Cumwhinton School Curriculum – Design Technology Y3 SPR		
Year 3	NC Content	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: <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 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> • 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 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 <u>Technical knowledge</u> • 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. <u>Cooking and nutrition</u> As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to: • 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.

Design Technology

Design Make Evaluate Technology Vocabulary

Mapping across the Year

	AUTUMN	SPRING	SUMMMER
Design		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 and exploded diagrams, prototypes, pattern pieces and computer-aided design	**Cooking and Nutrition** To understand and apply the principles of a healthy and varied diet To understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
Make		To 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	To prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
Evaluate		To investigate and analyse a range of existing products. To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. To understand how key events and individuals in design and technology have helped shape the world	
Technology Vocabulary		To 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] To understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] To apply their understanding of computing to program, monitor and control their products.	

CONCEPTUAL SCHOOL AMBITION DRIVERS

	EYFS & KS1	LKS2	UKS2
AUT	Diversity	Fairness	Individuality
SPR	Truth	Change	Resilience
SUM	Responsibility	Equality	Sustainability

DT – SPRING YEAR 3
HUMANITY – Change

Design Make Evaluate Technology Vocabulary

How did the invention of pulleys change the modern world?

	NC	CUMWHINTON CURRICULUM
Design	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 and exploded diagrams, prototypes, pattern pieces and computer-aided design	Project - To make a pulley Design Firstly, show the children how a simple pulley works by watching videos: https://www.youtube.com/watch?v=LiBcur1aqcg https://www.youtube.com/watch?v=1fR4-VCPqI4 Make a simple pulley step by step so the children can see how this works, before making a plan for their project. Children make a simple pulley in groups in the classroom, so they have a clear understanding of how this works. Children will need: A pencil Tape Yarn or twine An empty ribbon or thread spool Small plastic cup (an applesauce or yogurt cup from your recycling would work) Hole Punch Instructions to follow - 1. Punch three holes in the cup, evenly spaced from one another. This will be your bucket for lifting objects. 2. Cut three short lengths of yarn or twine (about 3 in. each). Tie one to each hole in the cup. 3. Tie the three loose ends of yarn together. 4. Cut a long (about 12 in.) piece of yarn or twine, and tie one end around the knot connecting the three small pieces of yarn/twine. 5. Wrap the long piece of yarn/twine around the spool. 6. Push the pencil through the hole in the centre of the spool. Make A Pulley You will need: A pencil Tape Yarn or twine An empty ribbon or thread spool Small plastic cup (an applesauce or yogurt cup from your recycling would work) Hole Punch Page 1 of 2 1. Choose a high place to mount your pulley. It could be between two tables or bookcases, or cut a hole in a box . 2. Holding on to the loose end of yarn/twine so that your spool doesn't unwind, tape the ends of the pencil to the surface where you wish to mount your pulley. 3. Test your pulley by putting objects in the cup to raise and lower. Children can draft designs which can be kept in their files and label their designs.
Make	To 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	Make their hand crank winch, following these step by step instructions on - https://littlebinsforlittlehands.com/build-a-winch-simple-machine-recycled-stem-activity/ 

Evaluate	To investigate and analyse a range of existing products. To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. To understand how key events and individuals in design and technology have helped shape the world	Children will evaluate their design against prior plans and drafts. The children can discuss if their pulley worked as well as the ones they made in groups. What was the same? What was different? What worked better? Get children to discuss how their own work could be improved, if they were to do this again. Talk about how this technology (pulleys) have helped to shape our world. - Pulleys allow people to pull heavier objects around than they could using only their muscles. This allowed ancient countries to build large sailing ships and explore the world, because people would not be able to pull the sails into the right place without them. - Elevators use multiple pulleys in order to function. A cargo lift system that allows for items to be hoisted to higher floors is a pulley system. Wells use the pulley system to hoist the bucket out of the well. Many types of exercise equipment use pulleys in order to function.
Technology Vocabulary	To 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] To understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] To apply their understanding of computing to program, monitor and control their products.	Whilst making their projects children should be discussing the materials they are using and their choices behind this. Will they be strong enough? Will they carry the weight of the pulley? Can children explain how the pulley works? Using their model to help them explain. User, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing, pulley, gear, lever, weight, explain.