



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Structures: Constructing windmills Inspired by the song, 'Mouse in a windmill', children design, decorate and build 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 Children explore different ways of joining fabrics before creating their own hand puppets based upon characters from a well-known fairy-tale. Throughout they work to develop their technical skills of cutting, gluing, stapling and pinning.		Food: Fruit and vegetables Children handle and explore fruits and vegetables and learn how to identify which category they fall into, before undertaking taste testing to establish their chosen ingredients for the smoothie they will make and design packaging for.	
Year 2		Structures: Baby bear's chair Using the tale of Goldilocks and the Three Bears as inspiration, children help poor 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 a strong and stable structure and doesn't break again!		Mechanisms: Fairground wheel They design and create their own Ferris wheels, considering how the different components fit together so that their wheels rotate and their structures stand freely. Pupils select appropriate materials and develop their cutting and joining skills to create a final product.		Mechanisms: Making a moving monster After learning the terms, pivot, lever and linkage, children set to designing a monster that will move using a linkage mechanism. After practising making linkages of different types and varying the materials they use, children can also bring their monsters to life with the gift of movement.
Year 3	Food: Eating seasonally Pupils will be able to identify fruits and vegetables grown in different countries, what seasonal about them and design their own tart recipes. In this unit, they will also understand the basic rules of food hygiene and safety.		Digital world: Electronic charm Children design, code, make and promote a Micro: bit electronic charm to use in low-light conditions, developing their understanding of programming to monitor and control their products.		Structures: Constructing a castle After identifying castles' most common features, children will use 2D nets to form 3D designs out of simple geometric shapes. They will learn how to score and fold 2D flat nets and understand the role of tabs when creating 3D objects.	
Year 4		Structures: Pavilions Children will explore free-standing frame structures to then design a pavilion by selecting the appropriate materials and techniques. Once finished, the children will make the pavilion aesthetically pleasing by adding cladding.		Mechanical systems: Making a slingshot car Children transform lollipop sticks, wheels, dowels and straws into a moving car. They will be using a glue gun to construct the materials, making the launch mechanism, designing and also making the body of the vehicle using nets and assembling these to the chassis		Electrical systems: Torches In this topic, children apply their scientific understanding of electrical circuits to create a torch made from easily available materials and objects. They will also design and evaluate their product against set design criteria.
Year 5	Electrical systems: Doodlers Pupils analyse an existing product that uses a motor - the Doodler (a scribble bot), then redesign it with their own preferred configuration and finally teach others how to make one by writing instructions as part of a DIY kit.		Mechanical systems: Making a pop-up book After choosing a simple story or nursery rhyme, children create a four-page pop-up storybook design. They will also add accompanying captions, incorporating a range of mechanisms and decorative features, including: structures, levers, sliders, layers and spacers.		Food: What could be healthier? Focusing on nutrition, children research and modify a traditional bolognese sauce recipe to make it healthier. They will cook their new and improved versions, making appropriate packaging and also learn about the ethical considerations of farming cattle.	
Year 6		Textiles: Waistcoats Using the skills they've developed over the past few years, children select fabrics, use templates, pin, decorate and stitch to create a waistcoat for a person or purpose of their choosing.		Structures: Playgrounds This topic draws upon pupils' skills and knowledge of structures, challenging them to design and create a model of a new playground featuring five apparatus, made from three different structures. Creating a footprint as the base, pupils can practise visualising objects in plan view and also get creative with their use of natural features and cladding for their structures		Digital world: Navigating the world Children program a navigation tool to produce a multifunctional device for trekkers. They combine 3D objects to form a complete product in CAD 3D modelling software. The unit accumulates with a pitch to share and 'sell' the children's final product concepts and programs to the Adventure Awaits company guest panel.