groups. Labels give information about ingredients; bridge and claw grips support safe cutting.	Seasons and climate affect where foods grow and when they are available. Food may be grown in the UK or imported. Seasonal choices affect flavour, nutrition and environmental impact.	Ingredient quantities affect the mixture and final biscuit. Sieving removes lumps; creaming combines fat and sugar; rubbing in mixes fat into flour. Baking and cooling change the mixture. A budget limits ingredient choices.	Substituting ingredients changes nutrition and flavour. Beef comes from cattle; food can be reared and processed. Nutrition information supports recipe choices. Prevent cross-contamination during preparation.	Ingredients may be grown, reared, caught or processed. Recipes communicate quantities, sequence and timing. Research food origins and adapt methods while maintaining food hygiene.

Progression in Electrical Systems

The selected electrical units are Year 3 Electric poster and Year 5 Doodlers.

Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	—	—	—	Research the poster's topic and identify its audience. Agree criteria for information, appearance and lighting. Sketch the layout, showing where the bulb will go and what it will draw attention to.	—	Investigate how a Doodler's components produce movement. Identify the target user and agree criteria for function and appearance. Plan changes to the arrangement of parts and explain the intended effect.	—
Make	—	—	—	Measure and mark the backing, then mount the poster on corrugated card. Connect the battery, wires and bulb and check the circuit works. Secure the components and finish the edges so the poster is supported and presentable.	—	Assemble a working series circuit with a motor. Position and secure the components, then try different arrangements to produce the intended movement. Check against the criteria and write the construction steps so another person can follow them.	—
Evaluate	—	—	—	Test the circuit and check that the bulb supports the poster's purpose. Gather feedback on the information and appearance. Compare the outcome with the criteria, make a practical adjustment and explain how it helps the user.	—	Observe how the Doodler moves and compare its function and appearance with the criteria. Adjust the arrangement of parts and test again. Explain strengths and weaknesses, then use peer feedback to improve the construction instructions.	—
Technical knowledge	—	—	—	A battery supplies electrical energy. Connecting wires and a bulb need a complete circuit for the bulb to light. A loose connection or gap stops the circuit working. The poster's backing supports the components.	—	A series circuit has one path; a break stops the motor. A motor changes electrical energy into rotation. The position and attachment of components affect how the Doodler moves and the marks it makes.	—

Progression in Mechanisms and Mechanical Systems

Aspect	Reception Early foundations	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Explain what they want to make and what it should do. Choose suitable materials, talk through an idea and change the plan as they explore. Bt5M — Creating with materials, Ranges 5–6.	Explore moving examples and choose a story scene for an audience. Draw which part will move and in which direction. Plan where a lever or slider and its guides will fit.	Explore how a wheel and axle turn. Design a London Eye model, drawing and labelling the wheel, axle and support. Agree simple criteria for free movement and stability.	—	—	Storyboard the pop-up book so each scene has a planned movement. Select structures and mechanisms, then annotate their positions. Identify the input and intended output and plan how mechanisms will be concealed.	—
Make	Select materials and practise cutting and shaping with support. Position parts before joining them. Check that the join holds and change the materials or method if needed. Bt5M — Moving and handling, Range 6. ELG — Fine Motor Skills Use a range of small tools, including scissors, paint brushes and cutlery.	Cut and assemble the planned storybook parts. Attach the lever or slider and position bridges or guides carefully. Check that the moving part travels freely before securing the remaining pieces.	Make and join the supporting structure, then fit the wheel and axle. Check alignment and leave space for turning. Strengthen the support and adjust any parts that rub or catch.	—	—	Construct the planned sliders, pivots and folds accurately. Test each movement before adding layers and spacers to conceal mechanisms. Assemble the pages and check that opening or operating them produces the intended movement.	—
Evaluate	Try the model and describe what happens. Notice a loose join or part that does not work. Try a change, then explain whether the model works better. Bt5M — Creating with materials, Range 6. ELG — Creating with Materials Share their creations, explaining the process they have used.	Operate the moving part and compare it with the design. Identify where it sticks or moves incorrectly, then adjust and try again. Ask the audience whether the movement helps tell the story.	Turn the wheel and check whether the model stays upright. Identify rubbing, misaligned parts or weak supports. Use observations and feedback to make an adjustment, then retest and explain the improvement.	—	—	Test each page for reliable movement and secure assembly. Check that layers conceal mechanisms without obstructing them. Use feedback and criteria to select a refinement, retest the book and explain the effect.	—
Technical knowledge	Explore how materials and joins affect a model. Specific mechanisms, including sliders, are introduced in Year 1 Moving storybook.	A slider moves along a straight path; a lever turns around a pivot. Bridges and guides hold sliding parts in place and restrict their direction. Positioning these parts carefully allows the intended movement.	A wheel turns around an axle. The position and fit of the parts affect rotation. A stable support holds the wheel in place; rubbing or misaligned parts can prevent smooth movement.	—	—	Inputs produce outputs through connected moving parts. Pivots, sliders and folds create movement; spacers and layers can conceal a mechanism. Opening a page can act as the input.	—

