Cumwhinton School Curriculum – Design Technology Y6 SUM		
Year 6	NC Content	**Design** -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 **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 **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 in design and technology 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. **Cooking and Nutrition** -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. - 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 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.	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
Make		To prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	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
Evaluate		To evaluate own cooking – how could it be improved next time? How could the recipe be adapted?	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. To 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 – SUMMER YEAR 6
HUMANITY - Equality

Design Make Evaluate Technology Vocabulary

	NC	CUMWHINTON CURRICULUM
Design	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	https://practicalaction.org/our-work/projects/turn-the-tables-sudan/ Project - ' Linked to values' this will provide a challenge for children who have already gained experience in constructing models with moving parts and with using electrical circuits. The focus is on getting the various mechanisms to work successfully rather than on producing a sophisticated and realistic model of a fairground ride. Use a video or photographs of appliances that have rotating parts. Discuss the children's experience of such rides. -How does it turn? -Can you see the mechanism which turns? -What are the different parts called? -How are the components joined together? The children could examine a collection of toys and other appliances in which there are electric motors eg toy vehicles, battery-operated fan, battery-operated shaver, cassette player. With the children, look at mechanisms in which a belt and pulley is used eg car fan belt, electric sewing machine, record player turntable, vacuum cleaner, roller blind. The rotating part of the product must turn on a spindle or axle which is supported by a strong and stable framework A 'pulley' can be commercially produced, made by the children or can be the axle itself The drive belt (which can be an elastic band) must be at the right tension between the two 'pulleys', so position the motor carefully It is best to have a small 'pulley' on the motor and as large a one as possible on the turning part in order to gear down the turning speed.
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	Ask the children to investigate different ways of making a framework to hold the model eg build the model on a baseboard, use card and straws, use a framework with added triangles or diagonals, use a construction kit. Consider carefully how to support the rotating part on a well-supported axle or a spindle. The children could use elastic bands and pulley eg cotton reels on spindles to investigate transferring movement from one axle to another. The children could use construction kit components to investigate and to change the speed of rotation using belts and pulleys. The children could use a pulley on an electric motor with an elastic band to produce rotation of cotton reels on a spindle or a drinks can on an axle. Hold the electric motor in different positions to discover the best arrangement. Discuss how they will finish their model. Ask the children to make a model of the mechanism they will use by employing a construction kit or simple card box to hold the components. (They should be able to play around with and alter this preliminary model quickly and easily at this stage. This 'mock-up' could be taken as equivalent to a design drawing for this project).

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 in design and technology have helped shape the world	Ask the children to evaluate their product by referring to their own criteria for success. -Does the model rotate freely without the motor? -Does the motor drive it at the right speed? -Is the product interesting? -Does the product have a strong and stable framework?
Technology Vocabulary	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	