

BRANDON PRIMARY ACADEMY
DESIGN TECHNOLOGY - PROGRESSION OF SKILLS

	Skills							Vocabulary
	Generating Ideas	Make	Evaluate	Food & Nutrition	Structures	Textiles	Mechanisms	
N	Manipulate and play with different materials and explore different materials freely.	Make simple models that express their ideas.	To begin to share what they like about their creation.	To wash their hands correctly and know the importance of hand washing. To explore and handle tools when using food.	Join different materials and explore different textures.	To know that threading is putting one material through an object.		Mechanisms – slider, slot, push, up, down, forwards, backwards Structures – join, stick, cut, bend, slot, scissors, measure, materials, fix, waterproof, absorb, prediction, experiment, investigation, float, sink, junk
R	Use their imagination, explore and develop ideas about how to use them and what to make.	Create collaboratively, sharing ideas, resources and skills. Make simple suggestions to fix their junk model.	To share what they like and suggest what they might do next.	To explore familiar and healthy foods. To use tools to prepare food. To understand the importance for hygiene when preparing food.	To know there are a range to different materials that can be used to make a model and that they are all slightly different.	Exploring fine motor/threading and weaving (under, over technique) with a variety of materials. Use a prepared needle and wool to practise threading.	To explore moving pictures using sliders.	Food – fruit, vegetables, safety, knife, blade, tool, edge, handle, chop, slice, cut, saucepan, blender, chopping board, hob, boil, blend, mix, packaging, recyclable, metal, plastic, reusable Textiles – thread, weave, pattern, sew, sewing needle, design. <i>Draw, ideas, build, make, like, dislike, better, worse,</i>
Y1	To design products for themselves following a design criteria. To use pictures and words to plan. Work in a range of contexts e.g. home, school, imaginary, story based.	Explain what is being made and why. Select appropriate tools and equipment for the purpose.	To explore a range of existing products and talk about what is good and bad about them. Say whether a product does what it is meant to (according to the design criteria) and how it could be improved.	To know how to peel, cut, grate and mould foods (with close supervision). To understand where food comes from.	To use sheet materials and construction tools with appropriate supervision.		To know about movement of simple mechanism such as sliders, levers, wheels and axes.	Mechanisms – slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards Structures – 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, cube, cylinder. Food - fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, skin, seed, pip, core, slice, peel, cut, squeeze, healthy diet, ingredients, planning, investigating, tasting, popular <i>Design, evaluate, make, ideas, design criteria, product, function</i>

