# Northgate Primary School: Design and Technology Skills Progression Planning

**Intent:** At Northgate Primary School, Design and Technology prepares our children to deal with tomorrow's rapidly changing world. Through an inspiring, rigorous and practical subject we encourage our children to learn and think creatively to solve problems. Design and Technology is cross curricular and will enable children to use their subject knowledge within mathematics, science, history, computing and art.

- **Sense of belonging** To develop children's sense of belonging we encourage children to use their creativeness and imagination, to design and make products that solve real and relevant problems with a variety of contexts. Design and Technology enables children to identify needs and opportunities and respond to these by developing a range of ideas by making products and systems.
- **Confidence in communication** Children have opportunities to develop research, investigate and establish their own ideas independently and collaboratively as part of a team. Team work allows children to intervene creatively to solve problems and share their design concept.
- **Resilient attitude** Through the study of Design and Technology, children combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industry. This allows children to reflect upon and evaluate past and present design, its uses and its effectiveness. Children become innovative, enterprising, resilient, risk-takers which equips them with skills for the future.

| EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Autumn Overview | | | | | | |
| See D&T Long term plan for how D&T will be taught throughout EYFS. | **Mechanisms Wheels and Axles**<br>Design a vehicle for Mrs Armitage because her bike is broken - linked to History topic / English<br><br>Key Vocab:<br>vehicle, wheel, axle, axle holder, chassis, body, cab<br><br>assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism<br><br>names of tools, equipment and materials | **Mechanisms Sliders and Levers**<br>Display poster about Nelson (including moving parts) to share information with Year 1 - linked to History Nelson topic.<br><br>Moving xmas cards (2022)<br><br>Key Vocab:<br>slider, lever, pivot, slot, bridge/guide<br><br>card, masking tape, paper fastener, join | **Food**<br>**Healthy and varied diet**<br><br>Create a healthy food wrap for lunch for myself - linked to healthy eating.<br><br>Key vocab:<br>name of products, names of equipment, utensils, techniques and ingredients<br>texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury | **Mechanical Systems Pneumatics**<br><br>Create a Roman Nerf Gun for a roman to use in a fight - Linked to Roman topic.<br><br>Key Vocab:<br>components, fixing, attaching, tubing, syringe,<br>plunger, split pin, paper fastener<br>pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight | **Food**<br>**Celebrating culture and seasonality**<br><br>Key Vocab:<br>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<br>utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, | **Food**<br>**Celebrating culture and seasonality**<br>??<br><br>Key Vocab<br>ingredients, yeast, dough,<br>bran, flour, wholemeal, unleavened, baking soda,<br>spice, herbs<br>fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality<br>utensils, combine, fold, knead, stir, pour, mix, |

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| | used<br><br>design, make, evaluate, purpose, user, criteria, functional | pull, push, up, down, straight, curve, forwards, backwards<br><br>design, make, evaluate, user, purpose, ideas, design criteria, product, function | hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet planning, design criteria, purpose, user, annotated sketch, sensory evaluations | linear, rotary, oscillating, reciprocating user, purpose, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate | crumble, design specification, innovative, research, evaluate, design brief. | rubbing in, whisk, beat, roll out, shape, sprinkle, crumble design specification, innovative, research, evaluate, design brief |
| Spring Overview | | | | | | |
| See D&T Long term plan for how D&T will be taught throughout EYFS. | **Structures Freestanding Structures**<br>Dolls house furniture for a Victorian Child as their toys have been lost (linked to History topic and English - Major Glad and Major Dizzy)<br><br>Key Vocab:<br>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 | **Food Preparing fruit and vegetables**<br>Fruit salad for a special occasion to share with family (measure quantity and size of fruit)<br>Key Vocab<br>fruit and vegetable names, names of equipment and utensils<br><br>sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard<br><br>flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria | **Textiles 2D shape and 3D product**<br>Make a pillow for Tomas from 'The Boy Who Grew Dragons' - linked to class read.<br><br>Key vocab:<br>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance<br><br>user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, | **Electrical systems Simple programming and control**<br><br>Create a torch for an explorer - linked to Geography topic The World.<br><br>Key Vocab:<br>series circuit, fault, connection, toggle switch, 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, input device, output device, process user, purpose, function, | **Textiles Sewing skills**<br><br>Making a bag - linked to Geography topic and Computing.<br><br>Key Vocab:<br>Key vocab:<br>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance<br><br>user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces | **Computer-Aided Design in Textiles**<br><br>computer aided design (CAD), computer aided manufacture (CAM) font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip design brief, design criteria, design decisions, innovative, prototype 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, innovation, authentic, user, purpose, evaluate, mock-up, prototype |

