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| EYFS | | |
| Design | Make | Evaluate |
| * Discuss their ideas. * Use the language of designing (First, Next, Join, Design, Build, Make) * Explore different materials freely, in order to develop their ideas about how to use them and what to make. * Develop their own ideas and then decide which materials to use to express them. * Create collaboratively, sharing ideas, resources and skills. | * Choose their own resources to carry out their plan. * Join different materials and explore different textures. * Use different techniques for joining materials such as how to use adhesive tape and different sorts of glue. * Use natural materials to make a product. * Select tools & techniques to shape, assemble and join | * Return to and build on their previous learning, refining ideas and developing their ability to represent them. * Say what they like/dislike about their creations. * Suggest ways to improve their creations. * Describe textures, taste, and appearance. |
| **EYFS Link:**  Creating with Materials - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.  Fine Motor Skills - Use a range of small tools, including scissors, paintbrushes and cutlery. | | **EYFS Link:**  Creating With Materials – Share their creations, explaining the process they have used. |

**EYFS Activities:**

Large scale construction.

Cutting, sticking, joining activities.

Develop fine motor skills through funky fingers activities.

Junk Modelling Area – Encourage children to design their product before making it.

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| **Year 1:** | | |
| **Design** | **Make** | **Evaluate** |
| Generate ideas based on a simple design criteria and their own experiences, explaining what they could make. (Mechanisms and Structures)  Develop and model their ideas through talking, mock-ups and drawing. (Mechanisms and Structures)  Design appealing products for a particular user based on a simple design criteria. (Food Technology)  Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. (Food Technology)  Communicate ideas through talk and drawings. (Food Technology) | Plan by suggesting what to do next. (Mechanisms and Structures)  Select and use tools, skills and techniques explaining their choices. (Structures)  Select new and reclaimed materials and construction kits to build their structures. (Structures)  Use simple finishing techniques suitable for the structure they are creating. (Structures)  Select and use tools, explaining their choices to cut, shape and join paper and card. (Mechanisms)  Use simple finishing techniques suitable for the product they are creating. (Mechansims)  Use simple utensils and equipment eg. To peel, cut, slice, squeeze, grate and chop safely. (Food Technology)  Select from a range of fruit and vegetables according to their characteristics eg. Colour, texture and taste to create a chosen product. (Food Technology) | Explore a range of existing books and everyday products that use simple sliders and levers. (Mechanisms)  Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets the design criteria. (Mechanisms and Structures)  Explore a range of existing freestanding structures in the school and local environment eg. Everyday products and buildings. (Structures)  Taste and evaluate a range of fruit and vegetables to determine the intended user’s preferences. (Food Technology)  Evaluate ideas and finished products against design criteria, including intended user and purpose. (Food Technology) |
| KS1 NC Links:   * Children design purposeful, functional, appealing products for themselves and other users based on design criteria. * Children generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. | KS1 NC Links:   * Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. * Children select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. | KS1 NC Links:   * Explore and Evaluate a range of existing products. * Evaluate their ideas and products against a design criteria. |

