

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Invaders and Settlers-Vikings / Space		Queen Victoria/Victorian School	Suffragettes/Crime/Technology/ Philanthropists	River/Water Cycle	European Study-Spain
National Curriculum Learning Intentions	Design - • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams. Make - use wider range of tools and equipment (cutting, shaping, joining and finishing), accurately; • select from and use from instruction materials and textiles, 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; • understand how key events and individuals have helped shape the world 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.					
DT Units	Mechanical Systems		Frame Structures		Electrical Systems (Crumble)	
Design	<ul style="list-style-type: none"> • To come up with a range of ideas after researching • To produce a detailed step by step plan • To use cross sectional planning to show design (annotated and exploded) 		<ul style="list-style-type: none"> • To indicate the design features and purpose that will appeal to intended users • To develop a simple design specification to guide their thinking • To generate innovative ideas, drawing on research • To make design decisions, taking account of constraints such as time, resources and cost 		<ul style="list-style-type: none"> • To develop a design that has cause and effect • To make a sketch and diagram of circuits 	
Make	<ul style="list-style-type: none"> • To formulate step-by-step plans as a guide • To accurately measure, mark out, cut and shape materials and components • To accurately assemble, join and combine materials and components within a given time 		<ul style="list-style-type: none"> • To formulate step-by-step plans as a guide • To accurately measure, mark out, cut and shape materials and components • To accurately assemble, join and combine materials and components within a given time • To use a range of finishing and decorative techniques 		<ul style="list-style-type: none"> • To formulate step-by-step plans as a guide • To accurately measure, mark out, cut and shape materials and components • To accurately assemble, join and combine materials and components within a given time • To create and modify a computer control programme 	
Evaluate	<ul style="list-style-type: none"> • To consider the views of others, including intended users, to improve their work • To test and evaluate my final product • To evaluate appearance and function against the original design • To research NASA and their build of space buggies 		<ul style="list-style-type: none"> • To consider the views of others, including intended users, to improve their work • To test and evaluate my final product • To practise evaluation skills by evaluating against a criteria • To research inventors, designers and engineers who have designed ground breaking bridget structures 		<ul style="list-style-type: none"> • To evaluate appearance and function against the original design • To practise evaluation skills by evaluating against a criteria 	
Technical Knowledge	<ul style="list-style-type: none"> • To understand and use mechanical systems in their product using gears, pulleys, cams, linkages and levers 		<ul style="list-style-type: none"> • To understand how to reinforce and strengthen a 3D framework 		<ul style="list-style-type: none"> • To know how to program a computer to monitor changes in the environment and control their products • To know how to use learning from science/ICT/maths to help products that work • To know that mechanical and electrical systems have an input, process and output • to know the correct technical vocabulary for the projects they are undertaking 	
Cooking and Nutrition						
Key Skills	Reseach various NASA designs To generate a simple design Investigate and trial potential materials and components Negotiate, develop and agree a step by step plan Joining methods To evaluate the product with others		Explore existing free standing structures and explain what gives them strength, reinforcement and stability. Select tools and equipment to join Design and build bridges Use a wider range of tools and equipment to perform practical tasks accurately. Use appropriate cutting and shaping techniques that include cuts Consider the views of others to improve their work.		To develop innovative ideas through discussion and annotated sketches Model possible electrical circuits and record designs pictorially or using circuit diagrams To present a step by step plan Writing and testing programmes and connecting to a micro-controller To evaluate the alarm against the original design specifications	
Learning Intentions	To research and consider vehicles for space To research a space vehicle's purpose To choose materials to make it fit for purpose To choose tools, materials and constraints To build a product To evaluate the product		To investigate free standing structures and apply my understanding of structures To use a wider range of tools and equipment to perform practical tasks accurately.		Money Box To consider how my money box will motivate to save money To decide what components will be needed and how to program it To appraise reflect and refine To evaluate the electric money box and whether it has achieved it's purpose	
Resources	pulley or gear kits, elastic bands, glue, tape, card, square sections, finishing media		Cardboard tubes, Card, Paper, A range of joining materials such as PVA glue, masking tape, glue sticks, adhesive tape, double-sided tape Scissors, tape measure, straws, photographs, web based media resources		Crumble kits	
Vocabulary	pulley, gears, drive-belt, mechanical system, driver, follower, mesh, motor spindle		modelling, compression, strut, tension, tie, diagonal, horizontal, vertical, triangulated, frame structure		program, micro controller, light emitting diode, system, output device, input device, process	

Year 5 DT Skills and Knowledge Overview