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| | | | function, pattern pieces | prototype, design criteria, innovative, appealing, design brief | | |
| Summer Term | | | | | | |
| See D&T Long term plan for how D&T will be taught throughout EYFS. | **Food**<br>**Preparing fruit and vegetables**<br>Fruit kebab for a friend using their favourite fruit (eat as snack on trip to the farm), - Linked to Food and Farming Topic<br><br>Key Vocab<br>fruit and vegetable names, names of equipment and utensils<br><br>sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard<br><br>flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria | **Textiles**<br>**Templates and joining**<br>Create a purse for a friend that can hold 10 coins and close using velcro fastening.<br><br>Key Vocab<br>names of existing products, joining and finishing techniques, tools, fabrics and components<br><br>template, pattern pieces, mark out, join, decorate, finish<br><br>features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function | **Structures**<br>**Shell structures using computer-aided design**<br><br>Make a container for Aztecs to carry cocoa beans - Linked to history topic Aztecs.<br><br>Key Vocab:<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, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype | **Food**<br>**Healthy and varied diet**<br>Create bread to investigate bubbles - linked to science topic.<br><br>Key Vocab:<br>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 | **STEM**<br>**Engineering/**<br>**Mechanical components**<br>Strong shapes- Investigate which shapes are strong.<br>Towers-<br>Design and build a bridge that can hold weight<br>How much mass can the bridge hold?<br><br>Key Vocab:<br>name of products, | **Electrical Systems**<br>**Monitoring and control**<br><br>Automatic light - linked to science<br><br>Key vocab<br>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 function, innovative, design specification, design brief, user, purpose |

| Designing | | | | | | |
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| Understanding Contexts, User and Purpose | | | | | | |
| EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| **Understanding the World**<br>- Explore how things work<br>- Explore and talk about different forces that they can feel<br>- Talk about the differences between materials and the changes they notice. | Children will begin to:<br>• work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment<br>• state what products they are designing and making<br>• say whether their products are for themselves or other users<br>• describe what their products are for<br>• say how their products will work<br>• say how they will make their products suitable for their intended users | Children will:<br>• work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment<br>• state what products they are designing and making<br>• say whether their products are for themselves or other users<br>• describe what their products are for<br>• say how their products will work<br>• say how they will make their products suitable for their intended users | Children will begin to:<br>• work within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment<br>• describe the purpose of their products<br>• indicate the design features of their products that will appeal to intended users<br>• explain how particular parts of their products work<br>• gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use these to inform their ideas | Children will:<br>• work within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment<br>• describe the purpose of their products<br>• indicate the design features of their products that will appeal to intended users<br>• explain how particular parts of their products work<br>• gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use these to inform their ideas | With growing confidence children will:<br>• work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment<br>• describe the purpose of their products<br>• indicate the design features of their products that will appeal to intended users<br>• explain how particular parts of their products work<br>• gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use these to inform their ideas | With growing independence children will:<br>• work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment<br>• describe the purpose of their products<br>• indicate the design features of their products that will appeal to intended users<br>• explain how particular parts of their products work<br>• gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use |

