Progression of Skills - Design Technology

	Year 1 Main DT projects Autumn 1 Vegetable soup *(food and nutrition)* Spring Design and make a home for an animal (*Structures)* Summer Moving pictures-levers and sliders *(mechanisms)*	Year 2 Main DT projects Autumn 1 Make a castle with moving part *(Structures/ winding mechanisms)* Spring 2 Pirate hand puppet *(textiles)* Summer Design and make a healthy sandwich *(food and nutrition)*	Year 3 Main DT projects Autumn 1 Vehicle for trojan horse *(mechanisms wheels and axles)* Spring 2 Create a structure to withstand an earthquake *(structures)* Summer 2 Smoothie making *(food and nutrition)* Smoothie packaging *(Shell structures)*	Year 4 Main DT projects Autumn 1 Torch *(electrical systems)* Spring 2 Healthy foods *(Food and nutrition)* Summer 1 3D sea themed toy for younger child *(textiles)*	Year 5 Main DT projects Autumn 1 Electrical game for topic (electrical systems) Autumn 2 Making flat bread *(food and nutrition)* Building pyramids *(Structures)* Summer 1 Making a drop ride *(mechanisms)*	Year 6 Main DT projects Autumn 1 Mexican food *(Food and nutrition)* Autumn 2 Poppy badge for Remembrance celebrations (*textiles*) Summer 1 'transmission' system *(Electrical systems*)
Designing: Developing, planning, and communicating ideas.	• Draw on their own experience to help generate ideas. • Start to suggest ideas and explain what they are going to do. • Identify a target group for what they intend to design and make. • Develop their design ideas	• Start to generate ideas by drawing on their own and other people's experiences. • Begin to develop their design ideas through discussion, observation, drawing and modelling. • Identify a purpose for what they intend to design and make. • Identify simple design criteria; stating what the products are, who and what they are for and how they will work, to help develop their ideas. • Make simple drawings and label parts	• Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Prove that my design meets some set criteria. • Make drawings with labels when designing • Plan the order of their work before starting. • Explore, develop and communicate design proposals by modelling ideas.	• Share and clarify ideas through discussion • Evaluate existing products and identify criteria that can be used for their own designs. • Generate ideas for an item, considering its purpose and the user/s. • Establish criteria for a successful product. • Make labelled drawings from different views showing specific features. • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail	• Generate ideas through brainstorming and identify a purpose for their product and a design specification. • Produce a detailed step by step plan of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail. • Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • Collect information from different sources including ICT, interviews and discussions with peers to develop and communicate design ideas	• Carry out research; develop a simple design specification; describe the user, purpose and design features of my products and explain how they will work. • Plan the order of their work, choosing appropriate materials, tools and techniques. • Use annotated sketches, cross-sectional drawings, exploded diagrams and discussions to develop and communicate their ideas • Collect information from different sources including ICT, interviews and discussions with peers to develop and communicate design ideas • I work within a budget.
Vocabulary (Planning)	• planning, investigating design, evaluate, make, user, purpose, ideas, product	• investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product	• user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function	• evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, appealing, design	• design decisions, functionality, authentic, user, purpose, design specification, design brief, research, evaluate,	• design decisions, functionality, authentic, user, purpose, design specification, design brief, research, evaluate,
Making: Working with tools, equipment, materials and components to make quality products	• Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. • With help measure, mark out, cut and shape a range of materials. • Use hand tools and simple utensils safely. e.g. scissors, hole punch • Assemble, join and combine materials and components together using a variety of temporary methods e.g., glues or masking tape. • Use simple finishing techniques to improve the appearance of their product	• Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. • Begin to select tools and materials; use vocab to name and describe them. • Measure, cut and score with some accuracy. • Use hand tools safely and appropriately e.g. scissors, junior hack saw. • Assemble, join and combine materials in order to make a product. • Choose and use appropriate finishing techniques to improve the appearance of their product.	• Select tools and techniques for making their product. • Measure, make cuts and holes, mark out, score and assemble components with more accuracy. • Work safely and accurately with a range of simple tools. • Think about their ideas as they make progress and be willing change things if this helps them improve their work. • Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT	• Order the main stages of making; select suitable tools, equipment, materials and components and explain my choices. • Select appropriate tools and techniques for making their product. • Measure, mark out, cut, score and assemble components with more accuracy. • Think about their ideas as they make progress and be willing to adapt my work when the original ideas do not work. • Join and combine materials and components accurately in different ways.	• Select appropriate materials, tools and techniques • Use a wide range of materials and components to measure, mark out, cut, shape, assemble, join, combine and finish with accuracy. • Use different tools and equipment safely and accurately. • Weigh and measure accurately (time, dry ingredients, liquids) • Cut and join with accuracy to ensure a good-quality finish to the product including those from art and design • Make modifications as they go along.	• Select appropriate tools, materials, components and techniques. • Use a wide range of materials and components to measure, mark out, cut, shape, assemble, join, combine and finish with accuracy. • Assemble components to make working models. • Use tools safely and accurately. • Construct products using permanent joining techniques. • Achieve a quality product with a good quality finish including those from art and design. • Demonstrate resourcefulness when tackling practical problems. • Make modifications as they go along.

