D&T Skills, Knowledge and Vocabulary

	R	Y1	Y2	Y3	Y4	Y5	Y6
Designing		▪ Generate ideas based on simple design criteria through talking about their own experiences and drawing, explaining what they could make. ▪ Generate ideas for a healthier snack by investigating a variety of fruit and vegetables. ▪ Develop, model and communicate their ideas through talking, drawings and mock-ups with card and paper. ▪ Design appealing products e.g. a fruit kebab, for a particular user based on simple design criteria.	▪ Generate initial ideas and simple design criteria and their own experiences, explaining what they could make. ▪ Generate, develop, model and communicate their ideas as appropriate through talking, using own experiences, drawing, templates, mock-ups with card, paper and information and communication technology. ▪ Design a functional, appealing product e.g. a simple, vegetable based pizza for a chosen user and purpose based on simple design criteria. ▪ Generate initial ideas and design criteria through investigating a variety of vegetables and cheeses (for pizza).	▪ Through collaborative discussion, generate realistic, appropriate ideas and their own design criteria for an aesthetically pleasing, appealing and functional product rather is fit for purpose and focuses on the needs of the user. ▪ Develop ideas through the analysis of existing products including shell structures and use computer-aided design to model and communicate ideas. Produce and use annotated sketches, prototypes, final product sketches and pattern pieces to develop, model and communicate ideas. ▪ Generate ideas through discussion with peers and adults to develop a cold sandwich/wrap which includes appealing appearance, taste and texture. Use sketches and appropriate information such as recipe books to develop and communicate ideas.	▪ Generate realistic ideas and their own design criteria through discussion, and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. Use annotated sketches and prototypes to develop, model and communicate ideas. ▪ Gather information about needs and wants of the user, and develop design criteria to inform the design of products that are fit for purpose. ▪ Generate and clarify ideas through discussion with peers and adults and with reference to prior sandwich making. Develop design criteria including appearance, bread suitability, taste, texture and aroma for an appealing, hot snack. ▪ Use annotated sketches and ICT including web based recipes to develop and communicate ideas.	▪ Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. Develop a simple design specification to guide their thinking and develop ideas and products taking account of constraints including time, resources and cost. Generate, develop and model innovative ideas and communicate these through discussion, prototypes, annotated drawings, exploded drawings and drawings from different views. ▪ Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer- aided design. ▪ Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.	▪ Generate and develop innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. ▪ Develop a simple design specification to guide their thinking. ▪ Develop and communicate ideas and share and clarify these through discussion, annotated drawings, exploded drawings, drawings from different views and pictorial representations of electrical circuits or circuit diagrams. ▪ Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost.
Making	**Early Learning Goals** • Use a range of small tools including scissors, paintbrushes and cutlery. **Development Matters (non-statutory)** • Develop their small motor skills so that they can use a range of tools • competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.	▪ Plan by suggesting what to do next. ▪ Select and use tools, skills and techniques, explaining their choices. To use tools, skills and techniques to cut, shape and join paper and card. ▪ Use simple finishing techniques suitable for their structures and products. ▪ With support, use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. ▪ Select from a range of fruit according to their characteristics e.g. colour, texture and taste to create a fruit kebab. ▪ Select new and reclaimed materials and construction kits to build their structures.	▪ With some support, use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. ▪ Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. Select from a range of vegetables (and 2 varieties of cheese) based on taste, texture when melted and taste to create a savoury pizza. ▪ Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. Select from and use textiles according to their characteristics and use simple finishing techniques suitable for their products. ▪ Select from and use a range of tools and equipment (whilst explaining their choices) to perform practical tasks such as cutting and joining to allow movement and finishing. ▪ Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.	▪ Order and plan the main stages of making. ▪ With some accuracy, select and use a range of appropriate tools fastenings which will enable them to use a range of cutting, joining and finishing techniques. Select a range of fabrics and fastenings according to their functional characteristics e.g. strength and aesthetic qualities e.g. pattern. ▪ With some accuracy, select from and use appropriate tools to cut and join materials and components such as tubing, syringes and balloons.With these tools and where appropriate, software, mark out, cut, score, shape and assemble with some accuracy. Select from and use finishing techniques including computer-generated ones, suitable for the product they are creating and explain their choice of materials according to functional properties and aesthetic qualities. ▪ Plan the main stages of making a sandwich including listing ingredients, utensils and equipment. Select from a range of ingredients to make an appropriate cold snack thinking about sensory characteristics and how to make this appealing to their intended user.	