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| | • use simple design criteria to help develop their ideas | • use simple design criteria to help develop their ideas | | | Children will begin to:<br>• carry out research, using surveys, interviews, questionnaires and web-based resources<br>• identify the needs, wants, preferences and values of particular individuals and group | these to inform their ideas<br><br>• carry out research, using surveys, interviews, questionnaires and web-based resources<br>• identify the needs, wants, preferences and values of particular individuals and group<br><br>• develop a simple design specification to guide their thinking |
| Generating, developing, modeling and communicating ideas | | | | | | |
| **Understanding the World**<br>- Explore how things work<br>- Explore and talk about different forces that they can feel<br>- Talk about the differences between materials and the changes they notice. | Children will begin to:<br>• generate ideas by drawing on their own experiences<br>• use knowledge of existing products to help come up with ideas<br>• develop and communicate ideas by talking and drawing<br>• model ideas by exploring materials, components and construction kits and by making templates and mockups<br>• use information and communication technology, where appropriate, to develop and communicate their ideas | Children will:<br>• generate ideas by drawing on their own experiences<br>• use knowledge of existing products to help come up with ideas<br>• develop and communicate ideas by talking and drawing<br>• model ideas by exploring materials, components and construction kits and by making templates and mockups<br>• use information and communication technology, where appropriate, to develop and communicate their ideas | Children will begin to:<br>• share and clarify ideas through discussion<br>• model their ideas using prototypes and pattern pieces<br>• use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas<br>• use computer-aided design to develop and communicate their ideas<br><br>Children will begin to:<br>• generate realistic ideas, focusing on the needs of the user | Children will:<br>• share and clarify ideas through discussion<br>• model their ideas using prototypes and pattern pieces<br>• use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas<br>• use computer-aided design to develop and communicate their ideas<br><br>Children will:<br>• generate realistic ideas, focusing on the needs of the user | With growing confidence children will:<br>• share and clarify ideas through discussion<br>• model their ideas using prototypes and pattern pieces<br>• use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas<br>• use computer-aided design to develop and communicate their ideas<br><br>Children will begin to:<br>• generate innovative ideas, drawing on research | With growing independence children will:<br>• share and clarify ideas through discussion<br>• model their ideas using prototypes and pattern pieces<br>• use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas<br>• use computer-aided design to develop and communicate their ideas<br>Children will:<br>• generate innovative ideas, drawing on research<br>• make design decisions, taking |

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| | | | | • make design decisions that take account of the availability of resources | | account of constraints such as time, resources and cost |

| Making | | | | | | |
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| Planning | | | | | | |
| EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| **Personal, Social and Emotional Development**<br>- Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them.<br>- Show resilience and perseverance in the face of challenge.<br>- Manage their own needs | Children will begin to:<br>• select from a range of tools and equipment<br>• select from a range of materials and components according to their characteristics | Children will:<br>• select from a range of tools and equipment, explaining their choices<br>• select from a range of materials and components according to their characteristics<br>• plan by suggesting what to do next | With support children will:<br>• select tools and equipment suitable for the task<br>• select materials and components suitable for the task<br>• explain their choice of materials and components according to functional properties and aesthetic qualities<br>• order the main stages of making | Children will begin to:<br>• select tools and equipment suitable for the task<br>• select materials and components suitable for the task<br>• explain their choice of materials and components according to functional properties and aesthetic qualities<br>• order the main stages of making | With growing independence children will:<br>• select tools and equipment suitable for the task<br>• select materials and components suitable for the task<br>• explain their choice of materials and components according to functional properties and aesthetic qualities<br>• produce appropriate lists of tools, equipment and materials that they need<br>• formulate step-by-step plans as a guide to making | With growing confidence children will:<br>• select tools and equipment suitable for the task<br>• select materials and components suitable for the task<br>• explain their choice of materials and components according to functional properties and aesthetic qualities<br>• produce appropriate lists of tools, equipment and materials that they need<br>• formulate step-by-step plans as a guide to making<br>• produce appropriate lists of tools, equipment and materials that they need<br>• formulate step-by-step plans as a guide to making |

| Practical Skills and techniques | | | | | | |
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| **Physical Development**<br>- Develop their small motor skills so that they can use a range of tools competently, safely and confidently. | With support children will::<br>• follow procedures for safety and hygiene<br>• use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components<br>• measure, mark out, cut and shape materials and components<br>• assemble, join and combine materials and components<br>• use finishing techniques, including those from art and design | Children will begin to:<br>• follow procedures for safety and hygiene<br>• use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components<br>• measure, mark out, cut and shape materials and components<br>• assemble, join and combine materials and components<br>• use finishing techniques, including those from art and design | With support children will:<br>• follow procedures for safety and hygiene<br>• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components<br>• measure, mark out, cut and shape materials and components with some accuracy<br>• assemble, join and combine materials and components with some accuracy<br>• apply a range of finishing techniques, including those from art and design, with some accuracy | Children will begin to:<br>• follow procedures for safety and hygiene<br>• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components<br>• measure, mark out, cut and shape materials and components with some accuracy<br>• assemble, join and combine materials and components with some accuracy<br>• apply a range of finishing techniques, including those from art | With growing independence children will:<br>• follow procedures for safety and hygiene<br>• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components<br>• accurately measure, mark out, cut and shape materials and components<br>• accurately assemble, join and combine materials and components<br>• accurately apply a range of finishing techniques, including those from art and design<br>• use techniques that involve a number of steps<br>• demonstrate resourcefulness when tackling practical problems | With growing confidence children will:<br>• follow procedures for safety and hygiene<br>• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components<br>• accurately measure, mark out, cut and shape materials and components<br>• accurately assemble, join and combine materials and components<br>• accurately measure, mark out, cut and shape materials and components<br>• accurately assemble, join and combine materials and components<br>• accurately apply a range of finishing techniques, including those from art and design<br>• use techniques that involve a number of steps<br>• demonstrate resourcefulness when |