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| **Year 2:** | | |
| **Design** | **Make** | **Evaluate** |
| Generate initial ideas and simple design criteria through talking and using own experiences. (Mechanisms)  Develop and communicate ideas through drawings and mock-ups. (Mechanisms)  Design a functional and appealing product for a chosen user and purpose based on a simple design criteria. (Textiles)  Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. (Textiles)  Design appealing products for a particular user based on a simple design criteria. (Food Technology)  Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. (Food Technology)  Communicate ideas through talk and drawings. (Food Technology) | Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. (Mechanisms)  Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. (Mechanisms)  Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. (Textiles)  Select from and use textiles according to their characteristics. (Textiles)  Use simple utensils and equipment eg. To peel, cut, slice, squeeze, grate and chop safely. (Food Technology)  Select from a range of fruit and vegetables according to their characteristics eg. Colour, texture and taste to create a chosen product. (Food Technology) | Explore and evaluate a range of products with wheels and axles. (Mechanisms)  Evaluate their ideas throughout and their products against original criteria. (Mechanisms)  Explore and evaluate a range of existing textile products relevant to the project being undertaken. (Textiles)  Evaluate their ideas throughout and their final products against original design criteria. (Textiles)  Taste and evaluate a range of fruit and vegetables to determine the intended user’s preferences. (Food Technology)  Evaluate ideas and finished products against design criteria, including intended user and purpose. (Food Technology) |
| KS1 NC Links:   * Children design purposeful, functional, appealing products for themselves and other users based on design criteria. * Children generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. | KS1 NC Links:   * Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. * Children select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. | KS1 NC Links:   * Explore and Evaluate a range of existing products. * Evaluate their ideas and products against a design criteria. |
| **Year 3:** | | |
| **Design** | **Make** | **Evaluate** |
| 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. (Structures)  Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas. (Structures)  Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. (Textiles)  Produce annotated sketches, prototypes, final product sketches and pattern pieces. (Textiles)  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. (Food Technology)    Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. (Food Technology) | Plan the order of the main stages of making.(Structures)  Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. (Structures)  Explain their choice of materials according to functional properties and aesthetic qualities. (Structures)  Use computer-generated finishing techniques suitable for the product they are creating. (Structures)  Plan the main stages of making. (Textiles)  Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. (Textiles)  Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. (Textiles)  Plan the main stages of a recipe, listing ingredients, utensils and equipment. (Food Technology)  Select and use appropriate utensils and equipment to prepare and combine ingredients. (Food Technology)    Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. (Food Technology) | Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. (Structures)  Test and evaluate their own products against design criteria and the intended user and purpose. (Structures)  Investigate a range of 3-D textile products relevant to the project. (Textiles)  Test their product against the original design criteria and with the intended user. (Textiles)  Take into account others’ views. (Textiles)  Understand how a key event/individual has influenced the development of the chosen product and/or fabric. (Textiles)  Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. (Food Technology)  Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. (Food Technology) |
| KS2 NC Links:   * Children use research and develop a design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. * Children generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design | KS2 NC Links:   * Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. * Children select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. | KS2 NC Links:   * Investigate and analyse a range of existing products. * Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. * Understand how key events and individuals in design and technology have helped shape the world. |
| **Year 4:** | | |
| **Design** | **Make** | **Evaluate** |
| Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. (Mechanisms)    Use annotated sketches and prototypes to develop, model and communicate ideas. (Mechanisms)  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. (Electrical Systems)  Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. (Electrical Systems)  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. (Food Technology)    Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. (Food Technology) | Order the main stages of making. (Mechanisms)  Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. (Mechanisms)  Select from and use finishing techniques suitable for the product they are creating. (Mechanisms)  Order the main stages of making. (Electrical Systems)  Select from and use tools and equipment to cut, shape, join and finish with some accuracy. (Electrical Systems)  Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.(Electrical Systems)  Plan the main stages of a recipe, listing ingredients, utensils and equipment. (Food Technology)  Select and use appropriate utensils and equipment to prepare and combine ingredients. (Food Technology)    Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. (Food Technology) | Investigate and analyse books and, where available, other products with lever and linkage mechanisms. (Mechanisms)  Evaluate their own products and ideas against criteria and user needs, as they design and make. (Mechanisms)  Investigate and analyse a range of existing battery-powered products. (Electrical Systems)  Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. (Electrical Systems)  Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. (Food Technology)  Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. (Food Technology) |
| KS2 NC Links:   * Children use research and develop a design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. * Children generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design | KS2 NC Links:   * Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. * Children select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. | KS2 NC Links:   * Investigate and analyse a range of existing products. * Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. * Understand how key events and individuals in design and technology have helped shape the world. |
| **Year 5:** | | |
| **Design** | **Make** | **Evaluate** |
| Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. (Structures)  Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. (Structures)  Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. (Structures)  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. (Electrical Systems)  Generate and develop innovative ideas and share and clarify these through discussion. (Electrical Systems)  Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. (Electrical Systems)  Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. (Food Technology)    Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. (Food Technology)    Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. (Food Technology) | Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. (Structures)  Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. (Structures)    Use finishing and decorative techniques suitable for the product they are designing and making. (Structures)  Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. (Electrical Systems)  Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. (Electrical Systems)  Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. (Electrical Systems)  Write a step-by-step recipe, including a list of ingredients, equipment and utensils (Food Technology)  Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. (Food Technology)  Make, decorate and present the food product appropriately for the intended user and purpose. (Food Technology) | Investigate and evaluate a range of existing frame structures. (Structures)  Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. (Structures)  Research key events and individuals relevant to frame structures. (Structures)  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. (Electrical Systems)  Investigate famous inventors who developed ground-breaking electrical systems and components. (Electrical Systems)  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. (Food Technology)  Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. (Food Technology)  Understand how key chefs have influenced eating habits to promote varied and healthy diets. (Food Technology) |
| KS2 NC Links:   * Children use research and develop a design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. * Children generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design | KS2 NC Links:   * Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. * Children select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. | KS2 NC Links:   * Investigate and analyse a range of existing products. * Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. * Understand how key events and individuals in design and technology have helped shape the world. |