▪ Order and plan the main stages of making. ▪ Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. Select from and use finishing techniques suitable for the product they are creating. ▪ Select from and use tools and equipment to cut, shape, join and finish with some accuracy. ▪ Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. ▪ Connect simple electrical components and a battery in a series circuit to achieve a functional outcome. Program a standalone control box, microcontroller or interface box to enhance the way the product works. ▪ Collaboratively make and update a shopping list of suitable ingredients, utensils and equipment appropriate for a hot sandwich with a focus on the design criteria and intended user's preference. Select and use appropriate utensils and kitchen equipment including grill, pan, oven etc.	▪ Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. ▪ Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost. ▪ Produce detailed lists of equipment and fabrics relevant to their tasks. Formulate clear, step-by-step plans and a step-by-step list of what needs to be done (and a list of resources to be used). If appropriate, allocate tasks within a team. Use finishing and decorative techniques suitable for the products they are designing and making. Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. ▪ Select from and use a range of tools, equipment and CAD to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. ▪ Write a recipe from a choice of baked, savoury goods including a list of ingredients, equipment and utensils. Select and use appropriate utensils and equipment with some accuracy to measure and combine food ingredients taking into account the season / celebration.	▪ Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. ▪ Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost. ▪ Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. ▪ Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. ▪ Create and modify a computer control program to enable their electrical product to respond to changes in the environment. ▪ Write a step-by-step recipe for baking a savoury bread with the option of including a vegan / gluten free option for users' preferences. Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients, taking into account the season/celebratory event.

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	R	Y1	Y2	Y3	Y4	Y5	Y6
Evaluating		**Pre-topic Evaluation:** ▪ Explore a range of existing buildings, structures, existing books that use simple sliders and levers, a range of products with wheels and axles including everyday products within the school and local environment. ▪ Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. ▪ **Post- topic Evaluation:** ▪ Evaluate their own ideas and finished products by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. ▪ Or with food, how well the fruit kebab met design criteria and intended user purpose.	**Pre topic Evaluation:** ▪ Evaluate their ideas throughout. ▪ Explore and evaluate a range of existing textile products relevant to the project being undertaken. ▪ Explore and evaluate a range of products with wheels and axles. ▪ Explore and evaluate a range of existing textile products relevant to the project being undertaken. ▪ Taste and rate a range of ready-made pizzas according to taste, appearance and evaluate the appearance of other available pizzas and how well they meet the intended user's preferences. ▪ **Post topic Evaluation:** ▪ Evaluate their ideas and finished pizzas against their design criteria, including intended user and its purpose. ▪ Evaluate their ideas throughout and their products against original criteria. ▪ Test their product against the original design criteria and with the intended user. ▪ Take into account others' views. ▪ Understand how a key event/individual has influenced the development of the chosen product and/or fabric. (This can be done at any time through the project)	Pre topic Evaluation: ▪ Investigate a range of 3-D textile products relevant to the project. ▪ Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used *e.g. food packaging, tunnels, helmets, drinks cans and boats.* ▪ Investigate and analyse books, videos and products with pneumatic mechanisms, *e.g. bike or ball pump, the automatic door button outside school* ▪ Understand how a key event/individual has influenced the development of the chosen product and/or fabric *e.g. Fiona Fairhurst (Fastskin swimwear designer)* ▪ Carry out evaluations of a variety of ready-made sandwiches, wraps etc and their ingredients. Record their findings in simple tables including pictograms. ▪ Post topic Evaluation: ▪ Test their product against the original design criteria and with the intended use and take into account others' views. ▪ Test and evaluate their own products and ideas against criteria and user needs, as they design and make and at the end of the process against the intended user process. ▪ Evaluate the end food product with reference to design criteria and the views of other.	Pre topic Evaluation: ▪ Investigate and analyse books and, where available, other products with lever and linkage mechanism *e.g. windscreen wipers and their inventor, Mary Anderson.