Streethay Primary School

Design and Technology Unit Overview

Year Group	Autumn 1	Spring 1	Summer 1
1	**Structures – Constructing Windmills** Designing, decorating and building a windmill for their mouse client to live in, developing an understanding of different types of windmill, how they work and their key features.	**Textiles – Puppets** Exploring different ways of joining fabrics before creating their own hand puppets based upon characters from a well-known fairytale. Children work to develop their technical skills of cutting, gluing, stapling and pinning.	**Food – Fruit and vegetables** Handling and exploring fruits and vegetables and learning how to identify which category they fall into, before undertaking taste testing to establish their chosen ingredients for the smoothie they will make a design packaging.
2	**Structures - Baby Bear's chair** Using the tale of Goldilocks and the Three Bears as inspiration, children help Baby Bear by making him a brand-new chair. When designing the chair, they consider his needs and what he likes and explore ways of building it so that it is strong.	**Mechanisms -Fairground wheel** Designing and creating their own Ferris wheels, considering how the different components fit together so that the wheels rotate, and the structures stand freely. Pupils select appropriate materials and develop their cutting and joining skills.	**Mechanisms – Making a Moving Monster** After learning the terms, pivot, lever and linkage, children design a monster which will move using a linkage mechanism. Children practise making linkages of different types and varying the materials they use to bring their monsters to life.
3	**Food – Eating Seasonally** Discovering when and where fruits and vegetables are grown. Learning about seasonality in the UK and the relationship between the colour of fruits and vegetables and their health benefits by making three dishes.	**Digital World – Electronic Charm** Designing, coding, making and promoting a Micro: bit electronic charm to use in low-light conditions. Children develop their understanding of programming to monitor and control their products.	**Mechanical Systems – Pneumatic Toys** Explore pneumatic systems, then apply this understanding to design and make a pneumatic toy including thumbnail sketches and exploded diagrams.
4	**Textiles - Cross-stitch and applique** Children learn and apply two new sewing techniques – cross stitch and applique. Utilise these new skills to design a cushion/Christmas stocking	**Structures – Pavilions** Exploring pavilion structures, children learn 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.	**Electrical Systems – Torches** Applying their scientific understanding of electrical circuits, children create a torch, designing and evaluating their product against set design criteria.
5	**Electrical systems – Steady Hand Game** Understand what is meant by fit for purpose design and form follows function. Design and develop a steady hand game using a series circuit, including housing and backboard	**Mechanical Systems – Making a pop-up book** Creating a four-page pop-up storybook design incorporating a range of mechanisms and decorative features, including: structures, levers, sliders, layers and spacers.	**Food – What could be healthier?** Researching and modifying a traditional Bolognese sauce recipe to make it healthier. Children cook their healthier versions, making appropriate packaging and learn about farming cattle.
6	**Textiles – Waistcoats** Selecting suitable fabrics, using templates, pinning, decorating and stitching to create a waistcoat for a person or purpose of their choice.	**Structures- Playgrounds** Designing and creating a model of a new playground featuring five apparatus, made from three different structures. Creating a footprint as the base, pupils visualise objects in plain view and get creative with their use of natural features.	**Digital World – Navigating The World** Programming a navigation tool to produce a multifunctional device for trekkers. Combining 3D objects to form a complete product in CAD 3D modelling software and presenting a pitch to 'sell' their product.