# CPC Design & Technology Journey - LTP

| Year Group | Concepts | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | NC Aims |
|---|---|---|---|---|---|---|---|---|
| EYFS | • Mechanisms<br>• Structures<br>• Textiles<br>• Cooking and nutrition (Food)<br>• Electrical systems (KS2)<br>• Digital world (KS2) | | **Structures: Junk modelling**<br>Exploring and learning about various types of permanent and temporary join. Pupils are encouraged to tinker using a combination of materials and joining techniques in the junk modelling area. | | **Textiles: Bookmarks**<br>Developing and practising threading and weaving techniques using various materials and objects. Pupils look at the history of the bookmark from Victorian times versus modern-day styles. The pupils apply their knowledge and skills to design and sew their own bookmarks. | | **Structures: Boats**<br>Exploring what is meant by 'waterproof', 'floating' and 'sinking', pupils experiment and make predictions with various materials to carry out a series of tests. They learn about the different features of boats and ships before investigating their shape and structures to build their own. | **Physical Development**:<br>Use a range of small tools, including scissors, paintbrushes and cutlery.<br>**Expressive Arts and Design:**<br>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.<br>Share their creations, explaining the process they have used. |
| Year 1 | | **Structures: Constructing windmills**<br>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**<br>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, glueing, stapling and pinning. | | **Food: Fruit and vegetables**<br>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 for. | | ♣ develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world<br><br>♣ build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users<br><br>♣ critique, evaluate and test their ideas and products and the work of others<br><br>♣ understand and apply the principles of nutrition and learn how to cook. |
| Year 2 | | | **Structures: Baby bear's chair**<br>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: Making a moving monster**<br>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. | | **Mechanisms: Fairground wheel**<br>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 | |
| Year 3 | | **Structures: Constructing a castle**<br>Learning about the features of a castle, children design and make one of their own. Using configurations of handmade nets and recycled materials to make towers and turrets and constructing a base to secure them. | | . **Food: Eating seasonally**<br>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**<br>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 | | |
| Year 4 | | | **Structure: Pavilions**<br>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. | | **Mechanical systems: Making a slingshot car**<br>Transforming lollipop sticks, wheels, dowels and straws into a moving car. Using a glue gun to, making a launch mechanism, designing and making the body of the vehicle using nets and assembling these to the chassis. | | **Electrical systems: Torches**<br>Applying their scientific understanding of electrical circuits, children create a torch, designing and evaluating their product against set design criteria. | |
| Year 5 | | **Electrical systems: Doodlers**<br>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. | | **Mechanical systems: Making a pop-up book**<br>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?**<br>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. | | |
| Year 6 | | | **Textiles: Waistcoats**<br>Selecting suitable fabrics, using templates, pinning, decorating and stitching to create a waistcoat for a person or purpose of their choice. | | **Structure: Playgrounds**<br>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 plan view and get creative with their use of natural features. | | **Digital world: Navigating the world**<br>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. | |
| KS3 | The KS3 national curriculum for design and technology aims to ensure that all pupils:<br>♣ develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world<br>♣ build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users<br>♣ critique, evaluate and test their ideas and products and the work of others<br>♣ understand and apply the principles of nutrition and learn how to cook. | | | | | | | |