* ▪ Investigate and analyse a range of existing battery-powered products *e.g. torches, leaf blowers, solar lights* including pre- programmed and programmable products *e.g thermostats, coffee maker, mobile phone (the alarm goes off at 10:15)* ▪ Evaluate the sandwich made in Year 3 and through collaborative discussion, decide how the sandwich could be improved and how it was successful against the design criteria. Carry out sensory evaluations of a variety of suitable ingredients and products. Record the evaluations using tables and simple graphs. ▪ Post topic Evaluation ▪ Evaluate their own products and ideas against criteria and user needs, as they design and make and identify the strengths and areas for improvement in their work. ▪ Evaluate the ongoing food work and the final product with reference to the design criteria and the views of others.	Pre topic Evaluation: ▪ Investigate famous manufacturing and engineering companies relevant to the project e.g. *Aston Martin* ▪ Investigate and evaluate a range of existing frame structures and research key events and individuals relevant to frame structures *e.g. Stephen Sauvestre – designer of the Eiffel Tower.* ▪ Investigate and analyse textile products linked to their final product. ▪ Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. ▪ Post topic Evaluation ▪ Compare the final product to the original design specification, taking into account the views of others when identifying improvements. ▪ Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. ▪ Consider the views of others to improve their work.	▪ Pre topic Evaluation: ▪ . Investigate famous inventors who developed ground-breaking electrical systems and components *e.g. Thomas Edison or Nikola Tesla* ▪ Understand how key chefs have influenced eating habits to promote varied and healthy diets *e.g. Jamie Oliver or Ella Woodward* ▪ Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. ▪ During and Post topic Evaluation ▪ Compare the final product to the original design specification, taking into account the views of others when identifying improvements. Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. ▪ Consider the views of others to improve their work. ▪ Continually evaluate and modify the working features of the product to match the initial design specification. ▪ Test the system to demonstrate its effectiveness for the intended user and purpose.
Mechanisms and Mechanical Systems		Sliders and Levers **Technical Knowledge and Understanding** • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement *e.g. sliders move in a straight line, levers move in a curve.* • Know and use technical vocabulary relevant to the project. **Vocabulary** Slider, lever, pivot, slot, bridge, guide Card, masking tape, paper fastener, join Pull, push, up, down, straight, curve, forwards, backwards Design, make, evaluate, users purpose, ideas, design criteria, product, function	Wheels and Axles **Technical Knowledge and Understanding** • Explore and use wheels, axles and axle holders • Distinguish between fixed and freely moving axles *e.g. an axle is a rod on which one or more axles can rotate either freely or be fixed to turn with the axle.* • Know and use technical vocabulary relevant to the project. **Vocabulary** vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used design, make, evaluate, purpose, user, criteria, functional Notable person: Elon Musk – link with Tesla cars / wheels and axles. https://kids.britannica.com/students/article/Elon-Musk/623517	Pneumatics **Technical Knowledge and Understanding** • Understand and use pneumatic mechanisms *a pneumatic is a system that works using gases (air)* • Know and use technical vocabulary relevant to the project. **Vocabulary** 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, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate	Levers and Linkages **Technical Knowledge and Understanding** • Understand and use lever and linkage mechanisms *e.g linear (straight line), reciprocating (back and forth in a straight line – a slider), rotary (round and round e.g wheel, cam, pulley) and oscillating (back and forth in an arc – a lever)* • Distinguish between fixed and loose pivots *e.g. a loose pivot is a paper fastener that joins card strips together, a fixed pivot is a paper fastener that joins card strips to the backing card.* • Know and use technical vocabulary relevant to the project. **Vocabulary** mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating user, purpose, function prototype, design criteria, innovative, appealing, design brief Notable person: Mary Anderson https://www.lottie.com/blogs/strong-women/mary-anderson-biography-for-kids	Cams **Technical Knowledge and Understanding** • Understand that mechanical systems have an input, process and an output. • Understand how cams can be used to produce different types of movement and change the direction of movement *e.g oscillating (moving to and fro around a pivot point, as in a lever) reciprocating (back and forth in a straight line , as in a slider) and rotating (movement that goes round)* • Know and use technical vocabulary relevant to the project. **Vocabulary** 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 decisions, functionality, innovation, authentic, user, purpose, design specification, design brief	Pulleys or Gears **Technical Knowledge and Understanding** • Understand that mechanical and electrical systems have an input, process and an output. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement *e.g.two pulleys linked by an elastic band reduce the rate of rotation.* • Know and use technical vocabulary relevant to the project. **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 design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief Notable person:

