

Design Technology Skills Progression

EYFS	Physical Development	Expressive Arts and Design
EYFS Nursery topics - Day and night bird feeders - Exploring materials - Penguin bed - Forces - Hedgehog hotel and autumnal collage - Building Castles - The Three Pigs Houses 3D rockets Reception topics - Creating musical instruments - Jungle masks, friendship bracelets - Lego building - Building homes and linking to people who help us	- Know the names of some different movement types, e.g. hopping, skipping, jumping, etc. - Know techniques to help them move carefully and with control. - Know the names of a range of tools. - Know how to hold and use a range of tools for a desired outcome, e.g. tape and glue used to build a structure. - Know the safety rules when using certain tools, resources and equipment. - Know how to sit properly at a table or on the floor. <u>Fine Motor Skills</u> - Know how to use a range of small tools, including scissors, paintbrushes and cutlery. - Hold a pencil effectively. - Begin to show accuracy and care when drawing.	- Know the names of different feelings. - Know that art and design can inspire feelings and emotions, and vice versa. - Know the names of a range of artistic effects, e.g. colouring, collage, etc. and what these look like. Know that these effects can be used to improve the appearance of something. - Know that they can return to and build on their previous learning, and know who to ask for help when needed. - Know that it is okay to make mistakes, and have some techniques for using these situations as opportunities to build their own resilience. - Know techniques for working collaboratively with adults and other children, sharing ideas, resources and skills. <u>Creating with Materials</u> - Know how to safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. - Know that they can share their creations, explaining the process they have used.
Key Vocabulary	Create, rough, smooth, texture, mix, cut, stick, attach, collage, paint, draw, construct, pattern, artist, sculpt, sculpture, portrait, self-portrait, brush, scissors, glue, sticky tape, clay, palette, computer and positional language	

	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
Year 1 Design and make a house from 1666 Design and make a fruit salad. Create a freestanding structure.	Can they think of some ideas of their own? Can they explain what they want to do? Can they use pictures and words to plan?	Can they explain what they are making? Can they explain which tools are they using?	Can they describe how something works? Can they talk about their own work and things that other people have done?	Can they join materials in different ways? Can they explore how to use joining, folding or rolling to make it stronger? Can they use levers or slides to make my work move? Can they say why they have used moving parts in my work?	Can they cut / peel or grate food safely? Can they describe the texture of foods? Do they wash their hands and make sure that surfaces are clean? Can they measure or weigh using measuring cups or electronic scales? Can they assemble or cook ingredients? Can they think of interesting ways of decorating their food?
Key Vocabulary	cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards features, suitable, quality mock-up, design, make, evaluate, user, purpose, ideas, design criteria, product, function names of existing products, joining and finishing techniques, tools, fabrics and components' template, pattern pieces, mark out, join, decorate, finish				

	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
Year 2 Design and make a moving vehicle. Design and make a healthy sandwich. Design and make a puppet with moving parts.	Can they think of ideas and plan what to do next? Can they propose more than one idea for their product? Can they use ICT to communicate ideas? Can they choose the best tools and materials? Can they give a reason why these are best? Can they describe their design by using pictures, diagrams, models and words as they are developed? Can they add notes to drawings to help explanations?	Can they join things (materials/ components) together in different ways? Can they discuss their work as it progresses? Can they select the tools needed to work with the materials? Can they explain which materials they are using and why?	Can they decide how existing products do / do not achieve their purpose? Can they explain what went well with their work? Can they discuss how closely their finished product meets their own design criteria? If they did it again, can they explain what they would improve?	Can they start to use technical vocabulary? Can they measure textile? Can they join textiles together to make something? Can they cut textiles? Can they explain why they chose a certain textile? Can they decorate using a variety of techniques? Can they join materials together as part of a moving product? Can they add some kind of design to their product? Can they attach wheels to a chassis using an axle? Can they measure materials to use in a model or structure? Can they join material in different ways? Can they use joining, folding or rolling to make it stronger? Can they cut out shapes which have been created by drawing round a template? Can they make sensible choices as to which material to use for their constructions? Can they develop their own ideas from initial starting points? Can they incorporate some type of movement into models? Can they consider how to improve their construction?	Can they cut, peel, grate and chop a range of ingredients? Can they describe the properties of the ingredients they are using? Can they work safely and hygienically? Can they talk about the Eatwell plate? Can they understand and explain where food comes from?

