|  |  |  |  |
| --- | --- | --- | --- |
|  | **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.
 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 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.
 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 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.
 |