Design technology - Disciplinary Knowledge

	Key stage 1	Lower key stage 2
Design and Make	Talk about who a product is for and how this helps determine design criteria	Describe the user and purpose of a product
	Design a purposeful prototype	Develop criteria to inform a product design
	Follow their design to build a simple product	Use annotated diagrams to illustrate their design ideas
		Produce a prototype following their design
Use tools & materials	Safely use tools including scissors, whole punch,	Safely use tools including hack saws, craft knives, tape measures
	Use joining materials or tools including glues, stapler, split pin, bodkin, masking tape	Safely use joining tools including glue gun, click rivets, double sided tape, straight pin, sewing needle
	Explain why a chosen joining method is the most appropriate	Explain the functional properties and aesthetic qualities of chosen techniques or materials
	Demonstrate simple cooking skills including; spreading, cutting, mixing, pouring	Independently apply learnt cooking skills including grating, peeling, measuring using scales and measuring cups/spoons
	Identify similarities and differences between existing products	Analyse design features of existing products
Explore and evaluate	Describe how their product meets the design criteria	Describe the functional properties and aesthetic qualities of an existing product packaging
	Identify ways in which their design or product could be tested	Test their product and describe what improvements could be made
	Make changes to a design as a result of a simple test	Describe ways in which a final product may be different from the original design
	Explain good personal hygiene for preparing food	Demonstrate understanding of health and hygiene when preparing food
	Recognise examples of design and technology in the real world	Talk about how key individuals in D & T have helped shape the world
cooking & nutrition	Describe how some foods change when heated (jelly & custard)	Describe the impact that temperature has on some foods. (toast & cheese)
	Describe the milk process from farm to bottle (make butter)	Name a variety of dairy products (make cheesecake)
	Identify which part of the plant we eat in a variety of common vegetables (make a simple salad)	Describe nutritional value of common vegetables (make veg samosas)
	Compare different types of fruit (make a fruit smoothie)	Understand how seasonal fruit was preserved prior to refrigeration (Christmas mince pies)
	Explore and name popular flavours used in common foods (make popcorn)	Describe how use of herbs and seasoning changes the taste of foods (make humus and other flavoured dips)
	Compare recipes made with and without a raising agent (pancakes & drop scones)	Understand the conditions necessary for yeast to be activated (baking bread)

Design Technology - Substantive Knowledge

Year A	Key stage 1	Lower key stage 2
Autumn: **Wheels and Axels**	Find different ways to attach a cylinder to a flat surface	Describe a variety of ways in which paper/card wheels can be attached to an axil shaft
	Design and Create a push along roly poly toy	Design and make a wheeled vehicle from recycled materials that will travel a given distance powered by a balloon
	Use construction kits to identify and explain how axils and wheels work together	Explain the importance of balanced wheels in a real vehicle
Spring: **Structures / Materials**	Learn to make paper tubes to build structures	Define 'strength' in structures
	Build simple frame 3D structures using rolled paper or paper straws Devise tests to identify 'strong' 3D shapes	Use knowledge gained in KS1 to build a meter high tower which can carry an agreed load
	Identify 2D and 3D shapes in real world frame structures	Identify real world mass and frame structures
Summer: **Structures continued**	Use knowledge of strong shape (triangle) to stabilise a tent pole using guy ropes	Stabilise a short flagpole using string and masking tape
	Create a den using a given number of tent poles, guy ropes, pegs and ground sheets	Design and build a simple structure (suspension bridge) which is strengthened using principles of tension and compression
	Describe how a circus tent remains standing	Give examples where real world structures are strengthened by tension and compression

Year B	Key stage 1	Lower key stage 2
Autumn: textiles	Demonstrate accurate weaving technique using a variety of resources	Compare techniques of joining fabric and adding decorative detail
	Design and make a simple woven product	Design and make a stuffed felt hanging decoration
	Talk about the difference between patterns created by woven or printed textile (have a look at tartans worn a by a few different clans)	Talk about how properties of textiles help determine how they may be chosen for different products
Spring: **Levers and Sliders**	Show how simple sliders, wheels and levers can be used to move a 'moving part ' in an arc or straight line	Predict and describe how levers will move when the position of fixed and moving pivots are changed
	Use sliders and/or levers to design and create a moving card	Use fixed and moving pivots to design and make a variety of movement effects to illustrate a children's picture book
	Identify leavers and linkages in real world products	Identify fixed and moving pivots in real world products and machines
Summer: **Packaging**	Use a 2D net to create a 3D shape	
	Design and make a cardboard package to store a given object	
	Explore a range of real world boxes and identify how they are suited to the object they contain.	
Summer: **Using Electricity**		Describe different electrical switch options during the design process
		Design and make a working desk light
		Compare and contrast the purpose and design of a range of real world lamps and lights