KINGSWOOD PRIMARY ACADEMY

KPA Design & Technology Journey - LTP

Year Group	Concepts	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	NC Aims
EYFS		**Let's Investigate Autumn** Clay creatures Leaf pictures Artwork using woodland materials	**Storytime Magic** Building castles/ fairy houses Crowns and tiaras Magic wands	**Dinosaur Discovery** Use and refines a variety of artistic effects to express their ideas and feelings Dinosaurs using different media and techniques	**A Trip to Africa** African patterns Animal prints Mud hut models African masks African dancing Play/ make rainmakers	**Marvellous Mini Beasts** Mini beast finger-puppets Butterfly pictures Clay minibeasts	**Hooray for Summer!** Painting sunflowers Paper flowers Vegetable painting	**Physical Development:** Use a range of small tools, including scissors, paintbrushes and cutlery. **Expressive Arts and Design:** 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.
Y1	Mechanisms Structures Textiles Cooking and nutrition (Food) Electrical systems (KS2) Digital world (KS2)	**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.		**Cooking and Nutrition: Smoothies** 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.		
Y2			**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 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.	
Y3		**Cooking and Nutrition: 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: Wearable technology** Design, code and promote a piece of wearable technology to use in low light conditions, developing their understanding of programming to monitor and control products to solve a design scenario		**Structures: Constructing a castle** 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. 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.		

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Y4			**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.		**Mechanical Systems: Making a slingshot car** 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** Applying their scientific understanding of electrical circuits, children create a torch, designing and evaluating their product against set design criteria.
Y5		**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.		**Electrical Systems: Doodlers** 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.		**Cooking and Nutrition: Developing a Recipe** Research and modify a traditional bolognese sauce recipe to improve the nutritional value. Cook improved version and create packaging that fits design criteria. Learn about where beef comes from.	
Y6			**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 plan 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.
KS3	The KS3 national curriculum for design and technology aims to ensure that all pupils: • Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. • 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. • Critique, evaluate and test their ideas and products and the work of others. • Understand and apply the principles of nutrition and learn how to cook.						