DT

KEY STAGE ONE - YEAR A

	AUTUMN 1	AUTUMN 2	SPRING 1
Description	Children will design and make a wheeled vehicle, thinking about its purpose and how it needs to move		Children learn about health and varied diets and where their food comes from. They design and make a healthy sandwich for a child in Foundation Stage.
NC Objectives	• Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups • Select from and use a range of tools and equipment to perform practical tasks (for cutting, shaping, joining and finishing) • Select from and use a wide range of materials and components • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria • Explore and use mechanisms in their products		• Use the basic principles of healthy and varied diet to prepare dishes • Understand where food comes from • Design appealing products for others based on a design criteria • Use a range of tools (knives, cutters, graters) to cut ingredients • Evaluate their product against design criteria
Substantive Knowledge	• Designing - wheeled vehicles based on the success criteria based on its purpose • Make - select from a range of tools and materials to create the moon buggy, using the most appropriate for the task • Evaluate - Adapt and problem solve along the journey. Find solutions to make the structure stable, more study and able to throw • Technical Knowledge - learn how to use mechanisms (wheels and axels)		• Designing - sandwiches based on the design criteria set by a younger child • Make - select from a range of tools to cut and shape their ingredients and sandwich • Evaluate - Adapt and problem solve along the journey. Find solutions to make their sandwich more appealing • Technical Knowledge - learn how to cut safely using the claw and bridge hold
Disciplinary Skills	• To apply the substantive knowledge of the existing products and materials to create their own moon buggy, making thoughtful improvements for the future.		• To apply the substantive knowledge of the existing products to create their own sandwich, making thoughtful improvements for their Foundation Stage buddy.
Vocabulary	vehicle , mechanism, wheels, axels, joining, finishing, designing, evaluating		Eatwell plate, fruit, vegetables, protein, appealing, hygiene, bridge grip, claw grip
Assessment	Assess final product against the design criteria		Assess final product against the design criteria

	SPRING 2	SUMMER 1	SUMMER 2
Description		Children will design and make hand puppet based on characters from traditional tales	
NC Objectives		• Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups • Select from and use a range of tools and equipment to perform practical tasks (for cutting, shaping, joining and finishing) • Select from and use a wide range of material and components, including textiles • Select from and use a wide range of materials and components • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria	
Substantive Knowledge		• Designing - hand puppet for on a traditional tale based on research of existing hand puppets • Make - select from a range of tools and materials to create the puppet, using the most appropriate for the task. Joining materials together using the most appropriate join • Evaluate - Adapt and problem solve along the journey. Find solutions to make the puppet more appealing and the joins secure enough to use • Technical Knowledge - learn how to use basic sewing stitches alongside other joins	
Disciplinary Skills		• To apply the substantive knowledge of the existing products and materials to create their own puppet, making thoughtful improvements for the future.	
Vocabulary		textiles, joining, sewing, research, existing product, hand puppet, design criteria	
Assessment		Assess final product against the design criteria	

DT

KEY STAGE ONE - YEAR B

	AUTUMN 1	AUTUMN 2	SPRING 1
Description		Children will design and make a catapult, thinking about how it can launch its payload	Children learn about health and varied diets and where their food comes from. They design and make a fruit smoothie for themselves
NC Objectives		• Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups • Select from and use a range of tools and equipment to perform practical tasks (for cutting, shaping, joining and finishing) • Select from and use a wide range of materials and components • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria • Explore and use mechanisms in their products	• Use the basic principles of healthy and varied diet to prepare dishes • Understand where food comes from • Design appealing products for others based on a design criteria • Use a range of tools (knives, cutters, graters) to cut ingredients • Evaluate their product against design criteria
Substantive Knowledge		• Designing - catapults based on the success criteria of launching its payload as far as possible • Make - select from a range of tools and materials to create the catapult, using the most appropriate for the task • Evaluate - Adapt and problem solve along the journey. Find solutions to make the structure stable, more study and able to throw • Technical Knowledge - learn how to use mechanisms and make structures stronger, stiffer and more stable	• Designing - smoothies based on the design criteria set and by their own preferences • Make - select from a range of tools to cut their ingredients • Evaluate - Adapt and problem solve along the journey. Find solutions to make their smoothie more appealing • Technical Knowledge - learn how to cut safely using the claw and bridge hold
Disciplinary Skills		• To apply the substantive knowledge of the existing products and materials to create their own catapult, making thoughtful improvements for the future.	• To apply the substantive knowledge of the existing products to create their own smoothie, making thoughtful improvements
Vocabulary		catapult, payload, mechanism,structure, stronger, stiffer, stable, joining, finishing, designing, evaluating	Eatwell plate, fruit, vegetables, protein, appealing, hygiene, bridge grip, claw grip
Assessment		Assess final product against the design criteria	Assess final product against the design criteria