Progression in Structures

Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Describe and draw a plan for a junk-model house, choosing materials for its parts. For a boat, explore floating, sinking and waterproof materials, then explain which materials and shape to try. Bt5M — Creating with materials, Ranges 5–6.	—	Explore natural and made structures and compare shapes. Agree what Baby Bear’s chair must do. Sketch and model ideas, choosing shapes and joints that will support the user and keep the chair upright.	—	Explore frame shapes and plan an appealing Birmingham City structure. Choose materials for the frame and cladding. Show how the frame will stand, support weight and produce the intended appearance.	—	Use prior structures knowledge to plan an Anderson shelter model. Identify its purpose and agree criteria for strength and stability. Draw the proposed structure, indicating materials, dimensions and joints, and explain the choices.
Make	Cut and position parts for the house, then join them using suitable temporary or permanent methods. For the boat, assemble chosen materials and check that parts are secure before testing in water. Bt5M — Moving and handling, Range 6.	—	Fold and shape paper or card to make the chair’s parts. Join them with tape, following the design. Check that the chair stands and reinforce joints or folds where it bends or wobbles.	—	Measure and assemble freestanding frames of different shapes and sizes. Secure joints and reinforce corners. Check stability before attaching cladding, then finish surfaces to achieve the planned visual effect.	—	Measure, mark and cut wood accurately with appropriate supervision. Assemble the shelter model in the planned order, checking dimensions and alignment. Reinforce joints, test stability during construction and add suitable finishing materials.
Evaluate	Compare the house with the plan and check joints, making repairs where needed. Test whether the boat floats and stays together. Suggest a change, try it and describe what happens. Bt5M — Creating with materials, Range 6. ELG — Creating with Materials Share their creations, explaining the process they have used.	—	Test whether the chair stays upright, resists bending and supports its user. Identify the weakest shape or joint. Add reinforcement, retest and explain how the change affects strength, stiffness or stability.	—	Compare class structures against the design criteria. Test stability and examine frames, corners and cladding. Explain effective and ineffective choices, then identify a practical change and how it would improve the structure.	—	Use peer feedback to review the plan before construction. Check strength, stability and dimensions as the model develops. Adapt weak parts, retest and explain how reinforcement or more accurate joints improve the result.
Technical knowledge	Material choice and joints affect a model. Waterproof materials resist water soaking in. Boats have different parts and uses; shape and construction affect how they float and move.	—	Folding changes the stiffness of paper. Shape, joints and the base affect strength and stability. Stability means staying upright; stiffness means resisting bending.	—	A frame supports a structure; cladding covers it and changes its appearance. Reinforced corners help joints resist movement. Material choice, secure joints and the shape of the frame affect strength and stability.	—	Material properties and structural shapes affect strength. Accurate dimensions, secure joints and reinforcement improve a shelter model. Prototypes and tests reveal where changes are needed.