				Can they make a simple structure more stable?	
Key Vocabulary	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, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating, tasting, arranging, popular, vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved metal, wood, plastic				

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Year 3 Design and make a floating garden. Practical Action – Beat the flood. Design and make an Egyptian Sarcophagus.	Can they show that their design meets a range of requirements? Can they put together a step-by-step plan which shows the order and also what equipment and tools they need? Can they describe their design using an accurately labelled sketch and words? How realistic is their plan? Can they think ahead about the order of their work? Can they propose realistic suggestions as to how they can achieve their design? Can they develop more than one design or adaptation of initial design? Can they decide which design idea to develop? Can they investigate similar products to the one to be made to give starting points for a design?	Can they use equipment and tools accurately? Can they select from a range of tools for cutting, shaping, joining and finishing? Use tools with accuracy? Select from materials according to their functional properties? Use appropriate finishing techniques?	Can they explain what they changed which made their design even better? Consider and explain how the finished product could be improved? Discuss how well the finished product meets the user's design criteria? Investigate key events and individuals in design and technology?	Use an increasingly appropriate technical vocabulary for tools materials and their properties? Can they understand seam allowance? Can they join textiles of different types in different ways? Can they choose textiles both for their appearance and also qualities? Can they sew on buttons and make loops? Do they select the most appropriate tools and techniques to use for a given task? Can they make a product which uses both electrical and mechanical components? Can they use a simple circuit? Can they include electrical systems such as switches, bulbs and buzzers? Can they use ICT to control products? Do they use the most appropriate materials? Can they work accurately to make cuts and holes? Can they join materials? Can they strengthen frames with diagonal struts?	Can they follow instructions and recipes? Can they choose the right ingredients for a product? Can they join and combine a range of ingredients? Can they use equipment safely? Can they make sure that their product looks attractive? Can they describe how their combined ingredients come together? Can they set out to grow plants such as cress and herbs from seed with the intention of using them for their food product? Are they beginning to understand the food groups on the Eatwell plate?

				Measure and mark square sections, strip and dowels accurately to 1 cm? Do they select the most appropriate materials? Can they use a range of techniques to shape and mould? Do they use finishing techniques?	
Key Vocabulary	fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance 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, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener, pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight, linear, rotary, oscillating, reciprocating, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces, planning, design criteria, purpose, user, annotated sketch, sensory evaluations.				

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Year 4 Design and make Festive gifts. Design and make a pop up card or book. Design and make a diorama of a Norman castle.	Can they come up with at least one idea about how to create their product? Do they take account of the ideas of others when designing? Can they produce a plan and explain it to others? Are they aware of the strengths and weaknesses of their design ideas in relation to purpose / user? Can they record the plan by drawing using annotated sketches? Can they use prototypes to develop and share ideas? Can they sketch existing products in order to analyse and understand how products are made? Are they considering aesthetic qualities of materials chosen? Are they using CAD where appropriate? Can they investigate key individuals and events in design technology?	Can they suggest some improvements and say what was good and not so good about their original design? Can they tell if their finished product is going to be good quality? Are they conscience of the need to produce something that will be liked by others? Can they show a good level of expertise when using a range of tools and equipment? Do they work at their product even though their original idea might not have worked? Can they prepare pattern pieces as templates for their design? Can they select different techniques for different parts of the process?	Have they thought of how they will check if their design is successful? Can they begin to explain how they can improve their original design? Can they evaluate their product, thinking of both appearance and the way it works? Do they take time to consider how they could have made their idea better?	Use an increasingly appropriate technical vocabulary for tools materials and their properties. Can they make healthy eating choices? Are they using their awareness of the Eatwell plate in their choices? Do they understand seasonality? Do they know where and how ingredients are reared and caught? Can they prepare and cook using different cooking techniques? Do they know what to do to be hygienic and safe? Have they thought what they can do to present their product in an interesting way? Understand seam allowance? Sew on a button and make a loop? Do they think what the user would want when choosing textiles? Have they thought about how to make their product strong? Can they devise a template? Can they explain how to join things in a different way? Can they add things to their circuits?	

