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| Key Vocabulary  | <p><b>Reception Vocabulary</b><br/>Cut, stick, edge, snip, material, choosing, shapes, texture, join, make, tools, assemble, fabric, card, glue, bend, fold, mix</p> <p><b>Year 1 &amp; 2 Vocabulary</b><br/>Design, technology, product, user, ideas, prototypes, mechanisms, slides, levers, design, make, evaluate, user, purpose, ideas, design criteria, product, function, slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, cut, fold, assembling, join, fix, finishing, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder, vehicle, wheel, axle, axle holder, chassis, body, cab, free, moving, mechanism, names of tools, textile tools (e.g. needles, thread), fabric names (e.g. wool, thread, felt) and components (e.g. buttons, sequins), template, pattern pieces, mark out, join, decorate, finish 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, grating, bridge &amp; claw grip, measuring, cracking, beating, dividing, snipping, healthy diet, choosing, ingredients, investigating tasting, arranging.</p> <p><b>Year 3 &amp; 4 Vocabulary</b><br/>shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, design brief/design criteria, innovative, prototype, fastening, compartment, zip, finishing technique, strength, weakness, stiffening, stitch, seam, seam allowance, purpose, model, prototype, annotated sketch, functional, investigate, label, drawing, aesthetics, linkage, loose/fixed pivot, 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, 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, varied diet, scooping; rubbing; mixing to form a dough; shaping; glazing weighing, creaming, folding in, scraping,</p> <p><b>Year 5 &amp; 6 Vocabulary</b><br/>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 frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart, 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, 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 decisions, functionality, innovation, authentic, user, purpose, design specification, design brief</p> |                                  |   |                                  |
| Year group  | Year 5<br>Progression of techniques  | Year 5<br>Teaching opportunities | Year 6<br>Progression of techniques   | Year 6<br>Teaching opportunities |
| Topic areas under headings: Design & Make and Cooking & Nutrition | <p><b>Structures – Frame structures</b><br/><b>Suggested/current project: Building a space buggy – linked to Science topic</b></p> <p><b>Mechanical systems – Cams</b><br/><b>Suggested/current project: A moving display linked to The Highway Man diorama</b></p> <p><b>Celebrating culture &amp; seasonality - Baking</b><br/><b>Suggested/current project: Tomato and Basil Bread</b></p>  |                                  | <p><b>Textiles – Combining different fabric shapes (incl. CAD)</b><br/><b>Suggested/current project: Mobile phone cases</b></p> <p><b>Electrical systems – More complex switches &amp; circuits</b><br/><b>Suggested/current project: Alarm boxes (linked to science)</b></p> <p><b>Celebrating culture &amp; seasonality – Hot meal</b><br/><b>Suggested/current project: Spaghetti bolognaise</b></p> |                                  |

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| <p>Designing</p> <p><i>This could be spread across three lessons/sessions or completed in one lesson/session</i></p> <p>Background Research - Exploring context and existing products</p> <p>Design Criteria - Understanding their intended users and their own product</p> <p>Planning – Communicating ideas and creating prototypes for the product</p> | <p><u>a. Exploring context and existing products</u><br/>Identify who made the product, when it was made and what its purpose is,<br/>Identify what the product has been made from and how environmentally friendly the materials are,<br/>Evaluate the product on design, appearance and use,<br/>Identify the cost to make the product,<br/>Brain Builders: Research facts about famous inventors/ chefs / designers etc linked to product.</p> <p><u>b. Understanding their intended users and their own product</u><br/>Understand and gather information about what a particular group or people want from a product, using questionnaires, surveys etc<br/>Describe the purpose of their product,<br/>Identify design features that will appeal to intended users,<br/>Explain how parts of their product will work,<br/>Develop their own design criteria and use for planning ideas,<br/>Generate innovative ideas that meet needs of user and take into account availability of resources.</p> <p><u>c. Communicating ideas and creating prototypes for the product</u><br/>Share and discuss ideas with others,<br/>Record a step by step plan for making,<br/>Produce lists for the tools, equipment and materials they will be using,<br/>Choose materials to use based on suitability of their properties and aesthetic qualities,<br/>Represent ideas in diagrams, annotated sketches and computer based programmes (where appropriate),<br/>Create pattern pieces and prototypes.</p> | <p>a.