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	R	Y1	Y2	Y3	Y4	Y5	Y6
Structures	**Early Learning Goals** **Expressive Arts and Design – 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. **Physical Development – Fine Motor Skills:** • Use a range of small tools, including scissors, paintbrushes and cutlery. • Begin to show accuracy and care when drawing. **Development Matters (non-statutory)** • Expressive Arts and Design: • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively sharing ideas, resources and skills. **Physical Development:** • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.	Freestanding Structures **Technical Knowledge and Understanding** • Know how to make freestanding structures stronger, stiffer, and more stable *e.g. brick bonding, making the base of a building wider (buttresses), triangular bases and using tapes and glue.* • Know and use relevant technical vocabulary. **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 design, make, evaluate, user, purpose, ideas, design criteria, product, function Notable person: Frank Matcham – architect of Blackpool Tower https://www.blackpoolgrand.co.uk/box-office-and-venue/our-venue/architect-frank-matcham		Shell Structures with CAD **Technical Knowledge and Understanding** • Develop and use knowledge of how to construct strong, stiff shell structures *e.g. laminating (gluing several layers), corrugating (zig-zag piece of paper/card and glue between two layers of card) and ribbing (glue layers of straws between layers of card)* • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project. **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, evaluating, design brief design criteria, innovative, prototype Notable person: Zaha Hadid - Architect https://www.drake.norfolk.sch.uk/zaha-hadid-1/ https://www.theguardian.com/artanddesign/2016/mar/31/zaha-hadid-10-best-buildings-in-pictures		Frame Structures **Technical Knowledge and Understanding** • Understand how to strengthen, stiffen and reinforce 3-D frameworks e.g. triangulation (adding triangles within frames for rigidity) or making triangle cards to add to wood for joints. Joining straws techniques (threading and tying, gluing to card, flattened, wrapped around and glued etc.) • Know and use technical vocabulary relevant to the project. **Vocabulary** frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional Notable person: Stephen Sauvestre https://kids.kiddle.co/Stephen_Sauvestre	

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	R	Y1	Y2	Y3	Y4	Y5	Y6
Food	**Early Learning Goals** • Understand the importance of healthy food choices. **Development Matters (non-statutory)** • Know and talk about the different factors that support their overall health and wellbeing: regular physical activity, healthy eating, toothbrushing, sensible amounts of 'screen time', having a good sleep routine, being a safe pedestrian	Preparing Fruit and Vegetables Fruit Kebabs **Technical Knowledge and Understanding** • To understand that some of the fruit used in fruit kebabs is grown in the UK and others in warmer climates such as South America. • To begin to understand where a range of fruit and vegetables are grown e.g. pineapple is grown in warmer countries. • Begin to understand and use the principles of a healthier and more varied diet, including how fruit and vegetables are part of The eat-well plate. • Know and use technical and sensory vocabulary relevant to the project. **Vocabulary** Fruit names (e.g. apple, pear, kiwi, pineapple) Names of equipment and utensils such as skewer, knife, chopping board. Hygiene vocabulary including wash, lather, rinse, shake, dry, clean, germs. Sensory vocabulary e.. soft, hard, crunchy, juicy, sweet, sticky, sour, smooth. Flesh, skin, seed, pip, core, slice, cut, peel, healthier, fresh, Choosing, ingredients, planning, tasting, arranging, skewering, designing, evaluate, criteria. Notable person: Jamie Oliver https://www.jamieoliver.com/features/category/get-kids-cooking/	Preparing Fruit and Vegetables (Autumn Term) Savoury Pizzas (sweet pizza optional) **Technical Knowledge and Understanding** • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthier and more varied diet to prepare sweet and savoury dishes, including how fruit and vegetables are part of The eat-well plate. • Know and use technical and sensory vocabulary relevant to the project. **Vocabulary** Fruit and vegetable vocabulary e.g. onion, mushroom, e.g. peppers, beetroot, rocket etc, salt and pepper, garlic, tomatoes, herbs. Names of equipment, utensils and techniques e.g grater, slicer, oven, oven-glove, temperature, heat, cooled, melted, slicing, cutting, layering, spreading etc. Sensory vocabulary e.g. sweet, savoury, crunchy, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria Notable person: Gino D'Acampo https://ginodacampo.com/	Healthy and Varied Diet (extra mini topic) **Technical Knowledge and Understanding** • With support, know how to use some equipment and utensils to prepare and combine cold food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately. **Vocabulary** name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, fresh, savoury hygienic, edible, grown, reared, caught, frozen, tinned, processed, healthy/varied diet planning, design criteria, purpose, user, annotated sketch, sensory evaluations Notable person: Ainsley Harriet https://kids.kiddle.co/Ainsley_Harriott	Healthy and Varied Diet **Technical Knowledge and Understanding** • Know how to use appropriate equipment and utensils to prepare, combine and heat fresh food. • Know about a wider