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| **Year 6:** | | |
| **Design** | **Make** | **Evaluate** |
| Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. (Textiles)  Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design. (Textiles)  Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. (Textiles)  Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. (Mechanisms)  Develop a simple design specification to guide their thinking. (Mechanisms)  Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. (Mechanisms)  Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. (Food Technology)    Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. (Food Technology)    Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. (Food Technology) | Produce detailed lists of equipment and fabrics relevant to their tasks. (Textiles)  Formulate step-by-step plans and, if appropriate, allocate tasks within a team. (Textiles)  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. (Textiles)  Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. (Mechanisms)  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. (Mechanisms)  Write a step-by-step recipe, including a list of ingredients, equipment and utensils (Food Technology)  Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. (Food Technology)  Make, decorate and present the food product appropriately for the intended user and purpose. (Food Technology) | Investigate and analyse textile products linked to their final product. (Textiles)  Compare the final product to the original design specification. (Textiles)  Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. (Textiles)  Consider the views of others to improve their work. (Textiles)  Compare the final product to the original design specification.  Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. (Mechanisms)  Consider the views of others to improve their work. (Mechanisms)  Investigate famous manufacturing and engineering companies relevant to the project. (Mechanisms)  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. (Food Technology)  Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. (Food Technology)  Understand how key chefs have influenced eating habits to promote varied and healthy diets. (Food Technology) |
| KS2 NC Links:   * Children use research and develop a design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. * Children generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design | KS2 NC Links:   * Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. * Children select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. | KS2 NC Links:   * Investigate and analyse a range of existing products. * Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. * Understand how key events and individuals in design and technology have helped shape the world. |