<br/><u>Structures:</u><br/>Investigate and make annotated drawings of a range of portable and permanent frame structures, e.g. tents, bus shelters, umbrellas. Use photographs and web-based research to extend the range e.g. How well does the frame structure meet users' needs and purposes? Why were materials chosen? What methods of construction have been used? How has the framework been strengthened, reinforced and stiffened? How does the shape of the framework affect its strength? How innovative is the design? When was it made? Who made it? Where was it made?</p> <p>Research key events and individuals related to their study of frame structures e.g. Stephen Sauvestre – a designer of the Eiffel Tower; Thomas Farnolls Pritchard – designer of the Iron Bridge. (Introduce through a reading comprehension?)</p> <p><u>Mechanical systems -</u><br/>Look at examples of how cams work in a moving picture – invest in examples that can be shown. Children to experiment with paper / cardboard cams</p> <p>b &amp; c.<br/><u>Structures:</u> Research and design a space buggy using recycled materials<br/>Create a paper plan design showing frame structure and style.<br/>Review with children different techniques for building frame structures (see Projects on a Page) including paper and dowel, joining straws and joining thin sectioned pieces of wood using card strips, elastic bands and card triangles (this made depend on which technique you want them to use to make their frame structure).</p> | <p><u>a. Exploring context and existing products</u><br/>Identify who made the product, when it was made and what its purpose is,<br/>Identify what the product has been made from and how environmentally friendly the materials are,<br/>Evaluate the product on design, appearance and use,<br/>Identify the cost to make the product and whether it has any other purposes e.g. Leading innovation of the time, trend setting,<br/>Brain Builders: Research facts about famous inventors/ chefs / designers etc linked to product.</p> <p><u>b. Understanding their intended users and their own product</u><br/>Understand and gather information about what a particular group or people want from a product, using questionnaires, surveys etc<br/>Describe the purpose of their product,<br/>Identify design features that will appeal to intended users,<br/>Explain how parts of their product will work,<br/>Create a design description for their product,<br/>Highlight the impact of time, resources and cost within their design ideas,<br/>Generate innovative ideas that meet needs of user.</p> <p><u>c. Communicating ideas and creating prototypes for the product</u><br/>Share and discuss ideas with others,<br/>Record a step by step plan for making,<br/>Produce lists for the tools, equipment and materials they will be using,<br/>Choose materials to use based on suitability of their properties and aesthetic qualities,<br/>Represent ideas in diagrams, annotated sketches and computer based programmes (where appropriate),<br/>Create pattern pieces and prototypes.</p> | <p><u>Textiles:</u><br/>Designing mobile phone case – children decide on target audience e.g. 10 year old, teenager, adult etc and create a questionnaire to decide on the design e.g. handles or not? Button fastening or Velcro? Type of design.</p> <p>From questionnaire, children create a paper design that fits the audience brief<br/>Create a paper mock-up of the phone case and then create dipryl prototype</p> <p><u>Electrical systems:</u><br/>Linked in with science unit on Electricity and 'Burglar Bill'</p> <p>Timeline of burglar alarm history<br/>Trial and review different types of switches – push, hook</p> |
| <p>Making &amp; Technical Knowledge</p> <p>Selecting the tools and applying the practical skills and techniques</p>   | <p><u>Across KS2: Use materials construction materials and kits, food, mechanical and electrical components</u></p> <p>Choose suitable tools for making whilst explaining why they should be used,<br/>Use design criteria whilst making,<br/>Follow safety and food hygiene procedures,<br/>Measure, mark, cut and shape materials and components accurately,</p>   | <p><u>Mechanical systems - Cams:</u><br/>– children creating moving picture (groups at a time).<br/>Could children use different ranges of movement – oscillating, reciprocating or rotating.</p>  | <p><u>Across KS2: Use materials construction materials and kits, food, mechanical and electrical components</u></p> <p>Choose suitable tools for making whilst explaining why they should be used,<br/>Use design criteria whilst making,<br/>Follow safety and food hygiene procedures,<br/>Measure, mark, cut and shape materials and components accurately,</p>   | <p><u>Textiles –</u><br/>Develop skills of threading needles and joining textiles using a range of stitches.</p> <p>Develop skills of sewing textiles by joining right side together and making seams. Children should investigate how to sew and shape curved edges by snipping seams, how to tack or attach wadding or stiffening and learn how to start and finish off a row of stitches.</p>   |