Progression in Textiles

Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Explore available materials and draw an egg pattern. Choose colours, shapes and decoration, explaining the choices. Talk about how the materials will attach and how the finished egg will hang. Bt5M — Creating with materials, Range 6. ELG — Fine Motor Skills Begin to show accuracy and care when drawing.	Choose a puppet character and use a template to plan its shape. Select fabric, colours and features. Decide where pieces will join and where an opening is needed to use the puppet.	—	Identify the intended wearer and agree criteria for the Egyptian collar. Draw the shape and decoration, then make a template. Plan where fabric pieces, joins and appliqué will go.	Explore fastening options and write criteria for a personalised Roman sandal. Plan its shape and fastening position. Explain how the chosen fastening will help the sandal fit, stay secure and open easily.	—	Compare fashion designers' choices of materials and appearance. Develop criteria for a themed waistcoat and its wearer. Annotate the design to show panel shapes, joins, decoration and fastening, explaining how these meet the specification.
Make	Tear, scrunch or cut materials and attach the decoration with glue or tape. Cut the egg outline with support. Thread ribbon through a punched hole and form a loop for hanging. Bt5M — Moving and handling, Range 6.	Use the template to mark and cut fabric pieces. Explore pins, staples or glue to join them, keeping the opening clear. Follow the planned sequence to attach features and decorate the puppet.	—	Use the template to mark and cut fabric. Thread a needle and secure the thread with a knot. Apply cross stitch and appliqué as planned, checking stitches and fabric attachments as work develops.	Make and test a paper template before marking and cutting fabric. Position pieces and choose a suitable stitch. Sew small, neat stitches, then attach the fastening and check that it opens, closes and holds securely.	—	Pin templates to fabric and cut panels accurately, allowing for seams. Align and join panels using small, even running stitches and secure knots. Check fit as work develops, then stitch on decoration and add the fastening.

Textiles Evaluation and Technical Knowledge

Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluate	Check that the decoration stays attached and the ribbon supports the egg. Identify a loose part and try a repair with support. Explain the joining problem and how it was solved. Bt5M — Creating with materials, Range 6. ELG — Creating with Materials Share their creations, explaining the process they have used.	Try using the puppet and check its opening and joins. Explain which features they like and why. Identify a loose or awkward part and suggest a change that would help it work better.	—	Compare the collar with the design criteria and its wearer's needs. Check the joins and decoration are secure. Explain a successful feature and suggest an alternative making or finishing technique that could improve it.	Test the sandal's fit and operate its fastening. Judge security, ease of use and appearance against the criteria. Explain advantages and disadvantages of the fastening and suggest a practical modification.	—	Check stitching, fit and fastening throughout construction. Compare the finished waistcoat with the specification and the wearer's needs. Identify and make useful adjustments, explaining how they improve comfort, security or appearance.
Technical knowledge	Materials can be torn, scrunched, cut and combined. A join must suit the chosen material. A ribbon loop allows the decoration to hang.	A template guides cutting. Different joins attach fabric and decoration; a puppet must retain the space needed for use.	—	A seam joins fabric; seam allowance leaves fabric beyond the stitching for a secure join. Cross stitch uses crossing stitches. Appliqué attaches fabric shapes to a background, adding decoration or detail.	A tested paper template supports accurate cutting. Different fastenings have advantages for fit, security and ease of use. Fastenings allow fabric parts to be opened and closed.	—	Templates and panel size affect fit. Seam allowance gives space for joining. Even running stitches, secure knots and a suitable fastening help the waistcoat stay joined and wearable.

Disciplinary Knowledge and Skills

Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Disciplinary knowledge	Objects are made for a purpose. Ideas can change when something does not work. People can have different ideas about the same product. A joining method needs to suit the material. Bt5M — Creating with materials, Ranges 5–6.	A product has a user and a purpose. Simple criteria help describe what it should do. A design can be checked while it is being made. People may prefer different features for the same purpose.	Success includes working as intended and meeting agreed criteria. Materials and moving parts influence the result. A test can show why a product needs changing. A preferred appearance does not always mean a product works well.	Research and testing inform a design. Criteria connect decisions to the intended user. Evidence from a test can support a design decision. Findings from existing products can guide choices of materials and construction.	A design involves choices between appearance, performance, cost and practical constraints. Improving one feature can affect another. Design criteria help judge whether a choice is suitable.	Form is how a product looks; function is what it does. Changing a Doodler’s components, a pop-up mechanism or chilli ingredients can change the result. Instructions communicate the order of work and checks another person needs.	An effective solution balances the user’s needs, materials, accuracy and constraints. Evaluation can lead to several revisions. A successful product must be judged against its intended purpose. Designers’ styles and values influence their choices of materials and appearance.
Disciplinary skills	Explain an idea and a choice. Notice a joining problem, try a solution and describe the change. Bt5M — Creating with materials, Range 6. ELG — Speaking Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.	Explore examples, use a simple design and explain likes, dislikes and possible changes. Say whether the product works for its user. Give a reason linked to a feature they can see or test.	Compare ideas and agree what the product must do. Test the developing or finished product against these criteria. Use observations and peer feedback to choose an improvement, then explain what changed and whether it helped.	Use research to agree criteria for user and purpose. Review the developing collar, poster or dish against these criteria. Use test results and feedback to choose an improvement, explaining how evidence supports the decision beyond personal preference.	Compare possible materials, fastenings or ingredients before choosing. Explain the choice against the criteria, then test the outcome. Identify effective and ineffective features and explain how a proposed change would improve use, appearance or value.	Analyse existing products, including Robert Sabuda’s pop-up books, to inform design. Explain the effects of changes and use feedback to improve designs or instructions. Check that another person can follow their instructions.	Use research to define criteria, plan work and test during construction. Identify what needs refining, make an adjustment and review its effect. Explain the most useful improvements using evidence of strength, fit or performance and the user’s needs.