Evaluating processes and products	Talk about their design ideas and what they are making. Explore and evaluate similar existing products and discuss who and what they are for and how they work • Make simple judgements throughout and evaluate their final products and ideas against design criteria	• Explore similar products and discuss who and what they are for and how they work • Evaluate against their design criteria. • Talk about their ideas, saying what they like and dislike about them • Suggest how their products could be improved.	• Evaluate existing products and identify criteria that can be used for their own designs. • Disassemble and evaluate familiar products • Explain what went well with their work and evaluate their product against original design criteria e.g., how well it meets its intended purpose	• Disassemble and evaluate familiar products • Evaluate their work both during and at the end of the assignment. • Use their design criteria to evaluate their completed products. • Evaluate their products carrying out appropriate tests	• Use their design criteria to evaluate their completed products. • Evaluate a product against the original design specification. • Evaluate it personally and seek evaluation from others	• Evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • Record their evaluations using drawings with labels. • Identify strengths and areas to develop in my ideas and products against my design specification.
Vocabulary & Knowledge (Food)	• fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g., soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling • Follow correct hygiene and safety procedures • Know how to peel, cut, slice, squeeze, grate and chop safely. • Understand where a range of fruit and vegetables come from	• fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g., soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling • Follow correct hygiene and safety procedures • Describe the ingredients being used • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate	• name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown • Know how to be both hygienic and safe when using food • Know how food ingredients come together. • Prepare a range of foods, considering flavour combinations.	• name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown • Know how to be both hygienic and safe when using food • Measure and weigh ingredients accurately to make Roman bread	• ingredients, yeast, dough, bran, flour, wholemeal, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, dairy, allergy • Show they can be hygienic and safe in a kitchen • I can use a range of preparation and cooking techniques to cook a sweet or savoury dish. • I know a balanced diet gives the body all the nutrients it needs to function correctly.	• Seasonal, ingredients, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, dairy, allergy • Prepare and cook a variety of dishes safely and hygienically using, where appropriate, a heat source • Know that food is grown, reared and caught in the UK, Europe and the wider world.
Vocabulary & Knowledge (Structures)	• cut, fold, join, structure, wall, tower, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, triangle, square, rectangle, cuboid, cube, cylinder • Know and use different methods for joining card and paper e.g. card, tape and glue. • Make a stable structure from card, tape and glue. • Know that freestanding structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares		• shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, scoring, shaping, tabs, joining, assemble, accuracy, material, stiff, strong, font, lettering, text, graphics • Begin to understand how to strengthen, stiffen and reinforce more complex structures.		• frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent. • Understand how to reinforce and strengthen a 3D framework	
Vocabulary & Knowledge (Textiles)		• joining and finishing techniques, tools, fabrics and components, needle, eye, template, pattern pieces, running stitch, mark out, join, decorate, finish • Know that a 3-D textiles product can be assembled from two identical fabric shapes • Explore different techniques for joining fabrics e.g. Stapling, gluing and stitching • Know how to use a running stitch to join fabrics • Know how to align and join two pieces of fabric together. • Threading a needle		• fabric, names of fabrics, fastening, button, structure, finishing technique, strength, weakness, templates, blanket stitch, seam, seam allowance • Know that a single fabric shape can be used to make a 3D textiles product • Know how to join two pieces of fabric together securely • Know that seam allowances are important • Know how to blanket stitch		• seam, seam allowance, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, fastenings, satin/chain stitch • Know that a 3D textiles product can be made from a combination of fabric shapes. • Know how to use pattern pieces, fabric shapes and different fabrics to create a 3D product • Know how to chain/satin stitch to decorate the product
Vocabulary & Knowledge (mechanisms)	• slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement. • Know and use technical vocabulary relevant to the project	• Winding mechanism, pulley, axle, dowling • Explore and use winding mechanisms • Understand that different mechanisms produce different types of movement.	• vehicle, wheel, axle, axle holder, chassis, body, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, rubber band propulsion, balloon propulsion, hand saw, Know that a mechanism is a device used to create movement in a product. Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles.		• mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating • Understand that gears and pulleys can be used to speed up, slow down or change the direction of movement	

Vocabulary & Knowledge (Electrical systems)				• series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip control, program, system, input device, output device • Know that systems have an input, process and output • Use electrical systems such as bulbs in a product.	• series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip control, program, system, input device, output device • Know that systems have an input, process and output Use electrical systems such as bulbs in a product.	