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|  | <p>Join, assemble and combine materials and components accurately,<br/>         Demonstrate problem solving skills when encountering a mistake or practical problem,<br/>         Use finishing techniques, including skills learnt in Art accurately.</p>  | <p><u>Structures</u> – children to construct using chosen medium e.g. straws, paper rolls or wood sections – you could even have this project as a large scale construction in groups using rolls of newspaper or garden canes.</p>                                | <p>Join, assemble and combine materials and components accurately,<br/>         Demonstrate problem solving skills when encountering a mistake or practical problem,<br/>         Use finishing techniques that involve a number of steps, including skills learnt in Art accurately.</p>   | <p>Develop skills of 2-D paper pattern making using grid or tracing paper to create a 3-D dipryl mock-up of a chosen product (if time).</p> <p>Teach how to pin a pattern on to fabric ensuring limited wastage, how to leave a seam allowance and different cutting techniques.</p> <p>Demonstrate to children adding one piece of applique design to their fabric front (e.g. felt pieces or embroidery such as satin stitch), before fixing together (possible adult use of sewing machine??).</p> <p>Demonstrate adding different types of fastenings e.g. Velcro, buttons, fasteners</p> <p><b>** Look into create logo for back of phone case using CAD and iron transfer paper**</b></p> <p><u>Electrical systems:</u><br/>         Creating an alarmed treasure box – children work in groups of three to design, decorate and create.</p> |
| <p>Evaluating</p> <p>Referring to planning and initial ideas in evaluating their product</p>         | <p>Use design criteria to evaluate product – identifying both strengths and areas for development,<br/>         Consider the views of others, including intended user, whilst evaluating product.</p>   | <p><u>Mechanical systems - cams:</u><br/>         – evaluate each others pictures. Are the cams effective in their movement?<br/> <u>Structures</u> – Would the space buggy meet the criteria to be functional on Mars? Is the buggy able to move effectively?</p> | <p>Use design criteria to evaluate product – looking at quality of end product and design and whether it is fit for its intended purpose,<br/>         Consider the views of others, including intended user, whilst evaluating product</p>   | <p><u>Textiles</u> –</p> <ul style="list-style-type: none"> <li>• Compare the final product to the original design specification.</li> <li>• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work.</li> </ul> <p><u>Electrical systems:</u><br/>         Boxes are tested under Burglar Bill conditions</p>   |
| <p>Cooking &amp; Nutrition</p> <p>All UKS2</p> <p><u>Understanding food and food preparation</u></p> | <p><u>a. Understanding food and food preparation</u><br/>         Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe,<br/>         Understand that the seasons can affect food produce,<br/>         Understand that sometimes raw ingredients need to be processed before they can be used in cooking (eg. De-feathering a chicken),</p> | <p>Looking at the ingredients needed – can you review their origins, discussing which ingredients are/could be grown in the UK and which are imported?</p>   | <p><u>a. Understanding food and food preparation</u><br/>         Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe,<br/>         Understand that the seasons can affect food produce,<br/>         Understand that sometimes raw ingredients need to be processed before they can be used in cooking (eg. De-feathering a chicken),</p> | <p>Looking at the ingredients needed – can you review their origins, discussing which ingredients are/could be grown in the UK and which are imported?</p>   |

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| <p><u>Food preparation, cooking and nutrition</u></p> | <p>Understand that recipes can be adapted to change the appearance, taste and aroma of a dish.</p> <p><u>b. Food preparation, cooking and nutrition</u><br/>Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet,<br/>Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle,<br/>Identify that people should eat at least 5 portions of fruit and vegetables a day,<br/>Prepare simple dishes hygienically and safely, where needed with a heat source,<br/>Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking.</p> | <p>Children could plot the origins of their ingredients on a world map and discuss with children the best 'season' for their ingredients</p> <p>Can children assign each of the ingredients to the EatWell plate?</p> <p>After creating the dish, in evaluation, can the children recommend any improvements or ingredient changes to improve / change the recipe?</p> | <p>Understand that recipes can be adapted to change the appearance, taste and aroma of a dish.</p> <p><u>b. Food preparation, cooking and nutrition</u><br/>Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet,<br/>Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle,<br/>Identify that people should eat at least 5 portions of fruit and vegetables a day,<br/>Prepare simple dishes hygienically and safely, where needed with a heat source,<br/>Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking.</p> | <p>Children could plot the origins of their ingredients on a world map and discuss with children the best 'season' for their ingredients</p> <p>Can children assign each of the ingredients to the EatWell plate?</p> <p>After creating the dish, in evaluation, can the children recommend any improvements or ingredient changes to improve / change the recipe?</p> |
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