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| | | | | | | tackling practical problems<br>• use techniques that involve a number of steps |

| Evaluating | | | | | | |
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| Own ideas and products | | | | | | |
| EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| **Expressive Arts and Design**<br>- Return to and build on their previous learning, refining ideas and developing their ability to represent them.<br>- Create collaboratively, sharing ideas, resources and skills. | With support children will begin to:<br>• talk about their design ideas and what they are making<br>• make simple judgements about their products and ideas against design criteria | Children will begin to:<br>• talk about their design ideas and what they are making<br>• make simple judgements about their products and ideas against design criteria<br><br>• suggest how their products could be improved | With support children will begin to:<br>• identify the strengths and areas for development in their ideas and products<br>• consider the views of others, including intended users, to improve their work<br><br>With support they should also begin to:<br>• refer to their design criteria as they design and make • use their design criteria to evaluate their completed products | Children will begin to:<br>• identify the strengths and areas for development in their ideas and products<br>• consider the views of others, including intended users, to improve their work<br><br>They should also begin to:<br>• refer to their design criteria as they design and make • use their design criteria to evaluate their completed products | With growing independence children will:<br>• identify the strengths and areas for development in their ideas and products<br>• consider the views of others, including intended users, to improve their work<br><br>With growing independence they should also:<br>• critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make<br>• evaluate their ideas and products against their original design specification | With growing confidene children will:<br>• identify the strengths and areas for development in their ideas and products<br>• consider the views of others, including intended users, to improve their work<br><br>With growing confidence they should also:<br>• critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make<br>• evaluate their ideas and products against their original design specification<br>• evaluate their ideas and products against their original design specification |

| Existing Products | | | | | | |
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| **Understanding the World**<br>- Explore how things work<br>- Explore and talk about different forces that they can feel<br>- Talk about the differences between materials and the changes they notice. | With support children will begin to explore:<br>• what products are<br>• who products are for<br>• what products are for<br>• how products work<br>• how products are used<br>• where products might be used<br>• what materials products are made from<br>• what they like and dislike about products | Children will begin to explore:<br>• what products are<br>• who products are for<br>• what products are for<br>• how products work<br>• how products are used<br>• where products might be used<br>• what materials products are made from<br>• what they like and dislike about products | With support children will begin to explore::<br>• how well products have been designed<br>• how well products have been made<br>• why materials have been chosen<br>• what methods of construction have been used<br>• how well products work<br>• how well products achieve their purposes<br>• how well products meet user needs and wants<br><br>Children should also begin to investigate and analyse:<br>• who designed and made the products<br>• where products were designed and made<br>• when products were designed and made<br>• whether products can be recycled or reused | Children will begin to explore:<br>• how well products have been designed<br>• how well products have been made<br>• why materials have been chosen<br>• what methods of construction have been used<br>• how well products work<br>• how well products achieve their purposes<br>• how well products meet user needs and wants<br><br>Children should also investigate and analyse:<br>• who designed and made the products<br>• where products were designed and made<br>• when products were designed and made<br>• whether products can be recycled or reused | With increasing independence children will explore:<br>• how well products have been designed<br>• how well products have been made<br>• why materials have been chosen<br>• what methods of construction have been used<br>• how well products work<br>• how well products achieve their purposes<br>• how well products meet user needs and wants<br><br>With increasing confidence children should also investigate and analyse:<br>• how much products cost to make<br>• how innovative products are<br>• how sustainable the materials in products are<br>• what impact products have beyond their intended purpose | With increasing confidence children will explore:<br>• how well products have been designed<br>• how well products have been made<br>• why materials have been chosen<br>• what methods of construction have been used<br>• how well products work<br>• how well products achieve their purposes<br>• how well products meet user needs and wants<br><br>With increasing independence children should also investigate and analyse:<br>• how much products cost to make<br>• how innovative products are<br>• how sustainable the materials in products are<br>• what impact products have beyond their intended purpose |
| Key events and Individuals | | | | | | |
| | | | With support children should research:<br>• inventors, designers, engineers, chefs and manufacturers who | Children should begin to research:<br>• inventors, designers, engineers, chefs and manufacturers who | With increasing independence children should research:<br>• inventors, designers, engineers, chefs and | With increasing confidence children should research:<br>• inventors, designers, engineers, chefs and |