Progression in Practical Procedures

Aspect	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plan and prepare	Describe what they want to make. Choose materials and gather suitable tools with adult guidance, explaining a simple choice.	Follow a short plan and identify the materials needed. Put the main making steps in order and prepare the workspace safely.	Use the design to identify parts and materials. Measure and mark before cutting; choose a suitable grip when preparing food.	Use a template or ruler to mark accurately. Prepare fabric pieces, circuit components or ingredients and organise the intended sequence.	Test the sandal template before cutting fabric. Plan frame assembly and cladding, or measure biscuit ingredients before beginning the method.	Break construction into ordered steps and identify checks. Prepare circuit or mechanism parts; organise ingredients for the adapted chilli recipe.	Plan stages, resources and timings. Check quantities and dimensions before cutting or cooking, anticipating where careful alignment or supervision is needed.
Make and assemble	Handle tools with growing control. Cut or shape parts, position them and try a suitable join. Thread ribbon through a hole with support. Bt5M — Moving and handling, Range 6.	Cut and join pieces with developing control. Keep puppet openings and storybook moving parts clear. Prepare smoothie ingredients safely with support.	Assemble the wheel, axle and support; fold and join chair parts securely. Use bridge or claw grips to prepare wrap ingredients.	Follow the plan to sew fabric or connect circuit components. Prepare and assemble tart ingredients in recipe order, maintaining hygiene.	Build and reinforce frames before cladding. Sew and attach a fastening accurately. Follow biscuit mixing, baking and cooling steps safely.	Assemble the Doodler's circuit or planned pop-up mechanisms in stages. Follow the adapted chilli method hygienically and use equipment safely.	Measure and cut shelter parts or waistcoat panels accurately. Join and adjust during assembly; coordinate food preparation and cooking to the planned timescale.
Check and finish	Check whether parts stay attached and the model works. Try a repair with support and explain what changed.	Check joins and movement before finishing or decorating. Say which step helped the product work and identify a simple improvement.	Check chair stability and free wheel movement during making. Adjust a weak join or rubbing part, then test it again.	Check measurements, stitches and electrical connections before continuing. Use findings to adjust the next step and improve the finished product.	Check frame corners, fastening security and accuracy against the plan. Review the finished product and explain how the chosen technique affected it.	Test circuits and mechanisms before completing the product. Ask someone else to follow the construction instructions, then revise unclear or missing steps.	Monitor safety and quality throughout. Check strength, fit or recipe outcomes, refine the product and explain how an adjustment improved performance.

Key Organising Concepts

The same concepts are revisited through different materials and products. Teachers make these links explicit so that learning transfers between projects.

