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|  | **0-3 Years - N1 (Jan Nursery Starters)** | **3-4 Years – N1 (Jan Nursery Starters) & N2 (Sep Nursery Starters)** | **Reception** |
| **Disciplinary Knowledge**   * Exploration * Play * Small world opportunities * Box modelling * Joining and fastenings * Discussions / talk * Draw simple representations * Use design templates | **Key Vocabulary:**  Picture, drawing, painting, build, make. | **Key Vocabulary:**  Build, make, join, shape, longer, shorter, heavier. | **Key Vocabulary:**  Develop, explore, skills, teamwork, fastenings, design, change, adapt. |
| **Substantive Knowledge:**  *Physical Development*   * Build independently with a range of appropriate resources. * Start eating independently and learning how to use a knife and fork. * Explore different materials and tools.   *Maths*   * Combine objects like stacking blocks and cups. Put objects inside others and take them out again. * Build with a range of resources.   *Understanding the World*   * Explore materials with different properties. * Explore natural materials, indoors and outside.   *Expressive Art and Design*   * Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. * Use their imagination as they consider what they can do with different materials. * Make simple models which express their ideas. | **Substantive Knowledge:**  *Personal, Social and Emotional Development*   * Make healthy choices about food.   *Physical Development*   * Choose the right resources to carry out their own plan. * Collaborate with others to manage large items. * Use one-handed tools and equipment, for example, making snips in paper with scissors.   *Maths*   * Talk about and explore 2D and 3D shapes.   *Understanding the World*   * Using all their senses in hands-on exploration of natural materials. * Explore collections of materials with similar and/or different properties. * Talk about what they see, using a wide vocabulary. * Explore how things work. * Talk about the differences between materials and changes they notice.   *Expressive Art and Design*   * Make imaginative and complex ‘small worlds’ with blocks and construction kits, such as a city with different buildings and a park. * Explore different materials freely, 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. * Join different materials and explore different textures. * Create closed shapes with continuous lines, and begin to use these shapes to represent objects. | **Substantive Knowledge:**  *Communication and Language*   * Learn new vocabulary * Use talk to help work out problems and organise thinking and activities, and explain how things might work and why they might happen. * Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.   *Personal, Social and Emotional Development*   * Show resilience and perseverance in the face of challenge. * Think about the perspective of others.   *Physical Development*   * Develop their small motor skills so that they can use a range of tools competently, safely and confidently.   *Maths*   * Select, rotate and manipulate shapes to develop spatial reasoning skills.   *Understanding the World*   * Explore the natural world around them.   *Expressive Art and Design*   * Return to and build on their previous learning, refining ideas and developing their ability to represent them. * Create collaboratively, sharing ideas, resources and skills. * Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. * Share their creations, explaining the process they have used. |

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|  | Year 1 | Year 2 | Year 3 |
| **Disciplinary Knowledge**   * Use a design template * Discussion * Evaluation and reflection * Measure and weigh * Assemble, join and combining * Name and sort * Identification and classification * Decoration and finishing * Researching using first-hand experiences | **Key Vocabulary:**  Purpose, planning, ideas, investigating, designing, making, improving, healthy, fruit, vegetables, nutrients. | **Key Vocabulary:**  Research, design, build, stable, evaluate, improve.  Recipe, diet, healthy. | **Key Vocabulary:**  Research, design, make, attach, weigh, measure, sew, evaluate,  Recipe, ingredients, healthy, flavour, texture. |
| **Substantive Knowledge:**  *Research / Design / Planning stage*   * Design purposeful, functional and appealing products based on design criteria. * Explain what their design is and what they would use it for.   *Making the product*   * Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing). * Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. * Measure, mark out, cut and shape materials and components. * Attempt to join materials by gluing or combining materials to strengthen.   *Evaluate*   * Begin to make suggestions about how they could improve theirs or others work. * Explain how products may have been created.   *Cooking and nutrition*   * Consider hygiene and begin to cut, peel or grate ingredients safely. * Measure or weigh using non-standard measurements. * Select appropriate ingredients and follow guidance to cook them. * Name and sort the foods on the eat well plate. | **Substantive Knowledge:**  *Research / Design / Planning stage*   * Design products that have a clear purpose and an intended user. * Research similar existing products to produce ideas.   *Making the product*   * select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. * Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. * Build structures, exploring how they can be made stronger, stiffer and more stable. * Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. * With adult support begin to join textiles using running stitch. * Begin to decorate as well as colour textiles to create different effects (such as dyeing, adding sequins or printing).   *Evaluate*   * Explore and evaluate a range of existing products. * Evaluate their ideas and products against design criteria. * Make simple judgements about their products and designs and suggest how their products could be improved.   *Cooking and nutrition:*   * Use the basic principles of a healthy and varied diet to prepare dishes. * Understand where their food comes from. | **Substantive Knowledge:**  *Research / Design / Planning stage:*   * Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups * Use annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces or computer-aided design to communicate their ideas. * Investigate and analyse a range of existing products.   *Making the product:*   * Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. * Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties. * Experiment with different mechanisms with products (levers, gears, pulleys etc.) * Select different joining techniques. * Decorate their product using different techniques. * Measure and cut products as close as possible to the nearest centimetre.   *Evaluate:*   * Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.   *Cooking and nutrition:*   * 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. |

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|  | Year 4 | Year 5 | Year 6 |
| **Disciplinary Knowledge**   * Discussion * Measure and weigh accurately * Decoration and finishing * Researching using primary and secondary sources * Analyse * Evaluation and reflection | **Key Vocabulary:**  Research, design, appealing, annotate, drawings, evaluate.  Measure, weigh, join, strengthen.  Equipment, utensils, ingredients, hygiene. | **Key Vocabulary:**  Research, design criteria, annotate, sketch, accuracy, decoration, strengthen, evaluate.  Levers, gears, pulleys, mechanisms, circuit.  Cross-contamination, diet, recipe, nutrients, utensils, Celsius. | **Key Vocabulary:**  Research, design criteria, annotate, accuracy, decoration, strengthen, sustainability, evaluate, refine.  Cross-contamination, diet, recipe, nutrients, utensils, Celsius, seasonality. |
| **Substantive Knowledge:**  *Research / Design / Planning stage:*   * Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups * Confidently use annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces or computer-aided design to communicate their ideas. * Investigate and analyse a range of existing products.   *Making the product:*   * Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. * Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties. * Understand and use mechanical systems in their products. * Cut materials accurately and safely. * Select appropriate joining techniques. * Select the most appropriate techniques to decorate textiles.   *Evaluate:*   * 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. * Choose suitable techniques to repair items. * Strengthen materials using suitable techniques.   *Cooking and nutrition:*   * Understand and apply the principles of a healthy and varied diet. * Hygienically prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. * Measure ingredients accurately (to the nearest gram). | **Substantive Knowledge:**  *Research / Design / Planning stage:*   * Use the internet to research and then develop own design ideas. * Take a ‘user’s view’ into account when designing – considering the needs and wants of the individuals. * Produce a logical and realistic plan and explain it to others. * Confidently use annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design to communicate their ideas.   *Making the product:*   * Cut and shape materials with precision, choosing the appropriate tools. * Create series and parallel circuits which include more than the battery and bulb. * Complete products to a high quality. * Mainly accurately apply a range of finishing techniques. * Begin to use levers, pulleys and gears to create movement. * Understand and use electrical systems in their products   *Evaluate:*   * Evaluate the quality of products and design both throughout and after. * Evaluate the key designs of individuals in design and technology and consider how they have shaped the world.   *Cooking and nutrition:*   * Understand the importance of hygiene when preparing ingredients and storing them correctly. * Measure ingredients accurately and look at how to adapt a recipe to make more or less than the stated amount. * Using prior knowledge of cooking and baking to create own recipe (including ingredients and method). | **Substantive Knowledge:**  *Research / Design / Planning stage:*   * Draw on own research to inform their design process, including features of design that will appeal to the intended user. * Use annotated sketches, cross-sectional planning, exploded diagrams and computer-aided programs to represent their innovative design ideas. * Make design decisions, considering resources, cost and how to make them sustainable. * Clearly explain how parts of their design will work and how they are fit for purpose. * Formulate their own step-by-step plan to guide them with making their product, including tools, equipment needed, materials and components.   *Making the product:*   * Cut materials with precision and refine the finish with appropriate tools. * Show an understanding of the qualities of materials to choose the appropriate tools to cut and shape. * Create objects that use a seam allowance. * Join textiles with a combination of stitching techniques.   *Evaluate:*   * Ensure that products have a high-quality finish, using art skills where appropriate. * Record evaluations with drawings. * Evaluate against their own criteria. * Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.   *Cooking and nutrition:*   * Understand the importance of correct storage and handling ingredients. * Measure accurately and calculate the ratios of ingredients to scale up or down from a recipe. * Demonstrate a range of baking and cooking techniques. * Create and refine own recipes, including ingredients, methods, cooking times and temperatures. |