Cumwhinton School Curriculum – Science Y4 AUT		
Year 4	NC Content	**Living things and their habitats** Pupils should be taught to: • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things **Animals, including humans** Pupils should be taught to: • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey **States of matter** Pupils should be taught to: • compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature **Sound** Pupils should be taught to: • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases **Electricity** Pupils should be taught to: • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors

Scientific Knowledge & Understanding Science Enquiry & Working Scientifically Uses & Implications of Science today and for the future

Mapping across the Year

	AUTUMN	SPRING	SUMMMER
Scientific Knowledge & Understanding	Living Things & Their Habitats Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things Animals Including Humans Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey	States of Matter Compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Sound Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases Electricity Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors
Science Enquiry & Working Scientifically	Living Things & Their Habitats Animals Including Humans Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Identifying differences, similarities or changes related to simple scientific ideas and processes (Above for both AUT units)	States of Matter Asking relevant questions and using different types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identifying differences, similarities or changes related to simple scientific ideas and processes	Sound Asking relevant questions and using different types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Electricity Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Using straightforward scientific evidence to answer questions or to support their findings.
Uses & Implications of Science today and for the future	Living Things & Their Habitats Use classification keys to name unknown living things. Use fieldwork to explore human impact on the local environment e.g. litter, tree planting. Use secondary sources to find out about how environments may naturally change. Animals Including Humans Record the teeth in their mouth (make a dental record).	States of Matter Observe the changes when making cooking. Find out about the water cycle.	Sound Explore making sounds with a range of objects, such as musical instruments and other household objects. Demonstrate how to increase or decrease pitch and volume Electricity Construct a range of circuits. Explore which materials can be used instead of wires to make a circuit.

CONCEPTUAL SCHOOL AMBITION DRIVERS

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

Science – AUTUMN 1 YEAR 4

HUMANITY - Fairness

Scientific Knowledge & Understanding Science Enquiry & Working Scientifically Uses & Implications of Science today and for the future

Is it fair that hedgerows are destroyed for development opportunities?

	NC	CUMWHINTON CURRICULUM
Finding out (Facts & knowledge)	Recognise that living things can be grouped in a variety of ways Recognise that environments can change and that this can sometimes pose dangers to living things Identifying differences, similarities or changes related to simple scientific ideas and processes Use secondary sources to find out about how environments may naturally change	Compare and contrast the living things observed. Pupils could begin to put vertebrate animals into groups, for example: fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. Mammals are warm-blooded, their young drink their mother's milk, Humans are mammals, they have hair or fur and give birth to live young. Amphibians are cold-blooded, live on land and in the water, lay eggs, have moist skin and have webbed feet. Reptiles are cold-blooded, have scales not fur, have ear holes, not ears and have dry skin. Fish are cold-blooded, live in water, have fins not Legs, have gills instead of lungs, to breathe under water and lay their eggs in water. Birds are warm-blooded, have a beak, have wings, have feathers and have two legs. Insects are cold-blooded, have two antennae, live in colonies, mostly insects hatch from eggs. A spider is not an insect. Pupils should explore possible ways of grouping a wide selection of living things that include animals, flowering plants and non-flowering plants. How can environments change over time? How does this effect animals? They should identify how the habitat changes throughout the year. Classify living things found in different habitats based on their features. Use secondary sources to find out about human impact, both positive and negative, on environments.
Using (Applying & analysing)	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Use classification keys to name unknown living things. Use fieldwork to explore human impact on the local environment e.g. litter, tree planting.	Create a simple identification key based on observable features. Give the children different types of animals and ask them to sort them. Give the children animals which hare unknown to them to sort using classification charts Use a labelled diagram to sort animals – flow chart style How do humans effect their local environments? Walk around the village – observe signs of humans, list positive and negative effects. Design posters/ a class campaign to tackle a negative effect of human (posters for littering, or cleaning up after your dog, for example) Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation. Pupils should use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat.
Concluding (Evaluating & summarising)	Use fieldwork to explore human impact on the local environment e.g. litter, tree planting	Summarise info on how to classify animals into concise posters for display Present information based on human impact on our local environment summarising into a poster or presentation to the class (or the Children's Leadership Team)

Science – AUTUMN 2 YEAR 4
HUMANITY - Fairness

Scientific Knowledge & Understanding Science Enquiry & Working Scientifically Uses & Implications of Science today and for the future

Is it fair to destroy hedgerows to build in our village?

	NC	CUMWHINTON CURRICULUM
Finding out (Facts & knowledge)	Animals Including Humans Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions	Identify and describe the functions of the basic parts of the human digestive system. (Mouth, oesophagus, liver, stomach, small intestine large intestine, rectum, anus) Explore eating different types of food to identify which teeth are being used for cutting, tearing and grinding (chewing). Classify animals as herbivores, carnivores or omnivores according to the type of teeth they have in their skulls. Identify similarities & differences.
Using (Applying & analysing)	Construct and interpret a variety of food chains, identifying producers, predators and prey Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Identifying differences, similarities or changes related to simple scientific ideas and processes Record the teeth in their mouth (make a dental record).	Create food chains based on British and Worldwide animals, clearly label predators and prey Create a model of the digestive system using household objects. Record this using photographs, diagrams, label these clearly. Use diagrams or a model to describe the journey of food through the body explaining what happens in each part Use food chains to identify producers, predators and prey within a habitat. Draw a diagram of the teeth in their mouth (make a dental record).
Concluding (Evaluating & summarising)		Summarise knowledge of the digestive system Create clear posters/ presentations summarising knowledge to share with peers/ the school