Curriculum overview for parents and carers

Design and technology

Summary of key Design and technology learning for Reception to Year 5/6.

	EYFS: Reception		
Unit 1	**Workshop** **Junk modelling** Exploring materials through junk modelling, children develop their scissor skills and awareness of different materials and joining techniques. Children begin to make verbal plans and material choices before starting, and problem solve while making their model.	Autumn lesson	**Hibernation box** Designing and making a hibernation box, children consider the function of a product.
Unit 2	**Cooking and nutrition** **Soup** Learning about vegetables and where they come from while preparing to make a soup. Children describe the taste of a range of vegetables and design a soup recipe as a class. They practise cutting skills and prepare the vegetables for their class soup before testing the final product.	Christmas lesson	**Sliding picture** Creating a sliding mechanism chimney picture, children develop their cutting and joining skills.
Unit 3	**Textiles** **Bookmarks** Developing fine motor skills through a range of threading activities before moving on to use binka and a needle. Children design a bookmark, considering what to include and why and then follow their designs to complete their bookmarks.	Spring lesson	**Flower threading** Creating their own threading cards, children practise using scissors and a hole punch.
Unit 4	**Structures** **Boats** Considering the properties of materials through water play, children discover which materials are waterproof and whether they float or sink. Children evaluate a variety of boats and use their new-found knowledge to design and make a boat that is waterproof and floats.	Easter lesson	**Hanging decoration** Designing a hanging egg decoration, children make choices about how to decorate their egg.
		Summer lessons	**Rainbow salad** Researching, designing and making a colourful and healthy salad.

	Year 1/2 Cycle B		
Unit 1	**Cooking and nutrition** **Balanced diet** Exploring and learning what forms a balanced diet, pupils taste test ingredient combinations from different food groups to inform a wrap design of their choice which will include a healthy mix of protein, vegetables and dairy.	Unit 2	**Mechanisms** **Making a moving monster** Learning the terms: pivot, lever and linkage, pupils then design a monster that will move using a linkage mechanism. Pupils practise making linkages and experiment with various materials to bring their monsters to life.
Unit 3	**Structures** **Baby bear's chair** Using the tale of Goldilocks and the Three Bears as inspiration, pupils help Baby Bear by making him a brand new chair, exploring different shapes and materials. When designing the chair, they consider his needs and what he likes.	Unit 4	**Textiles** **Pouches** An introduction to sewing, pupils learn to sew a basic running stitch and then use and create templates to then make their own pouches, designing, cutting, sewing and decorating them.
Unit 5	**Mechanisms** **Fairground wheel** Designing and creating a functional fairground wheel, children consider how the different components fit together so that the wheel rotates and the structure stands freely. They select appropriate material properties and develop their cutting and joining skills. Research existing structures and survey to further inform the design.		

	Year 3/4 Cycle B		
Autumn 1	**Mechanical systems** **Mechanical cars** Building three prototype mechanical cars and selecting the best features to design a final product: a mechanical car kit. Creating design criteria, conducting competitor market research and acting as customers to provide feedback. **Making a slingshot car** Using lollipop sticks, wheels, dowels and straws to create a moving car. Pupils build a car chassis and design the body of the car, giving consideration to how the shape will affect the car's air resistance. They then construct and test their cars.	Autumn 2	**Digital world** **Mindful moments timer** Evaluating existing timer products, pupils then develop a design criteria for a mindfulness timer. They learn how to use coding to program and control a product before then designing and making their own timer.
Spring 1	**Cooking and nutrition** **Adapting a recipe** Evaluating existing biscuits recipes, children then work in groups to adapt a simple biscuit recipe to create a biscuit suited to a chosen target audience. They ensure that their creation comes within a given budget of overheads and ingredients.	Spring 2	**Structure** **Pavilions** Exploring pavilion structures, learning what they are used for and investigating how to create strong and stable structures before designing and creating their own pavilions, complete with cladding.
Summer 1	**Textiles** **Fastenings** Building upon their sewing skills from previous years, pupils design and create a book sleeve; exploring a variety of fastenings and selecting the most appropriate for their design based on strength and appropriate-use.	Summer 2	**Electrical systems** **Torches** Applying their scientific understanding of electrical circuits, pupils design and create a torch made from recycled and reclaimed materials and objects. They then evaluate their products against a set design criteria.

	Year 5/6 Cycle A		
Autumn 1	**Textiles** **Bags** Designing bags for a specific user using pattern piece templates. Choosing features to add to the designs that are aesthetic or functional and sewing features onto the bags, such as fastenings and pockets. **Waistcoats** Selecting fabrics, using templates, pinning, decorating and stitching materials together to create a waistcoat.	Autumn 2	**Electrical systems** **Steady hand game** Designing and creating a steady hand game, using nets to make the bases and applying knowledge of electrical circuits to build an operational circuit with a buzzer.
Spring 1	**Structures** **Playgrounds** Designing and creating a model for a new playground featuring five apparatus, made from three different structures. Using a footprint as the base, practising visualising objects in plan view and including natural features within their designs.	Spring 2	**Digital world** **Navigating the world** Programming a navigation tool to produce a multifunctional device for trekkers. Combining 3D virtual objects to form a complete product concept in 3D computer-aided design modelling software.
Summer 1	**Cooking and nutrition** **Come dine with me** Researching and preparing a three-course meal and taste-testing and scoring their outcomes. Researching the journey of their main ingredient from 'farm to fork' and writing a favourite recipe.	Summer 2	**Mechanical systems** **Automata toys** Using woodworking skills, pupils construct an automata; measuring and cutting their materials, assembling the frame, choosing cams and designing the characters that sit on the followers to form an interactive shop display.