Design Technology Curriculum Overview Year 3

Term	Theme	Knowledge and understanding	Skills	What I will know and remember	Vocabulary
1	Let's go fly a kite	**Design** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through annotated sketches. **Make** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately. **Evaluate** Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. **Technical knowledge**	Explain how a small event led to a larger significant event in Design and Technology which helped shape the world. Use research to create ideas and refine them to develop design criteria. Build and join strong frame structures and stiffen materials. Apply their understanding of where and how kites need stiffening.	I can explain how key events and individuals in design and technology have helped shape the world. I can name and explain the function of the different parts of a kite. I can investigate kite shapes. I can select from and use different materials and components. I can develop design criteria. I can develop and communicate a design for my kite.	Fit for purpose Functional Components Function Communicate Line Spars Brindle Sail

		Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.			
Working towards		**End of unit assessment** **Working at**		**Working above**	
2	Juggling balls	**Design** To generate, develop, model and communicate ideas through discussion and annotated sketches **Make** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. **Evaluate** Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Analyse and test a range of existing products. Develop a design aimed at particular individuals or groups. Explain why different fabric decoration techniques have been chosen. With some independence, use a running stitch and an overcast stitch explaining why these methods are suitable for the task.	I can investigate and evaluate juggling balls. I can perform tie-dye as a technique for decorating my fabric. I can research and trial different fillings for my juggling ball and decide upon the most functional one. I can cut around a template and use a running stitch to create a hem. I can use a functional technique to carefully decorate my fabric. I can join my juggling ball using an appropriate stitch to create my finished shape. I can evaluate my product.	Investigate Tie-dye Product Fillings Running stitch Hem

		End of unit assessment			
	Working towards		**Working at**		**Working above**
3	Lego League	**Design** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. **Make** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. **Evaluate** Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	**Designing** With growing confidence generate ideas for an item, considering its purpose and the user/s. Identify a purpose and establish criteria for a successful product. Understand how well products have been designed, made, what materials have been used and the construction technique. Learn about inventors, designers and engineers. Start to understand whether products can be recycled or reused. Know to make drawings with labels when designing. When planning explains their choice of materials and	**Design** I can, with growing confidence, generate ideas for an item, considering its purpose and the user/s. I can identify a purpose and establish criteria for a successful product. I can understand how well products have been designed, made, what materials have been used and the construction technique. I can learn about inventors, designers and engineers. I can start to understand whether products can be recycled or reused. I can make drawings with labels when designing. I can explain my choice of materials and components including function and aesthetics.	Build Structures Mechanisms Conducted

		Technical knowledge Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. Apply their understanding of computing to program, monitor and control their products.	components including function and aesthetics. **Making** Select a wider range of techniques for making their product i.e. construction materials and kits. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work. **Evaluating** Start to evaluate their product against original design criteria. Evaluate familiar products and consider the views of others to improve them.	**Make** I can select a wider range of techniques for making my product i.e. construction materials and kits. I can explain my choice of tools and equipment in relation to the skills and techniques they will be using. I can start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. I can start to think about my ideas as I make progress and be willing to change things if this helps me to improve my work. **Evaluate** I can start to evaluate my product against original design criteria. I can evaluate familiar products and consider the views of others to improve them. I can evaluate the key designs of individuals in design and technology and how it has helped shape the world.	

			Evaluate the key designs of individuals in design and technology and how it has helped shape the world.	**Programme** I can break an open ended problem up into smaller parts. I can put programming commands into a sequence to achieve a specific outcome. I keep testing my program and can recognise when I need to debug it. I can use repeat commands, I can describe the algorithm I will need for a simple task. I can detect a problem in an algorithm.	
End of unit assessment **Working towards**			**Working at**		**Working above**