Concept	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
User and purpose	Make something for play or a familiar person. Bt5M — Creating with materials, Ranges 5–6.	Identify who a puppet, storybook or smoothie is for and choose simple features to suit that person.	Use agreed criteria to explain what a chair, rotating wheel or healthy wrap needs to do for its user.	Connect research and criteria to an Egyptian collar, poster or dish.	Consider use, fit and appeal in a city structure or sandal.	Clarify the target user and intended product function.	Balance users' needs with materials, time and accuracy when planning clothing, meals and shelter models.
Function and appearance	Talk about what a model does and looks like. Bt5M — Creating with materials, Range 6.	Choose features that help a product work and look appealing.	Notice how shapes, joins and moving parts affect performance.	Choose useful and decorative features for collars and posters, explaining how each supports function, appearance or communication.	Explain choices about stability, cladding, fastenings and presentation.	Distinguish form from function in Doodlers and pop-up books; explain how a change affects appearance, movement or use.	Justify a design's practical and visual features for its intended use.
Materials and systems	Explore how materials feel, fit and move. Bt5M — Creating with materials, Ranges 5–6.	Choose simple materials and joins; use levers and sliders.	Explore chair stiffness and stability through folds and joins; explain how a supported wheel and axle allow rotation.	Combine fabric pieces or electrical components for a purpose.	Match frames, cladding and fastenings to criteria, explaining why chosen materials and construction methods suit the product.	Explain how connected parts or recipe changes affect the whole product.	Use prior knowledge to combine materials and refine complex outcomes.
Testing and improvement	Try a model; change a part and try again. Bt5M — Creating with materials, Range 6.	Try moving parts and joins, identify a problem and describe a simple change that could help.	Use tests and peer feedback to modify work.	Check developing products against criteria; use test results and constructive comments to choose and explain a practical improvement.	Compare alternatives and explain effective and ineffective choices.	Analyse what changed and whether it improved the result.	Evaluate throughout making, weigh feedback against design criteria and justify refinements using evidence of strength, fit or performance.
Resources and responsibility	Share materials, care for equipment and reduce avoidable waste. Bt5M — Health and self-care, Range 6.	Use materials carefully and follow practical safety routines.	Make sensible food and material choices within a task.	Consider seasonality and careful use of ingredients or components.	Work within the biscuit budget, choosing suitable quantities and explaining how cost affects ingredients and the final product.	Use nutritional information to justify recipe substitutions; explain how changes affect flavour, health and the intended result.	Plan quantities, time and safe methods; consider users when improving a design.

Key Vocabulary

Vocabulary is introduced through demonstration, discussion and practical use. Children revisit earlier words and use new terms to explain designs, processes and improvements.

Year	Design and evaluation	Materials and technical vocabulary	Cooking and nutrition
Reception	design, plan, create, make, choose, join, cut, change, test	house, boat, material, tool, temporary, permanent, waterproof, float, sink, pattern, colour, shape, glue, tape, ribbon, loop	soup, vegetable, recipe, packaging, chop, wash, taste
Year 1	design, product, user, template, sequence, evaluate	puppet, fabric, template, join, slider, lever, bridge, guide	ingredient, smoothie, packaging, chop, appearance
Year 2	design criteria, model, test, modify, feedback	structure, strength, stiffness, stability, wheel, axle, support, rotate, mechanism	varied diet, wrap, combination, texture, bridge grip, claw grip
Year 3	research, brief, criteria, measure, mark, constructive feedback	circuit, component, bulb, battery, seam, seam allowance, cross stitch, appliqué	seasonal, climate, imported, savoury, recipe, contamination
Year 4	constraint, budget, compare, accuracy, modification	pavilion, frame, cladding, reinforcement, fastening, template	budget, quantity, sieve, cream, rub in, bake, cool
Year 5	target user, form, function, configuration, product analysis	input, output, mechanism, spacer, series circuit, motor	adapt, substitute, nutrition, reared, processed, cross-contamination
Year 6	specification, prototype, refine, quality, timescale	shelter, reinforcement, panel, seam allowance, running stitch, fastening	quantity, origin, grown, reared, caught, processed, timing

Reception Foundations and Early Learning Goals

The Reception column of each relevant progression table includes school learning linked to Birth to 5 Matters, second edition (2026), and the Early Learning Goals. Bt5M identifies the strand and developmental range; the school statements apply this guidance to the four DT units. Ranges 5 and 6 overlap and are revisited in response to children's development. ELGs identify end-of-Reception expectations and contribute to wider EYFS assessment.

Early Learning Goal	Relevant statements or aspects	How the school's DT units contribute
Creating with Materials	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used. Make use of props and materials when role playing characters in narratives and stories.	Choose and join materials for houses, boats and egg decorations. Explain how a model was made or changed. Revisit models as props in imaginative play.
Fine Motor Skills	Use a range of small tools, including scissors, paint brushes and cutlery. Begin to show accuracy and care when drawing.	Use scissors, brushes and supported food-preparation tools. Draw plans and egg patterns; thread a ribbon hanging loop with support.
Managing Self	Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. Relevant aspects: personal hygiene and understanding healthy food choices.	Follow hygiene routines and explore vegetables when making soup. Keep trying when a join fails or a model needs changing.
Listening, Attention and Understanding	Make comments about what they have heard and ask questions to clarify their understanding.	Listen to demonstrations and other children's ideas; ask questions about materials, tools and the results of testing.
Speaking	Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.	Explain a plan, material choice, preference or change, using words such as join, waterproof, float, recipe and pattern.
Self-Regulation	Relevant aspects: work towards simple goals, focus on adult guidance and follow instructions involving several actions.	Carry out a short practical sequence, attend to safety guidance and work towards completing or improving a model.
Building Relationships	Work and play cooperatively and take turns with others.	Share tools and materials, discuss designs and cooperate during practical making and testing.