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| | | | have developed ground-breaking products | have developed ground-breaking products | manufacturers who have developed ground-breaking products | manufacturers who have developed ground-breaking products |

| Technical Knowledge | | | | | | |
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| Making products work | | | | | | |
| EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| **Expressive Arts and Design**<br>- Return to and build on their previous learning, refining ideas and developing their ability to represent them.<br>- Create collaboratively, sharing ideas, resources and skills.<br>**Understanding the World**<br>- Explore how things work<br>- Explore and talk about different forces that they can feel<br>- Talk about the differences between materials and the changes | With support children will begin to explore:<br>• the simple working characteristics of materials and components<br>• the movement of simple mechanisms such as levers, sliders, wheels and axles<br>• how freestanding structures can be made stronger, stiffer and more stable | Children will begin to explore :<br>• the simple working characteristics of materials and components<br>• the movement of simple mechanisms such as levers, sliders, wheels and axles<br>• how freestanding structures can be made stronger, stiffer and more stable<br><br>• that a 3-D textiles product can be assembled from two identical fabric shapes<br>• that food ingredients should be combined according to their sensory characteristics<br>• the correct technical vocabulary for the projects they are undertaking | With support children will to explore:<br>• how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics<br>• that mechanical and electrical systems have an input, process and output<br><br>With support children should also explore:<br>•how mechanical systems such as levers and linkages or pneumatic systems create movement • how simple electrical circuits | Children will begin to explore:<br>• how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics<br>• that mechanical and electrical systems have an input, process and output<br><br>Children should also explore:<br>•how mechanical systems such as levers and linkages or pneumatic systems create movement • how simple electrical circuits | With increasing independence children will explore:<br>• how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics<br>• that mechanical and electrical systems have an input, process and output<br><br>Children should also explore: • how mechanical systems such as cams or pulleys or gears create movement • how more | With increasing confidence children will explore:<br>• how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics<br>• that mechanical and electrical systems have an input, process and output<br><br>Children should also explore: • how mechanical systems such as cams or pulleys or gears create movement • how more complex electrical |

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| they notice. | | | and components can be used to create functional products • how to program a computer to control their products • how to make strong, stiff shell structures | and components can be used to create functional products • how to program a computer to control their products • how to make strong, stiff shell structures | complex electrical circuits and components can be used to create functional products • how to program a computer to monitor changes in the environment and control their products • how to reinforce and strengthen a 3D framework | circuits and components can be used to create functional products • how to program a computer to monitor changes in the environment and control their products • how to reinforce and strengthen a 3D framework |

| Cooking and Nutrition | | | | | | |
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| Where food comes from | | | | | | |
| EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| **Personal, Social and Emotional Development**<br>- Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them.<br>- Show resilience and perseverance in the face of | With support children will begin to understand:<br>• that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught | Children will begin to understand:<br>• that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught | With support children will begin to understand:<br>• that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world | Children will begin to understand:<br>• that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world | With increased independence children will understand:<br>• that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world<br><br>Children should also know that:<br>• that seasons may affect the food available<br>• how food is processed into ingredients that can be eaten or used in cooking | With increased confidence children will understand:<br>• that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world<br><br>Children should also know that:<br>• that seasons may affect the food available<br>• how food is processed into ingredients that can be eaten or used in cooking |

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| challenge.<br><br>- Manage their own needs | | | | | | |
| Food preparation, cooking and nutrition | | | | | | |
| **Understanding the World**<br>- Explore how things work<br>- Explore and talk about different forces that they can feel<br>- Talk about the differences between materials and the changes they notice. | With support children will begin to understand:<br>• how to name and sort foods into the five groups in The eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating | Children will begin to understand:<br>• how to name and sort foods into the five groups in The eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating | With support children will begin to understand:<br>• how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking<br><br>Children should also understand:<br>• that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body | Children will begin to understand:<br>• how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking<br><br>Children should also understand:<br>• that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body | With increased independence children will understand:<br>• how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking<br><br>Children should also understand:<br>• that different food and drink contain different substances – nutrients, water and fibre – that are needed for health | With increased confidence children will understand:<br>• how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking<br><br>Children should also understand:<br>• that different food and drink contain different substances – nutrients, water and fibre – that are needed for health<br><br>• that recipes can be adapted to change the appearance, taste, texture and aroma |