Ashbrook Junior School
Curriculum Subject Progression Overview

Design & Technology

	Whole School Concept					
	Identity & Diversity	**Community**	**Sustainable Development**	**Perseverance**	**Equality & Fairness**	**Creativity**
Year 3		**<u>Sewing Christmas stockings</u>** **National Curriculum 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 -select from and use a wider range of tools and equipment to perform practical tasks -select from and use a wider range of materials and components, including textiles		**<u>Roman chariots</u>** **National Curriculum Objectives:** - about great architects in history -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 -select from and use a wider range of tools and equipment to perform practical tasks - select from and use a wider range of materials and components,	**<u>Moving objects- Ancient Greece</u>** **National Curriculum 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 -select from and use a wider range of tools and equipment to perform practical tasks - select from and use a wider range of materials and components, including	

		-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 **WALT understand different stitches – front, back & be able to thread a needle** **WALT be able to create a template** **WALT be able to measure to the nearest mm, mark out, cut and shape** **WALT be able to measure, tape or pin and cut fabric with some accuracy**		including construction materials -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 **WALT understand how to measure to the nearest mm, mark and cut out using appropriate tools** **WALT know how mechanical systems such as wheels and axels create movement** **WALT know how to use finishing**	construction materials -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 **WALT understand what pneumatic and hydraulic systems are** **WALT be able to model using syringes and tubing** **WALT be able to cut safely** **WALT be able to use a variety of sticking techniques** **Skills** Design a scaled model of an Egyptian	

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				techniques to improve a product **Skills** Design a scaled model of a Roman chariot Use axles to create moveable parts Use cutting and sticking to create 3D shapes. Design for an audience Evaluate product against design criteria	pyramid Use syringes and tubing to create moveable parts Use cutting and sticking to create 3D shapes. Design for an audience Evaluate product against design criteria	
Year 4		**<u>Design and make a water transferring device – Ancient Egyptians</u>** **National Curriculum Objectives:** <u>Design</u> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals	**<u>Textiles</u>** **<u>Design and make fashion with rubbish and recycled materials</u>** **National Curriculum Objectives:** <u>Design</u> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at		**<u>Food- Black Britain</u>** **National Curriculum 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	

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		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 <u>Make</u> Make select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately 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 <u>Evaluate</u> investigate	particular individuals or groups <u>Make</u> Make select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately 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 <u>Evaluate</u> 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		know where and how a variety of ingredients are grown, reared, caught and processed. **WALT be able to understand a healthy and varied diet** **WALT be able to understand the difference between local and imported produce** **WALT be able to design your own healthy meal (fruit salad)** **WALT be able to work safely with a range of utensils (knives, chopping board, grater)**	

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		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 **WALT understand how water was taken from the River Nile** **WALT be able to investigate which materials are most suitable for carrying water** **WALT be able to plan and design a water transferring device** **WALT be able to make a water transferring device** **WALT be able to evaluate a design** **WALT to be able to work collaboratively**	individuals in design and technology have helped shape the world **WALT understand the uses of recycled materials in fashion** **WALT be able to thread a needle and practise different types of stitch** **WALT be able to plan how to upcycle a piece of clothing** **WALT be able to upcycle a piece of clothing** **WALT be able to evaluate upcycled fashion against our design criteria**		**What children need to know/ be able to**	

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		What children need to know/ be able to do by the end of this unit: Know about modes of travel on the Nile river How to test properties of materials (link to prior learning from KS1 science) How to design a boat to a given criteria How to create a scaled drawing **Skills** Test different materials to a criteria Design a boat to a given criteria Sketch a scaled drawing of a boat Use cutting and sticking to create 3D shapes.	**What children need to know/ be able to do by the end of this unit:** To know products that are overused and is currently not recycled/reused Explore existing upcycled clothing items and the importance around it **Skills** Generate annotated sketch of product Select and use appropriate tools e.g. sewing machine for basic stitching and sewing needle and thread for embellishments Select and use appropriate techniques to use for e.g. type of stitching		**do by the end of this unit:** What a healthy and varied diet is Know how to prepare a dish according to a healthy diet Understand seasonality and know where and how a variety of fruits are grown, harvested and processed Understand and apply the principles of a varied and healthy diet **Skills** Label a healthy varied diet Prepare a fruit salad using a range of cooking technique e.g. chopping and peeling Evaluate product against design criteria	

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			Evaluate product against design criteria			
Year 5		**<u>Design, make, evaluate (Long boats)</u>** **National Curriculum Objectives:** -use research and develop design criteria to inform the design of functional products that are fit for purpose. -generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams. -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	**<u>Recycling (Garden decorations)</u>** **National Curriculum 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. -select from and use a wider range of tools and equipment to perform practical tasks accurately.		**<u>Moon buggy</u>** **National Curriculum 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. -select from and use a wider range of tools and equipment to perform practical tasks accurately.	