National Curriculum Links KS1

National Curriculum statement	Year groups	Units	How it is covered
Purposeful design for users	Years 1 and 2	Puppets; moving storybook; London Eye wheel; wraps	Use a purpose, intended user and simple design criteria.
Developing and communicating ideas	Years 1 and 2	Puppets; Baby Bear's chair; smoothie packaging	Use templates, talk, drawings and models; packaging can be designed digitally.
Practical tool use	Years 1 and 2	Across the projects	Cut, shape, join and finish materials or prepare ingredients with support.
Selecting materials and ingredients	Years 1 and 2	Puppets; Baby Bear's chair; healthy wraps	Choose fabric, paper, card and food for relevant characteristics.
Exploring existing products	Years 1 and 2	Baby Bear's chair; food combinations	Compare structures and combinations before making choices.
Evaluating against criteria	Years 1 and 2	Moving storybook; London Eye wheel; Baby Bear's chair	Test movement, use audience feedback and check strength or stability.
Strengthening structures	Year 2	Baby Bear's chair	Fold paper, build joints and compare strength, stiffness and stability.
Using mechanisms	Years 1 and 2	Moving storybook; London Eye wheel	Use sliders and levers in Moving Storybook and wheels and axles in the London Eye model.
Healthy preparation and food origins	Years 1 and 2	Smoothies; healthy wraps	Explore how fruits and vegetables grow, combine ingredients and prepare food safely.

National Curriculum Links in Key Stage 2

National Curriculum statement	Year groups	Units covered	How it is covered
Research and criteria for user needs	Years 3 to 6	Electric poster; Egyptian collar; Doodlers; waistcoats	Investigate a brief or existing product and develop criteria for a particular user.
Communicating and modelling designs	Years 3 to 6	Egyptian collar; Roman sandals; pop-up book; Anderson shelter; waistcoats	Develop and communicate ideas through templates, plans, storyboards, annotated designs and models.
Accurate use of tools	Years 3 to 6	Across the projects	Measure, mark, cut, sew, construct and prepare ingredients with increasing accuracy.
Choosing materials for performance and appearance	Years 3 to 6	Birmingham City structures; textiles; food; Anderson shelter	Select structural and decorative materials, fastenings and ingredients for their purpose.
Analysing existing products	Years 4 and 5	Fastenings; biscuits; Doodlers	Compare alternatives and identify strengths, weaknesses, form and function.
Evaluation with criteria and feedback	Years 3 to 6	Electric poster; sandals; pop-up book; Anderson shelter	Use criteria, peer or user feedback and ongoing tests to refine work.
Significant designers and developments	Year 6	Waistcoats	Explore Vivienne Westwood, Stella McCartney and Thomas Burberry, their design choices and Burberry's development of waterproof fabric.
Reinforcing complex structures	Years 4 and 6	Birmingham City structures; Anderson shelter	Build frames, reinforce corners and improve the stability and strength of models.
Mechanical systems	Year 5	Pop-up book	Use connected mechanisms, pivots, sliders and folds; describe inputs and outputs.
Electrical systems	Years 3 and 5	Electric poster; Doodlers	Use a bulb in a working circuit and construct a series circuit incorporating a motor.
Healthy and varied diet	Years 3, 5 and 6	Seasonal tart; chilli con carne; Come Dine with Me	Consider nutritional balance and explain ingredient choices and substitutions.
Preparing and cooking food	Years 3 to 6	Seasonal tart; Mayan chocolate biscuit; chilli con carne; Come Dine with Me	Follow and adapt recipes, using suitable techniques, quantities and hygienic methods.
Seasonality and food origins	Years 3, 5 and 6	Seasonal tart; chilli con carne; Come Dine with Me	Explore seasons and where ingredients are grown, reared, caught or processed.