Y2	To design products for themselves and others based on design criteria. Describe own ideas by talking, drawing, templates and using ICT. Work confidently in a range of contexts.	Explain what is being made and why the audience will like it. Choose appropriate tools and equipment, describing and explaining why they are being used.	Describe how their own and pre-existing products work, evaluating what went well and what could be done differently. Say whether their own product does what it is meant to and suggest ways to improve or do things differently.		To build structures, exploring how they can be made stronger, stiffer and more stable.	Cut then join textiles using a running stitch over sewing or glue. Decorate with a range of items (buttons, sequins, bead etc.).	To explore and use mechanisms (e.g. pulleys, wheels and axels) in their products.	Mechanisms – vehicle, wheel, axle, axle holder, chassis, body, cab assembling, shaping, finishing, fixed, free, moving, names of tools, equipment and materials used. Structures – 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, cube, cylinder. Textiles – tools, fabrics, components, template, pattern pieces, join, decorate, running stitch. <i>Design brief, design criteria, make, evaluate, purpose, and function.</i>
Y3	Create a design that meets a range of requirements. Consider the equipment and tools needed when planning. Describe a design using an accurately labelled diagram, and use words.	Use a range of tools and equipment with accuracy. Measure, mark out, join, and assemble materials and components with accuracy.	Evaluate own and existing products. Suggest what could be changed to improve a design, beginning to link this to the design brief.	Know how to peel, cut, grate mix, and mould and begin to cook foods (using toasters and microwaves). Understand and apply the principles of a healthy and varied diet		Cut then join textiles using a running stitch or over sewing. Create simple patterns and appropriate decoration techniques.	To begin to understand and use mechanical systems in their products (e.g. pivots, levers and linkages)	Mechanisms – mechanism, lever, linkage, pivot, slot, cutting, joining, names of tools, equipment and materials used. Food - fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, skin, seed, pip, core, slice, peel, cut, squeeze, healthy diet, ingredients, planning, investigating, tasting, popular. Textiles – tools, fabrics, components, template, pattern pieces, join, decorate, running stitch, over-sewing. <i>User, purpose, design, model, evaluate planning, design criteria, purpose, annotated sketch.</i>
Y4	Consider more than one idea for how to create a product. Produce plans with labelled diagrams, written explanation and step-by step guide. Suggest improvements to develop and refine a planned idea.	Use a range of tools and equipment with accuracy. Measure, mark out, join, and assemble materials and components with accuracy.	Evaluate the appearance, usability of own, and pre-existing products. Explain how the original design could be improved, considering the appearance and usability and linking this to the design brief.		To begin to apply their understanding of how to strengthen, stiffen and reinforce structures that are more complex.		To begin to understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors).	Structures –three-dimensional (3-D) shape, vertex, edge, face, length, width, breadth, lever and linkages. marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, corrugating, Electrical Systems – – series circuit, fault, connection, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, Pneumatics -compressed, pneumatic, hydraulic, pressure, inflate, deflate, syringe, system <i>User, purpose, function prototype, design criteria, innovative, appealing, design brief.</i>

Y5	Generate a range of ideas after collating relevant information (i.e. user views). Produce a detailed plan with systematic instructions and cross-sectional diagrams. Investigate prototypes to improve planning.	Use a range of tools and equipment with improved skill and independence. Consider the aesthetic qualities and functionality of own work when making.	Evaluate the appearance and function of a product (own and pre-existing) against the design criteria, saying whether it is fit for purpose. Suggest improvements that could be made, considering materials and methods that have been used.		To apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Cut then join textiles using a range of stitches e.g. running stitch, over sewing, backstitch, cross-stitch or fastenings. Understand seam allowances, create simple patterns and appropriate decoration techniques.	To understand how mechanical systems such as pulleys, cams or gears create movement.	Mechanisms – systems pulley, computer aided manufacture (CAM) ,drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, mechanical system, rotary, oscillating, reciprocating, input, process, output design decisions, functionality. Structures – frame structure, stiffen, strengthen, and reinforce, stability, shape, and join, temporary, permanent. Textiles – fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces. <i>design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, evaluate</i>
Y6	Use a range of information to inform design. (I.e. market research, surveys, interviews, questionnaires or web-based resources). Produce a detailed plan, with cross sectional diagrams and computer aided designs. Work within constraints, refining and justifying plans a necessary.	Use a range of age-appropriate tools and equipment independently. Consider the aesthetic qualities and functionality of my product as making it, refining details as necessary.	Evaluate the appearance and test the function of a product (own and existing) against the original criteria, saying whether it is fit for purpose. Suggest improvements that could be made, considering materials, methods, sustainability of the product and how much a product costs to make.	Cut, mix, mould and use hobs to heat food with developing independence. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.		Pin and tack fabrics, use patterns and seam allowances and join fabrics to make quality products.	To understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors) To apply their understanding of computing to program, monitor and control their products.	Mechanical – systems pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor circuit, switch, circuit diagram annotated drawings, mechanical system, electrical system, input, process, output design decisions, functionality Food – 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 Textiles –lettering, text, graphics, menu, scale, modify, repeat, copy, flip design brief, design criteria, design decisions, seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper, annotate, functionality, <i>Innovation, authentic, user, purpose, evaluate, mock-up, prototype</i>