		components, including construction materials and textiles 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. -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.	-select from and use a wider range of materials and components, including construction materials and textiles 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. -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		-select from and use a wider range of materials and components, including construction materials and textiles 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. -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	

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		WALT be able to use research and develop design criteria to inform the design of functional products that are fit for purpose. **WALT be able to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams.** **WALT be able to select from and use a wider range of tools and equipment to perform practical tasks accurately.** **WALT be able to use a wider range of materials and components, including construction materials and textiles according to their functional**	more complex structures. **WALT be able to investigate and analyse a range of existing products.** **WALT be able to use research and develop design criteria to inform the design of functional products that are fit for purpose.** **WALT be able to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams.** **WALT be able to use a wider range of materials and components, including construction materials and textiles according to**		more complex structures. -understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] - understand how key events and individuals in DT have helped shape the world. **WALT understand how mechanical systems such as cams or pulleys or gears create movement** **WALT understand how to build a working circuit that includes a battery, a switch and motor** **WALT be able to use appropriate tools to accurately measure, mark out, cut, shape**	

		properties and aesthetic qualities. **WALT be able to investigate and analyse a range of existing products.** **WALT be able to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.** **WALT be able to apply their understanding of how to strengthen, stiffen and reinforce more complex structures.** **What children need to know/ be able to do by the end of this unit:** Know about modes of travel across the North Sea How to test properties of materials (link to	**their functional properties and aesthetic qualities.** **What children need to know/ be able to do by the end of this unit:** Know the functionality of different products Research in order to come up with a design criteria Explore different materials. **Skills** Investigate the punctuality of different materials Use scissors correctly cutting, shaping, joining and finishing Sketch a scaled drawing with diagrams		**and join materials to make frameworks** **WALT be able to evaluate the effectiveness of the product** **What children need to know/ be able to do by the end of this unit:** **Identify the names of different features e.g. rills, mons, montes, craters, mare and marie.** **Research about existing moon vehicles and exploring the different design features required for the vehicle's purpose** Use your own ideas to make something. . **Skills**	

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		prior learning from KS1 science) How to design a boat to a given criteria How to create a scaled drawing **Skills** Design a boat to a given criteria Sketch a scaled drawing Test properties of materials (link to prior learning from KS1 science)			Design then make a prototype which moves Use scissors correctly cutting, shaping, joining and finishing Follow how to make a mechanism Evaluate the final prototype	
Year 6			Bridges **National Curriculum Objectives:** - 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]	Electrical Circuits (make a torch) **National Curriculum Objectives:** -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	Seasonality **National Curriculum 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	

			WALT understand the differences between different types of bridges **WALT understand how pillars and beams are used to span gaps** **WALT understand how can trusses be used to strengthen bridges** **WALT understand arches are used to strengthen bridges** **WALT understand how suspension bridges are able to span long distances** **WALT be able to develop criteria and design a prototype bridge for a purpose** **WALT be able to test a prototype product** **What children need to know/ be able to**	products. **WALT how to make labelled diagrams using digital technology** **WALT be able to apply knowledge of electrical circuits in Science to create circuits** **WALT be able to mark out, cut and shape a range of materials using appropriate tools** **WALT understand how more complex electrical circuits and components can be used to create products** **WALT understand how to evaluate products carrying out appropriate checks (e.g. dark room checks)** **What children need to know/ be able to**	seasonality. **WALT understand how much recipes cost to make and the impact on the cost of living and on lifestyle** **WALT know how to select appropriate utensils** **WALT select from a wider range of food** **WALT evaluate a recipe against the original design**	

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			do by the end of this unit: **What children need to know/ be able to do by the end of this unit:** Understand different types of bridges Compare the similarities and differences between different bridges Discuss and sketch an aqueduct model **Skills** Create an appropriate design criteria Sketch an aqueduct model Select appropriate materials and use a range of tools and equipment to make an aqueduct Evaluate model against design criteria	**do by the end of this unit:** Know how to create different kinds of circuits Know how to create different kinds of switches – pressure switch; pull and release switch; rotating switch component icons taught in science Use CAD – tbc **Skills** Draw the circuit design using electrical Create a circuit for a given design brief	**What children need to know/ be able to do by the end of this unit:** What a healthy and varied diet is Know how to prepare a dish according to a healthy diet Understand seasonality and know where and how a variety of fruits are grown, harvested and processed Understand and apply the principles of a varied and healthy diet **Skills** Label a healthy varied diet Prepare a biscuit using a range of cooking technique e.g. baking, rolling/kneading	

					dough, cutting and decorating Evaluate product against design criteria Plan and deliver a biscuit sale	