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| **TECHNICAL KNOWLEDGE** | | | | | | | |
|  | EYFS: | Year 1: | Year 2: | Year 3: | Year 4: | Year 5: | Year 6: |
| **COOKING AND NURTITION** | Begin to understand some food preparation tools, techniques and processes.    Practise stirring, mixing, pouring, blending.  Discuss how to make an activity safe and hygienic.  Discuss use of senses.  Understand need for variety in food.  Begin to understand that eating well contributes to good health. | Describe textures  Ensure hands are washed and surfaces are clean.  Think of interesting ways to decorate food  Say if a food comes from a plant or an animal.  Describe differences between some food groups.  Discuss how fruit and vegetables are healthy.  Cut, peel and grate safely, with support. | Explain hygiene and how to keep a hygienic kitchen.  Describe the importance of a varied diet.  Say where food comes from (animal, underground etc.)  Describe how food is farmed, home-grown, caught.  Describe “five a day”.  Cut, peel and grate with increasing confidence. | **C**arefully select ingredients.  Use equipment safely.  Make product look attractive.  Begin to understand food comes from UK and wider world.  Describe how healthy diet= variety/balance of food/drinks.  Explain how food and drink are needed for active/healthy bodies.  Prepare and cook some dishes safely and hygienically.  Grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking | **E**xplain how to be safe/hygienic.  Think about presenting product in interesting/ attractive ways.  Understand ingredients can be fresh, pre-cooked or processed.  Begin to understand about food being grown, reared or caught in the UK or wider world.  Describe how a healthy diet=variety / balance of food and drinks.  Explain importance of food and drink for active, healthy bodies.  Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking | **Ex**plain how to be safe/hygienic and follow own guidelines.  Begin to understand seasonality of foods.  Understand food can be grown, reared or caught in the UK and the wider world.  Describe how recipes can be adapted to change appearance, taste, texture.  Explain how there are different substances in food / drink needed for health.  Prepare and cook some dishes safely and hygienically including, where appropriate, use of heat source.  Use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | **U**nderstand a recipe can be adapted by adding / substituting ingredients.  Explain seasonality of foods.    Name some types of food that are grown, reared or caught in the UK or wider world.    Describe food and drink, and how they can affect health.  Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source.  Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. |
| TECHNICAL VOCABULARY: | **Ingredients, Healthy, Cook, Taste, Fruit, Vegetables** | **Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging** | **Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging** | **Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested** | **Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested** | **Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, seasonality, pour, mix, kneed, whisk, beat, combine, fold** | **Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, seasonality, pour, mix, kneed, whisk, beat, combine, fold** |
| CURRICULUM LINKS: | EYFS Link:  **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.  **Personal, Social and Emotional Development –** Manage their own needs (hygiene) eg. handwashing.  Know and talk about the different factors that support their overall health and wellbeing:  Healty Eating | KS1 NC Links:   * Use the basic principles of a healthy and varied diet to prepare dishes. * Understand where food comes from. | | KS2 NC Links:   * Understand and apply the principles of a healthy and varied diet. * Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. * Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. | | | |

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| **TECHNICAL KNOWLEDGE** | | | | | | | |
|  | EYFS: | Year 1: | Year 2: | Year 3: | Year 4: | Year 5: | Year 6: |
| **STRUCTURES** |  | Know how to make freestanding structures stronger, stiffer and more stable.  Know and use technical vocabulary relevant to the project.  Understanding  that axles are used  in structures and  mechanisms to  make parts turn in  a circle. |  | Understanding the  difference between  frame and shell  structure.  Develop and use knowledge of how to construct strong, stiff shell structures.  Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. |  | Identifying  stronger and  weaker structures  Finding different  ways to reinforce  structures  Understanding  how triangles  can be used to  reinforce bridges  Articulating the  difference between  beam, arch, truss  and suspension  bridges. |  |
| TECHNICAL 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** |  | **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** |  | **frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent**  **design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional** |  |
| CURRICULUM LINKS: | EYFS Link:  **NA** | KS1 NC Links:   * Build structures, exploring how they can be made stronger, stiffer and more stable. | | KS2 NC Links:   * Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. | | | |