	SPRING 2	SUMMER 1	SUMMER 2
Description		Children will design and make a zoo structure, thinking about how they can keep the animal safe and happy	
NC Objectives		• Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups • Select from and use a range of tools and equipment to perform practical tasks (for cutting, shaping, joining and finishing) • Select from and use a wide range of materials and components • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria • Build structures, exploring how they can be made stronger, stiffer and more stable	
Substantive Knowledge		• Designing - enclosure based on the needs of the animals based on researching current enclosures • Make - select from a range of tools and materials to create the enclosure, using the most appropriate for the task • Evaluate - Adapt and problem solve along the journey. Find solutions to make structures stronger and more sturdy • Technical Knowledge - learn how to make structures stronger, stiffer and more stable	
Disciplinary Skills		• To apply the substantive knowledge of the existing products and materials to create their own enclosure, making thoughtful improvements for the future.	
Vocabulary		structure, stronger, stiffer, stable, joining, finishing, designing, evaluating	
Assessment		Assess final product against the design criteria	

DT
LOWER JUNIORS - YEAR A

	AUTUMN 1	AUTUMN 2	SPRING 1
Description		Children will design and create a Christmas decoration.	To design and create an electronic alarm linked to natural disasters.
NC Objectives		• 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 • Select from and use a wider range of materials including textiles • Evaluate - investigate and analyse a range of existing products • Evaluate - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	• To 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 discussion annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design • Understand how key events and individuals in design and technology helped shape the world • Understand and use electrical systems in their products including switches, bulbs, buzzers and motors • To apply their understanding of computing to program, monitor and control their products.
Substantive Knowledge		• Use correct tools to cut, shape, join and finish • Understand how key events and individuals in DT have helped shape the world	• Investigate electronic circuits • Learn that some products need a battery/circuit to work • Make an electronic alarm for a natural disaster • Refer back to design criteria and evaluate.
Disciplinary Skills		• To use research and develop design criteria to inform the design of an innovative, functional appealing Christmas decoration which is fit for purpose • To generate, develop and communicate their ideas through discussion, annotated sketches and pattern pieces • To evaluate their ideas and products against their own design criteria • To apply their understanding of how to strengthen and reinforce their stitching	• To develop a design for an innovative and functional product aimed at a specific audience • Generate an annotated cross-sectional diagram to communicate ideas • Develop digital working prototypes mechanical and control skills • Understand simple electrical control
Vocabulary		cutting, shaping, joining, functional properties, aesthetics, prototypes,names of fabrics, fastening, compartment, button, finishing technique, strength, weakness, stiffening,	Circuit, battery, crocodile clip, control, program, system, input, output

		templates, stitch, seam, seam, allowance	
Assessment		Assess final product against the design criteria	Assess final product against the design criteria

	SPRING 2	SUMMER 1	SUMMER 2
Description		Children design and make a moving mascot using pneumatics, levers and linkages.	
NC Objectives		• 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. • Select from and use a wider range of materials • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Understand and use mechanical systems in their products	
Substantive Knowledge		• Explore pneumatic systems • Understand what can be learnt through existing products • Understand context in which pneumatics are used • Look at examples of pneumatics and discuss how each one works • Design a moving mascot that moves using pneumatics using design criteria • Make a moving mascot and add finishing touches • Refer abc to design criteria and evaluate.	
Disciplinary Skills		• Mechanical and control skills - Understand how pneumatic systems work • Design - develop a design for a functional and appealing product aimed at a specific audience; choose suitable techniques, tools and materials to construct products or to repair items; • Make - select from and use a range of tools, materials and equipment; perform practical tasks; refine work and techniques as work progresses, continually evaluating the product design and suggesting improvements • Evaluate - investigate and analyse existing products; evaluate their ideas and products	

		against their own design criteria	
Vocabulary		Mascot, pneumatic system, compress, lever, hinge, inflate, input, output	
Assessment	.	Assess final product against the design criteria	

