Design Technology
Curriculum Overview
Year 4

Concepts	User	**Recognise** that some products meet the needs of the user more appropriately.	
	Implementation	**Determine** the effectiveness throughout, **making** adjustments to improve the product.	
	Innovation	**Use** research and **develop** design criteria based on the user's need.	
Mechanisms	**Use kinetic energy to power slingshot cars, designing and making their own and then testing their effectiveness in time trials**		
Context	Transform lollipop sticks, wheels, dowel and straws into a moving car. Pupils use a glue gun to construct, make the launch mechanism, design and create the chassis of a vehicle using nets.		
Design	Developing designs following a list of design criteria, modelling and testing the launch chassis		
Make	Selecting the materials and tools to measure, mark, cut and assemble accurately, using nets and tabs to design and make the car chassis		
Evaluate	Testing products in time trials, comparing to other's designs, discussing and recording ways to improve the speed of the car, reviewing and learning about aerodynamic shapes in cars		
Technical Knowledge	Utilising car-part terminology (e.g. chassis), consolidating net and template creation,recognising key mechanisms as part of a product's key functionality		
Vocabulary	Aesthetic, air resistance, chassis, design, design criteria, function, graphics, kinetic energy, mechanism, net, structure		
Skills application	Maths - Using nets to create 3D shapes, measuring accurately, Science - Forces - understanding the concept of air resistance (Y5) when designing their car, Geography - Considering eco-friendly ways of powering cars		
Recap	Do I know how wheels and axels work?		
Cooking and Nutrition	**Adapt a recipe by adding or altering the ingredients and then work in groups to create a final design that falls within a set budget and design brief.**		
Context	Work in groups to adapt a simple biscuit recipe, to create the tastiest biscuit ensuring that their creation comes within the given budget of overheads and costs of ingredients.		
Design	Reviewing existing products to inform design ideas, working within a set design brief		
Make	Following but adapting an existing recipe, preparing food hygienically, creaming and combining ingredients to form a basic dough		
Evaluate	Reflecting on and identifying flavours from a prototype, reviewing what aspects to change to improve the current recipe		
Cooking and Nutrition	Understanding the cost implications behind professional food preparation, altering a dough to be savoury or sweet, knowing to mix dry ingredients before combining with wet		
Vocabulary	Adapt, budget, equipment, evaluation, flavour, ingredients, method, net, packaging, prototype, quantity, recipe, target audience, unit of measurement, utilities.		
Skills application	Spoken Language - Spoken language - giving a brief pitch for their biscuit recipe, Maths - Completing a budget, considering profit margins, using nets to create 3D packages, PSHE - Following basic food hygiene		
Recap	Do I know which foods are healthy? Do I know how to follow a recipe?		

Electrical Systems	Be introduced to electricity and electrical safety before making a simple electric circuit to create a functioning torch.
Context	Pupils apply their scientific understanding of electrical circuits to create a torch made from recycled and reclaimed materials and objects. They design and evaluate their product against set design criteria.
Design	Designing for a chosen user-profile, identifying key properties (e.g. reflective, water resistant) of a material and utilising this knowledge to inform design ideas
Make	Making a functional, operational electrical series-circuit and housing this appropriately, selecting materials based on their characteristics
Evaluate	Reviewing and discussing existing torches, including use and the reasons behind the materials in their build
Technical Knowledge	Identifying electrical components by name (e.g. bulb, cell), able to build a working electrical series-circuit and correct errors
Vocabulary	Battery, bulb, buzzer, cell, component, conductor, copper, design criteria, electrical item, electricity, electronic item, function, insulator, series circuit, switch, test, torch, wire
Skills application	Science - Electricity - Identifying electrical products, conductors and insulators, building a simple series circuit with a switch, History - Learning about life before electricity, PSHE - Identifying electrical hazards
Recap	Can I make an electrical system?