range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately. **Vocabulary** 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 planning, design criteria, purpose, user, annotated sketch, sensory evaluations Notable person: Nadiya Hussain https://www.nadiyahussain.com/about-me/	Celebrating Culture and Seasonality **Technical Knowledge and Understanding** • Begin to know how to use utensils and equipment including heat sources to prepare and cook food. • Begin to understand about seasonality in relation to food products and the source of different food products. • Know and use relevant technical and sensory vocabulary. **Vocabulary** ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, dairy savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble design specification, innovative, research, evaluate, design brief Notable person: Mary Berry https://www.maryberry.co.uk/	Celebrating Culture and Seasonality **Technical Knowledge and Understanding** • Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Know and use relevant technical and sensory vocabulary. **Vocabulary** 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 specification, innovative, research, evaluate, design brief Notable person: Nigella Lawson https://www.nigella.com/

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	R	Y1	Y2	Y3	Y4	Y5	Y6
Textiles	**Early Learning Goals** **Expressive Arts and Design – 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. • Physical Development – Fine Motor Skills: • Use a range of small tools, including scissors, paintbrushes and cutlery **Development Matters (non-statutory)** • Expressive Arts and Design: • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively sharing ideas, resources and skills. **Physical Development:** • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons		Templates and Joining **Technical Knowledge and Understanding** • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques *e.g. running stitch, glue, over stitch, stapling.* • Explore different finishing techniques *e.g. using painting, fabric crayons, stitching, sequins, butto*ns and ribbons. • Know and use technical vocabulary relevant to the project. **Vocabulary** products, joining and finishing techniques, tools, fabrics and components template, pattern pieces, mark out, join, decorate, finish features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function Notable person: Alexander McQueen https://www.vam.ac.uk/articles/alexander-mcqueen-an-introduction	2D Shape to 3D Product **Technical Knowledge and Understanding** • Know how to strengthen, stiffen and reinforce existing fabrics *e.g with glue, running stitch, stapling etc.* • Understand how to securely join two pieces of fabric together e.g. *back stitch, running back stitch, over sew stitch, blanket stitch, running stitch.* • Understand the need for patterns *(a shape drawn to exact shape and size to assist cutting out)* and seam allowances *(an extra piece of fabric allowed for joining together- usually 1.5cm)* • Know and use technical vocabulary relevant to the project **Vocabulary** fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces Notable person: Vivienne Westwood https://kids.kiddle.co/Vivienne_Westwood		Combining Different Fabric Shapes Using CAD in Textiles Technical Knowledge and Understanding • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate. *Alternative stitches including stem, satin, chain and lazy daisy stitching.* 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 design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype computer aided design (CAD), computer aided manufacture (CAM) font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip	

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	R	Y1	Y2	Y3	Y4	Y5	Y6
Electrical Systems or Circuits					Simple Circuits and Switches Simple Programming and Control (CAD) <u>Technical Knowledge and Understanding</u> • Understand and use electrical systems in their products, such as series circuits incorporating switches *(handmade, push to break/make switch, reed switch and toggle switch)* bulbs and buzzers. • Understand and use computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers (*e.g. Crumble drag and drop interface and menus)* • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project. <u>Vocabulary</u> Series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED) bulb, bulb holder, wire, insulator, conductor, crocodile clip control, program, system, input device, output device user, purpose, function, prototype, design criteria, innovative, appealing, design brief Notable person: Alessandro Volta https://kids.kiddle.co/Alessandro_Volta		Monitoring and Control More Complex Switches <u>Technical Knowledge and Understanding</u> • Understand and use electrical systems in their product *(e.g. parallel circuits, micro switch, tilt switch, Light dependent resistor – LDR)* • Understand the use of computer control systems in products *(children will learn how to write a set of instructions using 'control language' or create a flowchart to produce instructions).* • Apply understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project. *Children's computing knowledge and skill need to focus on using input and output devices connected to a standalone or interface box. They use their learning in computing to control and monitor products they have designed e.g. an alarm system.* <u>Vocabulary</u> reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart function, innovative, design specification, design brief, user, purpose Notable person: Ada Lovelace https://www.lottie.com/blogs/strong-women/18992727-ada-lovelace-biography-for-kids