				How have they altered their product after checking it? Are they confident about trying out new and different ideas? Can they measure carefully so as to make sure they have not made mistakes? How have they attempted to make their product stronger? Can they strengthen frames with diagonal struts? Can they measure and mark square section, strip and dowel accurately to 1cm? Can they use a range of advanced techniques to shape and mould? Do they use finishing techniques, showing an awareness of audience?	
Key Vocabulary	shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating, 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, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces, planning, design criteria, purpose, user, annotated sketch, sensory evaluations				

	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
Year 5 Design and make festive decorations. Design and make a pop up card or book. Design, sew, make, do and mend: Textiles.	Can they investigate key events and individuals in design technology? Can they come up with a range of ideas after they have collected information? Do they take a user's view into account when designing? Can they produce a detailed step-by-step plan using annotated diagrams? Can they suggest some alternative plans and say what the good points and drawbacks are about each? Can they research and evaluate existing products to inform their design? Can they use models, kits and drawings to formulate ideas? Can they sketch models alternative ideas?	Can they develop one idea in depth? Can they cut accurately and safely to a marked line? Can they select from and use a wide range of materials? Can they explain why their finished product is going to be of good quality? Can they explain how their product will appeal to the audience? Can they select from and use a range of tools and equipment expertly? Do they persevere through different stages of the making process? Can they develop one idea in depth?	Do they keep checking that their design is the best it can be? Do they check whether anything could be improved? Can they evaluate appearance and function against the original criteria?	Use the correct vocabulary appropriate to the project. Do they think what the user would want when choosing textiles? How have they made their product attractive and strong? Can they make up a prototype first? Can they use a range of joining techniques? Can they incorporate a switch into their product? Can they refine their product after testing it? Can they incorporate hydraulics and pneumatics? Are their measurements accurate enough to ensure that everything is precise? How have they ensured that their product is strong and fit for purpose? Can they join materials using appropriate methods? Can they cut strip wood, dowel, square section wood accurately to 1mm? Can they build frameworks to support mechanisms?	Can they join and combine a widening range of ingredients? Can they select and prepare foods for a particular purpose? Do they know where and how ingredients are grown and processed? Can they describe what they do to be both hygienic and safe? How have they presented their product well?

				Can they stiffen and reinforce complex structures? Do they use mechanical systems such as cams, pulleys and gears? Are they motivated enough to refine and further improve their product using mouldable materials?	
Key Vocabulary	seam, seam allowance, wadding ,reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper, frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype				

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Year 6 Marbulous Structures Design and make a shelter. Design and make a Phones Case.	Can they investigate key events and individuals in design technology? Can they research and investigate how key people have influenced design in a variety of contexts? Can they use a range of information to inform their design? Can they use market research to inform plans? Can they work within constraints? Can they devise a step by step plan which can be read / followed by someone else? Can they use exploded diagrams and cross-sectional diagrams to communicate ideas? Can they follow and refine their plan if necessary? Can they justify their plan to someone else? Do they consider culture and society in their designs?	Can they make prototypes? Do they use researched information to inform their decisions? Can they produce detailed lists of ingredients, components/ materials and tools? Can they refine their product – review and rework / improve where necessary? Can they use tools and materials precisely?	Can they identify the strengths and weaknesses of their design? Can they report using technical vocabulary in their work? How well do they test and evaluate their final product? Is it fit for purpose? Can they discuss how well the finished product meets the design criteria having tested it out on and discussed outcomes with users? What would improve it? Would different resources have improved their product throughout the making process? Would they need more or different information to make it even better? Does their product meet all design criteria? Did they consider the use of the product when selecting materials?	Can they use the correct technical vocabulary related to their project? Do they understand pattern layout with textiles? Do they include seam allowance? Can they create 3d textiles products using pattern pieces? Have they thought about how their product could be sold? Have they given considered thought about what would improve their product even more? Can they use different kinds of circuit in their product? Can they include electrical systems such as motors and switches? Can they think of ways in which adding a circuit would improve their product? Can they use programmes, monitor and control ICT? Can they cut strip wood, dowel, square section wood accurately to 1mm? Can they build frameworks to support mechanisms?	Do they understand and apply the principles of a healthy and varied diet? Can they choose ingredients to support healthy eating choices when designing their food product? Can they explain how their product should be stored within reasons? Can they prepare and cook a variety of mostly savoury dishes using a range of cooking techniques?

			Can they identify the strengths and weaknesses of their design? Can they report using technical vocabulary in their work?	Can they stiffen and reinforce complex structures? Can they use mechanical systems such as cams, pulleys and gears? Can they justify why they selected specific materials? How have they ensured that their work is precise and accurate? Can they hide joints so as to improve the look of their product? Can they justify why the chosen material was the best for the task? Can they justify design in relation to the audience?	
Key Vocabulary	pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram annotated, drawings, exploded diagrams, mechanical system, electrical system, input, process, output series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart, cam, snail cam, off-centre cam, peg cam, pear-shaped cam, follower, axle, shaft, crank, handle, housing, framework, rotation, rotary motion, oscillating motion, reciprocating motion, annotated sketches, exploded diagrams, mechanical system, input movement, process, output movement design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype				