



Design and Technology Progression of Skills, Knowledge and Vocabulary Map 2023-2024

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| Expressive Arts and Design | Foundation Stage | | | | | |
| Creating with Materials | <p>EYFS Statutory Educational Programme: The development of children’s artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, selfexpression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.</p> | | | | | |
| | Foundation Stage 1 Cause and Effect, Structures, Significance | | | Foundation Stage 2 Cause and Effect, Structures, Significance | | |
| | <p>Explore different materials freely, to develop their ideas about how to use them and what to make.</p> <p>Develop their own ideas and then decide which materials to use to express them.</p> <p>Join different materials and explore different textures.</p> <p>Share and talk about their construction and representations with a key person.</p> | | | <p>Plan and share ideas before constructing.</p> <p>Use various construction materials, for example, joining pieces, stacking vertically and horizontally, balancing making enclosures and creating spaces.</p> <p>Use simple tools competently and appropriately. For example, scissors, glue spreader, stapler, hole punch, modelling tools.</p> <p>Use simple techniques competently and appropriately. For example, snipping, cutting, sticking, folding, rolling and joining.</p> <p>Select tools and techniques needed to shape, assemble and join materials they are using.</p> <p>Evaluate their constructions and representations through having a learning conversation.</p> <p>Improve their construction in response to their learning conversation.</p> <p>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</p> <p>Create collaboratively, sharing ideas, resources and skills.</p> | | |
| Key Vocabulary | Designer, design, sculptor, sculpture, plan, model, change, improve, observe, snip, cut, roll, pinch, tear, stick, join, texture, rough, smooth, colour. | | | | | |
| Year Group Connected Concepts | Key Stage 1 Cause and Effect, Structures, Significance | | Lower Key Stage 2 Cause and Effect, Structures, Significance | | Upper Key Stage 2 Cause and Effect, Structures, Significance | |
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Food Technology | <p>Preparing Fruit and Vegetables</p> <p>Designing Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</p> <p>Communicate these ideas through talk and drawings.</p> | <p>Preparing Fruit and Vegetables</p> <p>Designing Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</p> <p>Communicate these ideas through talk and drawings.</p> | <p>Healthy and Varied Diet</p> <p>Designing Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.</p> <p>Use annotated sketches and appropriate</p> | <p>Healthy and Varied Diet</p> <p>Designing Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.</p> <p>Use annotated sketches and appropriate</p> | <p>Celebrating Culture and Seasonality</p> <p>Designing Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</p> <p>Explore a range of initial ideas, and make design decisions to develop a final</p> | <p>Celebrating Culture and Seasonality</p> <p>Designing Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</p> <p>Explore a range of initial ideas, and make design decisions to develop a final</p> |



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| | <p>Making 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.</p> <p>Evaluating Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. Evaluate ideas and finished products against design criteria, including intended user and purpose.</p> | <p>Making 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.</p> <p>Evaluating Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. Evaluate ideas and finished products against design criteria, including intended user and purpose.</p> | <p>information and communication technology, such as webbased recipes, to develop and communicate ideas.</p> <p>Making Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</p> <p>Evaluating Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</p> | <p>information and communication technology, such as webbased recipes, to develop and communicate ideas.</p> <p>Making Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</p> <p>Evaluating Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</p> | <p>product linked to user and purpose. Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</p> <p>Making Write a stepbystep recipe, including a list of ingredients, equipment and utensils. Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose.</p> <p>Evaluating 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. Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. Understand how key chefs have influenced eating habits to promote varied and healthy diets.</p> | <p>product linked to user and purpose. Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</p> <p>Making Write a stepbystep recipe, including a list of ingredients, equipment and utensils. Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose.</p> <p>Evaluating 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. Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. Understand how key chefs have influenced eating habits to promote varied and healthy diets.</p> |
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| <p>Technical Knowledge and Understanding</p> | <p>Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</p> <p>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.</p> <p>Know and use technical and sensory vocabulary relevant to the project.</p> | <p>Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</p> <p>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.</p> <p>Know and use technical and sensory vocabulary relevant to the project.</p> | <p>Know how to use appropriate equipment and utensils to prepare and combine food.</p> <p>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</p> <p>Know and use relevant technical and sensory vocabulary appropriately.</p> | <p>Know how to use appropriate equipment and utensils to prepare and combine food.</p> <p>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</p> <p>Know and use relevant technical and sensory vocabulary appropriately.</p> | <p>Know how to use utensils and equipment including heat sources to prepare and cook food.</p> <p>Understand about seasonality in relation to food products and the source of different food products.</p> <p>Know and use relevant technical and sensory vocabulary.</p> | <p>Know how to use utensils and equipment including heat sources to prepare and cook food.</p> <p>Understand about seasonality in relation to food products and the source of different food products.</p> <p>Know and use relevant technical and sensory vocabulary.</p> |
| <p>Key Vocabulary</p> | <p><i>Fruit and vegetable names, names of equipment and utensils, sensory vocabulary (e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard.) slicing, peeling, cutting, healthy diet.</i></p> | <p><i>Flesh, skin, seed, pip, core, squeezing, grating, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria</i></p> | <p><i>Name of products, names of, techniques and ingredients, texture, taste, hot, spicy, appearance, smell, hygenic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet, planning, design criteria, purpose, user.</i></p> | <p><i>Preference, greasy, moist, cook, fresh, savoury, processed, seasonal, harvested, annotated sketch, sensory evaluations.</i></p> | <p><i>Yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, gluten, dairy, allergy, intolerance, source, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble, design specification, innovative, research.</i></p> | <p><i>Nnutrition, gluten, dairy, allergy, intolerance, source, seasonlity, innovative.</i></p> |
| <p>Year Group Connected Concepts</p> | <p>Key Stage 1 Cause and Effect, Structures, Significance</p> | | <p>Lower Key Stage 2 Cause and Effect, Structures, Significance</p> | | <p>Upper Key Stage 2 Cause and Effect, Structures, Significance</p> | |
| <p>Mechanisms Mechanical Systems</p> | <p>Year 1</p> <p>Sliders and Levers</p> <p>Designing Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</p> <p>Develop, model and communicate their ideas through drawings and mockups with card and paper.</p> <p>Making Plan by suggesting what to do next. Select and use tools,</p> | <p>Year 2</p> <p>Wheels and Axles</p> <p>Designing Generate initial ideas and simple design criteria through talking and using own experiences.</p> <p>Develop and communicate ideas through drawings and mockups.</p> <p>Making Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.</p> | <p>Year 3</p> | <p>Year 4</p> <p>Levers and Linkages / Pneumatics</p> <p>Designing Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. Use annotated sketches and prototypes to develop, model and communicate ideas.</p> <p>Making Order the main stages of making.</p> | <p>Year 5</p> | <p>Year 6</p> <p>Pulleys or Gears / Cams</p> <p>Designing Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and webbased resources.</p> <p>Develop a simple design specification to guide their thinking.</p> <p>Develop and communicate ideas through discussion, annotated drawings, exploded and crosssectional diagrams,</p> |



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| | <p>explaining their choices, to cut, shape and join paper and card.</p> <p>Use simple finishing techniques suitable for the product they are creating.</p> <p>Evaluating Explore a range of existing books and everyday products that use simple sliders and levers.</p> <p>Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.</p> | <p>Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.</p> <p>Evaluating Explore and evaluate a range of products with wheels and axles.</p> <p>Evaluate their ideas throughout and their products against original criteria.</p> | | <p>Select from and use appropriate tools with some accuracy to cut, shape and join materials and components such as paper, card, tubing, syringes and balloons.</p> <p>Select from and use finishing techniques suitable for the product they are creating.</p> <p>Evaluating Investigate and analyse books/videos and, where available, other products with lever, linkage and pneumatic mechanisms.</p> <p>Evaluate their own products and ideas against criteria and use needs, as they design and make.</p> | | <p>and drawings from different views.</p> <p>Making Produce detailed lists of tools, equipment and materials.</p> <p>Formulate stepbystep plans and, if appropriate, allocate tasks within a team.</p> <p>Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished.</p> <p>Work within the constraints of time, resources and cost.</p> <p>Evaluating Compare the final product to the original design specification</p> <p>Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p> <p>Consider the views of others to improve their work.</p> <p>Investigate famous manufacturing and engineering companies relevant to the project.</p> |
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| <p>Technical Knowledge and Understanding</p> | <p>Explore and use sliders and levers. Understand that different mechanisms produce different types of movement. Know and use technical vocabulary relevant to the project.</p> | <p>Explore and use wheels, axles and axle holders. Distinguish between fixed and freely moving axles. Know and use technical vocabulary relevant to the project.</p> | | <p>Understand and use lever, linkage and pneumatic mechanisms. Distinguish between fixed and loose pivots. Know and use technical vocabulary relevant to the project.</p> | | <p>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. Understand how cams can be used to produce different types of movement and change the direction of movement. Know and use technical vocabulary relevant to the project.</p> |
| <p>Key Vocabulary</p> | <p><i>slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function</i></p> | <p><i>Vehicle, wheel, axle, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, , criteria (plus the names of any tools/equipment/materials used)</i></p> | | <p><i>Mechanism, lever, linkage, pivot, slot, bridge, guide, system, input, process, output, linear, rotary, oscillating, reciprocating, function, prototype, innovative, appealing</i></p> | | <p><u><i>Pulleys or Gears</i></u> <i>Pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, design decisions, functionality, authentic</i></p> <p><u><i>Cams</i></u> <i>Cam, snail cam, offcentre cam, peg cam, pear shaped cam, follower. axle, shaft, crank, handle, housing, framework, rotation, rotary motion, oscillating motion, reciprocating motion, , output movement, authentic</i></p> |
| <p>Year Group Connected Concepts</p> | <p>Key Stage 1 Cause and Effect, Structures, Significance</p> | | <p>Lower Key Stage 2 Cause and Effect, Structures, Significance</p> | | <p>Upper Key Stage 2 Cause and Effect, Structures, Significance</p> | |
| | <p>Year 1</p> | <p>Year 2</p> | <p>Year 3</p> | <p>Year 4</p> | <p>Year 5</p> | <p>Year 6</p> |



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| Textiles | <p>Templates and Joining</p> <p>Designing Design a functional, purposeful and appealing product for a chosen user and purpose based on simple design criteria.</p> <p>Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mockups and information and communication technology.</p> <p>Making 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.</p> <p>Evaluating Explore and evaluate a range of existing textile products relevant to the project being undertaken. Evaluate their ideas throughout and their final products against original design criteria.</p> | | <p>2D shape to 3D Product</p> <p>Designing Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.</p> <p>Produce annotated sketches, prototypes, final product sketches and pattern pieces.</p> <p>Making Plan the main stages of making.</p> <p>Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.</p> <p>Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.</p> <p>Evaluating Investigate a range of 3D textile products relevant to the project.</p> <p>Test their product against the original design criteria and with the intended user.</p> <p>Take into account others' views.</p> <p>Understand how a key event/individual has influenced the development of the chosen product and/or fabric.</p> | | | <p>Combining Different Fabric Shapes / ComputerAided Design</p> <p>Designing Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.</p> <p>Develop, model and communicate ideas through talking, drawing, templates, mockups and prototypes, and, where appropriate, computeraided design.</p> <p>Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</p> <p>Making Produce detailed lists of equipment and fabrics relevant to their tasks.</p> <p>Formulate stepbystep plans and, if appropriate, allocate tasks within a team.</p> <p>Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.</p> <p>Evaluating Investigate and analyse textile products linked to their final product.</p> <p>Compare the final product to the original design specification.</p> <p>Test products with intended user and critically evaluate</p> |
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| | | | | | | the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work. |
| Technical Knowledge and Understanding | Understand how simple 3D 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, buttons and ribbons. Know and use technical vocabulary relevant to the project. | | Know how to strengthen, stiffen and reinforce existing fabrics. Understand how to securely join two pieces of fabric together. Understand the need for patterns and seam allowances. Know and use technical vocabulary relevant to the project. | | | A 3D 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. |
| Key Vocabulary | <i>Names of existing products, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, quality, mockup, design brief, make, evaluate, user, purpose, function.</i> | | <i>Fabric, names of fabrics, fastening, compartment, zip, button, structure, strength, weakness, stiffening, stitch, seam, seam allowance, model, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces.</i> | | | <i>Wadding, reinforce, right side, wrong side, hem, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper, mockup, prototype, computer aided design (cad), computer aided manufacture (cam), menu, scale, modify, repeat, copy, flip.</i> |
| Year Group Connected Concepts | Key Stage 1 Cause and Effect, Structures, Significance | | Lower Key Stage 2 Cause and Effect, Structures, Significance | | Upper Key Stage 2 Cause and Effect, Structures, Significance | |
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Structures | | Freestanding Structures Designing Generate ideas based on simple design criteria and their own experiences, explaining what they could make. | Shell Structures Designing Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product. | | Frame Structures Designing Carry out research into user needs and existing products, using surveys, interviews, questionnaires and webbased resources. | |



Develop, model and communicate their ideas through talking, mockups and drawings.

Making

Plan by suggesting what to do next.

Select and use tools, skills and techniques, explaining their choices.

Select new and reclaimed materials and construction kits to build their structures. Use simple finishing techniques suitable for the structure they are creating.

Evaluating

Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.

Develop ideas through the analysis of existing shell structures and use computeraided design to model and communicate ideas.

Making

Plan the order of the main stages of making.

Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy.

Explain their choice of materials according to functional properties and aesthetic qualities.

Use computergenerated finishing techniques suitable for the product they are creating.

Evaluating

Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used.

Test and evaluate their own products against design criteria and the intended user and purpose.

Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.

Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.

Making

Formulate a clear plan, including a stepbystep list of what needs to be done and lists of resources to be used.

Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.

Use finishing and decorative techniques suitable for the product they are designing and making.

Evaluating

Investigate and evaluate a range of existing frame structures.

Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

Research key events and individuals relevant to frame structures.



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| <p>Technical Knowledge and Understanding</p> | | <p>Know how to make freestanding structures stronger, stiffer and more stable.</p> <p>Know and use technical vocabulary relevant to the project.</p> | <p>Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</p> <p>Develop and use knowledge of how to construct strong, stiff shell structures.</p> <p>Know and use technical vocabulary relevant to the project.</p> | | <p>Understand how to strengthen, stiffen and reinforce 3D frameworks.</p> <p>Know and use technical vocabulary relevant to the project.</p> | |
| <p>Key Vocabulary</p> | | <p><i>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, ideas, product.</i></p> | <p><i>Shell structure, threedimensional (3d) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, innovation, prototype.</i></p> | | <p><i>Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, design specification, research.</i></p> | |
| <p>Year Group Connected Concepts</p> | <p>Key Stage 1 Cause and Effect, Structures, Significance</p> | | <p>Lower Key Stage 2 Cause and Effect, Structures, Significance</p> | | <p>Upper Key Stage 2 Cause and Effect, Structures, Significance</p> | |
| | <p>Year 1</p> | <p>Year 2</p> | <p>Year 3</p> | <p>Year 4</p> | <p>Year 5</p> | <p>Year 6</p> |
| <p>Electrical Systems</p> | | | | <p>Simple Circuits and Switches / Simple Programming and Control</p> <p>Designing Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.</p> <p>Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches,</p> | <p>More Complex Switches/ Monitoring and Control</p> <p>Designing 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</p> <p>Generate and develop innovative ideas and share and clarify these through discussion.</p> <p>Communicate ideas through annotated</p> | |



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| | | | | <p>crosssectional and exploded diagrams.</p> <p>Making Order the main stages of making.</p> <p>Select from and use tools and equipment to cut, shape, join and finish with some accuracy.</p> <p>Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.</p> <p>Evaluating Investigate and analyse a range of existing batterypowered products. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.</p> | <p>sketches, pictorial representations of electrical circuits or circuit diagrams.</p> <p>Making Formulate a stepbystep plan to guide making, listing tools, equipment, materials and components.</p> <p>Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.</p> <p>Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.</p> <p>Evaluating Continually evaluate and modify the working features of the product to match the initial design specification.</p> <p>Test the system to demonstrate its effectiveness for the intended user and purpose.</p> <p>Investigate famous inventors who developed groundbreaking electrical systems and components.</p> | |
| Technical Knowledge and Understanding | | | | <p>Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.</p> <p>Apply their understanding of computing to program and control their products.</p> <p>Know and use technical vocabulary relevant to the project.</p> | <p>Understand and use electrical systems in their products.</p> <p>Apply their understanding of computing to program, monitor and control their products.</p> <p>Know and use technical vocabulary relevant to the project.</p> | |



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| Key Vocabulary | | | | <i>Series circuit, fault, connection, toggle, switch, pushtomake switch, pushtobreak switch, battery, battery holder, light emitting diode (led), bulb, bulb holder, usb cable, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, appealing</i> | <i>Parallel, circuit, names of switches and components, system, monitor, control, program, flowchart, reed switch, light dependent resistor (ldr), tilt switch.</i> | |
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