KS1 Design Technology Overview

Year 1	Year 2
Mechanisms: Making a moving story book	**Mechanisms: Making a moving monster**
Experiment with sliders before planning and making three pages of a moving story book, based on a familiar story, drawing the page backgrounds, creating the moving parts and assembling it.	After learning the terms: pivot, lever and linkage, pupils 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.
Structures/Mechanisms: Constructing a Windmill	**Structures: Creating Baby Bear's Chair**
Construct a windmill to complete a request from a user. Develop an understanding of different types of windmill, how they work and their key features. Begin to use technical skills such as making evenly spaced cuts and adding weight to ensure a successful structure.	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.
Cooking and Nutrition: Smoothies	**Cooking and Nutrition: Balanced Diet**
Handle and explore fruits and vegetables and learn how to identify fruit, before undertaking taste testing to establish chosen ingredients for a smoothie they will make, with accompanying packaging.	Explore and learn what forms a balanced diet, pupils will taste test ingredient combinations from different food groups that will inform a wrap design of their choice which will include a healthy mix of protein, vegetables and dairy

**Textiles focus during Creative Arts week in KS1

KS2 Design Technology Overview

Year 3	Year 4	Year 5	Year 6
Mechanical Systems: Pneumatic toys	**Digital World: Mindful Moments Timer**	**Mechanical Systems: Making a pop-up book**	**Cooking and Nutrition: Come dine with me**
Design and create a toy with a pneumatic system, learning how trapped air can be used to create a product with moving parts. Pupil are introduced to thumbnail sketches and exploded diagrams.	Design, program, prototype and brand a Micro:bit timer to a specified amount of minutes. Pupils carry out research and existing product analysis to determine how a programmable product could be personalised to their needs.	Create a four-page pop-up story book design, incorporating a range of functional mechanisms that use levers, sliders, layers and spacers to give the illusion of movement through interaction.	Research and prepare a three-course meal and taste-test and score their food. Research the journey of their main ingredient from 'farm to fork' and write a favourite recipe.
Electrical Systems: Electric poster	**Structures: Pavilions**	**Structures: Bridges**	**Structures: Playgrounds**
An introduction to information design and electrical systems, pupils create an electric poster using a basic circuit to develop a museum display about The Romans.	Exploring pavilion structures, learning about what they are used for and investigate how to create strong and stable structures before designing and creating their own pavilions, complete with cladding.	After learning about various types of bridges and exploring how the strength of structures can be affected by the shapes used, create their own bridge and test its durability - using woodworking tools and techniques.	Design and create a model for a new playground featuring five apparatus, made from three different structures. Using a footprint as the base, practise visualising objects in plan view and get creative including natural features.
Textiles: Egyptian Collars	**Electrical Systems: Torches**	**Electrical Systems: Doodlers**	**Electrical Systems: Steady hand game**
Introduce two new skills to add to the pupils' repertoire: cross stitch and appliqué. Pupils apply their knowledge to the design, decoration and assembly of their own cushions or Egyptian collars	Pupils apply their scientific understanding of electrical circuits to create a torch made from recycled and reclaimed materials and objects. They design and evaluate their product against set design criteria.	Explore series circuits further and introduce motors. Explore how the design cycle can be approached at a different starting point, by investigating an existing product, which uses a motor, to encourage pupils to problem-solve and work out how the product has been constructed, ready to develop their own.	Design and create a steady hand game, use nets to create the bases and apply knowledge of electrical circuits to build an operational circuit with a buzzer that completes the circuit when the handle makes contact with the wire.

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