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| **TECHNICAL KNOWLEDGE** | | | | | | | | |
|  | EYFS: | Year 1: | Year 2: | Year 3: | Year 4: | Year 5: | Year 6: |
| **MECHANISMS** |  | Learning that  levers and sliders  are mechanisms  and can make  things move.  Identifying  whether a  mechanism is a lever or slider  and determining  what movement  the mechanism will  make.  Using the  vocabulary: up,  down, left, right,  vertical and  horizontal to  describe movement.  Learning that a  lever is something  that turns on a  pivot. | Learning that  mechanisms are  a collection of  moving parts that  work together in a  machine.  Learning that  there is an input  and output in a  mechanism.  Identifying  mechanisms in  everyday objects.  Exploring wheel  Mechanisms.  Learning how axels  help wheels to  move a vehicle.  Identifying what  mechanism makes  a toy or vehicle roll  forwards.  For a wheel to move it  must be attached  to an axle.  Using a bench hook  to saw safely and  effectively. |  | Understand and use lever and linkage mechanisms.  Distinguish between fixed and loose pivots.  Know and use technical vocabulary relevant to the project. |  | Knowing that  mechanisms  control movement.  Describing  mechanisms that  can be used to  change one kind  of motion into  another.  Using a hand drill to make a hole in a cam.  Exploring cams,  learning that  different shaped  cams produce  different follower  movements.  Exploring types  of motions and  direction of a  motion. |
| TECHNICAL VOCABULARY: |  | **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,** | **vehicle, wheel, axle, axle holder, chassis, body, cab**  **assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism**  **names of tools, equipment and materials used** |  | **mechanism, lever, linkage, pivot, slot, bridge, guide**  **system, input, process, output**  **linear, rotary, oscillating, reciprocating**  **user, purpose, function** |  | **pulley, cams, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical systems.** |
| CURRICULUM LINKS: | EYFS Link:  **NA** | KS1 NC Links:   * Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. | | KS2 NC Links:   * Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] | | | | |

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| **TECHNICAL KNOWLEDGE** | | | | | | | |
|  | EYFS: | Year 1: | Year 2: | Year 3: | Year 4: | Year 5: | Year 6: |
| **TEXTILES** |  |  | Understand how simple 3-D textile products are made, using a template to create two identical shapes.  Learning different  ways in which  to join fabrics  together: pinning,  stapling, gluing.  Joining items using  fabric glue or  stitching and identifying benefits  of these techniques.  Threading a needle.  Sewing running  stitch, with evenly  spaced, neat, even  stitches to join  fabric.  Neatly pinning and  cutting fabric using  a template. | Threading needles  with greater  independence.  Tying knots  with greater  independence.  Experiment with different types of stitches.  Understanding  that fabrics can be  layered for affect.  Understanding that  there are different  types of fastenings  and what they are – State benefits of them. |  |  | Confidently using blanket stitch to join fabric.  Applying blanket  stitch so the space  between the  stitches are even  and regular  Threading needles  Independently  Learning different  decorative stitches.  Application  and outcome of  the individual  technique.  Sewing accurately  with even  regularity of  stiches.  Use the appropriate Computer software to design your product. |
| TECHNICAL VOCABULARY: |  |  | **names of existing 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** | **fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam,**  **model, prototype, functional, innovative, aesthetics, function, pattern pieces** |  |  | **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 allowance, wadding, reinforce, hem** |

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| **TECHNICAL KNOWLEDGE** | | | | | | | |
|  | EYFS: | Year 1: | Year 2: | Year 3: | Year 4: | Year 5: | Year 6: |
| **ELECTRICAL SYSTEMS** | **NA** | **NA** | **NA** |  | Learning how  electrical items  work.  Identifying  electrical products.  Learning what  electrical  conductors and  insulators are.  Understanding that  a battery contains  stored electricity  and can be used to.power products.  Identifying the  features of a torch and understanding how it works.  Building a simple circuit that works a torch. | Learning the  key components  used to create a  functioning circuit.  Learning the  difference between  series and parallel  circuits.  Understanding that  breaks in a circuit  will stop it from  working.  Learning how to work a crumble and use the appropriate computer software to programme it. |  |
| TECHNICAL VOCABULARY: |  |  |  |  | **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**  **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** |  |
| Curriculum Links: | EYFS Link:  **NA** | KS1 NC Links:  **NA** | | KS2 NC Links:   * Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors. | | | |