DT
LOWER JUNIORS - YEAR B

	AUTUMN 1	AUTUMN 2	SPRING 1
Description	To design and create pizza		To design and create a lidded box to store dragon egg (using Computer Aided Design)
NC Objectives	• To 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 • To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams and prototypes • 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 and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.		• To 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 • To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams, prototypes, pattern pieces and computer aided design • Select from and use a wider range of tools and equipment to perform practical tasks (cutting, shaping, joining and finishing) accurately • 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 shaped the world • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
Substantive Knowledge	• Design - research design criteria; generate ideas • Make - select from a range of tools and equipment, learn a range of cooking skills • Evaluate - investigate a range of existing products; evaluate against their own criteria. • Technical knowledge - understand principles of a healthy diet; cook a savoury item, know how/where ingredients are grown; use equipment safely.		• Design - research design criteria; generate ideas, use computer aided design to generate nets • Make - select suitable tools and equipment, follow safety procedures; cut, shape, join and finish • Evaluate - investigate a range of existing products; identify the strengths and weaknesses of the product; evaluate against their own criteria. • Technical knowledge - understand how nets can be used to make a 3D product; use a computer to generate an accurate net

Disciplinary Skills	• To apply the substantive knowledge of the existing products and materials to create their own pizza which is appealing and aesthetically pleasing • Make thoughtful improvements based on critical evaluation • Apply learning from other subjects (maths and art) to help design, make and evaluate a quality food product.		• To apply the substantive knowledge of the existing products and materials to create their own lidded box which is fit for purpose, functional and aesthetically pleasing • Make thoughtful improvements based on critical evaluation • Apply learning from other subjects (maths and art) to help design, make and evaluate quality products that work.
Vocabulary	Eat well plate, chopping, slicing, grating, mixing, knead, rise, ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, fresh, savoury, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet		Reinforce, strengthen, aesthetics, shell structure, three-dimensional (3D), shape, net, cube, cuboid, prism, vertex, edge, face, length, width, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, laminating, font, graphics
Assessment	Assess final product against the design criteria		Assess final product against the design criteria

	SPRING 2	SUMMER 1	SUMMER 2
Description		To design and create a pop- up book.	
NC Objectives		• To 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 • To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams and prototypes • Select from and use a wider range of tools and equipment to perform practical tasks accurately. • 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 • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. • Understand and use mechanical systems for their products (levers and linkages).	
Substantive Knowledge		• Design - research design criteria; generate ideas, use annotated sketches, measure and mark accurately, apply finishing techniques • Make - select from a range of tools and equipment, follow safety procedures • Evaluate - investigate a range of existing products; identify strengths and weaknesses; evaluate the quality of the product • Technical knowledge - understand the mechanical systems of levers and linkages, understand how to strengthen, stiffen and reinforce more complex	

		structures	
Disciplinary Skills		• To apply the substantive knowledge of the existing products and materials to create their information page using levers and linkages which is fit for purpose and aesthetically pleasing • Make thoughtful improvements based on critical evaluation • Apply learning from other subjects (maths and art) to help design, make and evaluate the information page.	
Vocabulary		Mechanism, lever, linkage, pivot, slot, bridge, guide, system, input, process, output, linear, rotary, oscillating, reciprocating	
Assessment		Assess final product against the design criteria	

DT
UPPER JUNIORS - YEAR A

	AUTUMN 1	AUTUMN 2	SPRING 1
Description			Children design and create a prototype for a fairground ride
NC Objectives			• use research and develop design criteria to inform the design of innovative products • select from and use a wider range of materials and components, including construction materials,according to their functional properties and aesthetic qualities • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products • understand and use electrical systems in their products • apply their understanding of computing to program, monitor and control their products.
Substantive Knowledge			• Design - indicate design features of their products that will appeal to users; develop design specifications to guide thinking; use annotated sketches; measure, mark out and saw accurately; apply finishing techniques • Make - select suitable tools and equipment; follow safety procedures; • Evaluate - identify strengths and weaknesses; understand the functional and aesthetic qualities of materials; critically evaluate the quality of the product

			• Technical knowledge - recognise that materials can be combined; programme a computer to control the product
Disciplinary Skills			• To apply the substantive knowledge of the existing products and materials to create their own ride that is fit for purpose, functional and aesthetically pleasing • Make thoughtful improvements based on critical evaluation • Apply learning from other subjects (maths, science and art) to help design, make and evaluate quality products that work
Vocabulary			movement aesthetics pulley wheel tension circuit measure saw
Assessment			Assess final product against the design criteria

	SPRING 2	SUMMER 1	SUMMER 2
Description		Children learn how to sew, then design and create their own Computer Aided Design eco-friendly bags (Year 5 only)	
NC Objectives		• 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 discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and pattern pieces • select from and use a wider range of tools and equipment to perform practical tasks, accurately • select from and use a wider range of materials and components, including construction materials, textiles and according to their functional properties and aesthetic qualities • 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	
Substantive Knowledge		• Design - describe the purpose of product; develop design criteria; model ideas • Make - confidently select tools and equipment, including material that is fit-for-purpose; measure and cut accurately; accurately assemble and join • Evaluate - identify strengths and weaknesses throughout the process, adapting where necessary; analyse how well products have been designed and made; evaluate against original design	

DT

UPPER JUNIORS - YEAR B

	AUTUMN 1	AUTUMN 2	SPRING 1
Description	Children learn about the principles of nutrition, designing and creating their own healthy pasty	Children design, create and evaluate a cams toy	
NC Objectives	• Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	• 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 • evaluate their ideas and products against design criteria • understand how key events and individuals in design and technology have helped shape the world • 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]	
Substantive Knowledge	• Design - research design criteria; generate ideas • Make - select from a range of tools and equipment; learn a range of cooking skills • Evaluate - investigate a range of existing products; evaluate against own criteria • Technical - understand principles of a healthy diet; cook a savoury dish; know where/how ingredients are grown; use equipment (e.g. sharp knife) safely	• Design - work confidently in a range of contexts; describe the purpose and audience; model ideas using prototypes; use annotated sketches • Make - select suitable tools and equipment; order stages of the making process; measure, mark out and cut materials accurately; use techniques that involve a number of steps • Evaluate - consider views of others (including intended users); critically evaluate the quality of design • Technical knowledge - Know how mechanical	

		systems such as levers and linkages create movement; know that mechanical. systems e.g cams, pulleys or gears create movement	
Disciplinary Skills	• To apply the substantive knowledge of the existing products and materials to create their own pasty that is well-made, tasty and aesthetically pleasing • Use cooking skills effectively and apply the principles of nutrition and healthy eating	• To apply the substantive knowledge of the existing products and materials to create their own toy that is fit for purpose, functional and aesthetically pleasing • Make thoughtful improvements based on critical evaluation • Apply learning from other subjects (maths, science and art) to help design, make and evaluate quality products that work	
Vocabulary	Cook chop peel bake dice knife grater roll fold crimp	Cam movement mechanism push pull rotate slider component	
Assessment	Assess final product against the design criteria	Assess final product against the design criteria	

	SPRING 2	SUMMER 1	SUMMER 2
Description		Children learn how to sew, then design and create their own eco-friendly bags (year5 only)	
NC Objectives		• 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 discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and pattern pieces • select from and use a wider range of tools and equipment to perform practical tasks, accurately • select from and use a wider range of materials and components, including construction materials, textiles and according to their functional properties and aesthetic qualities • 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	
Substantive Knowledge		• Design - describe the purpose of product; develop design criteria; model ideas • Make - confidently select tools and equipment, including material that is fit-for-purpose; measure and cut accurately; accurately assemble and join • Evaluate - identify strengths and weaknesses throughout the process, adapting where necessary; analyse how well products have been designed and made; evaluate against original design • Technical knowledge - understand that materials	

		have functional and aesthetic qualities; recognise that materials can be combined and mixed	
Disciplinary Skills		• To apply the substantive knowledge of the existing products and materials to create their own bag • Make thoughtful improvements based on evaluation • Apply learning from other subjects (maths, science and art) to help design, make and evaluate products that work	
Vocabulary		Cut stitch tie thread knot needle pattern seam reinforce fastenings	
Assessment		Assess final product against the design criteria	