

Cumwhinton School Curriculum - Science Y4 SUM

Year 4	NC Content	<p>Living things and their habitats Pupils should be taught to:</p> <ul style="list-style-type: none">• 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 <p>Animals, including humans Pupils should be taught to:</p> <ul style="list-style-type: none">• 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 <p>States of matter Pupils should be taught to:</p> <ul style="list-style-type: none">• 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 <p>Sound Pupils should be taught to:</p> <ul style="list-style-type: none">• 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 <p>Electricity Pupils should be taught to:</p> <ul style="list-style-type: none">• 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
-----------	---------------	---

Mapping across the Year

	AUTUMN	SPRING	SUMMMER
<p>Scientific Knowledge & Understanding</p>	<p><u>Living Things & Their Habitats</u> 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</p> <p><u>Animals Including Humans</u> 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</p>	<p><u>States of Matter</u> 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</p>	<p><u>Sound</u> 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</p> <p><u>Electricity</u> 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</p>
<p>Science Enquiry & Working Scientifically</p>	<p>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)</p>	<p>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</p>	<p>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.</p>
<p>Uses & Implications of Science today and for the future</p>	<p>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).</p>	<p>States of Matter Observe the changes when making cooking. Find out about the water cycle.</p>	<p>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.</p>

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

Science - SUMMER 1 YEAR 4

THE WORLD - Equality

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

How can we make sure school is fair for children with hearing impairment?

	NC	CUMWHINTON CURRICULUM
Finding out (Facts & Knowledge)	<p>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 Demonstrate how to increase or decrease pitch and volume</p>	<p>How are sounds made? Identify the different ways. Define the term vibration. Share video https://www.bbc.co.uk/teach/class-clips-video/music--science-ks2-what-is-sound/zbnmhbk</p> <p>How can we increase or decrease pitch and volume? Demonstrate this with your voice and an instrument.</p>
Using (Applying & analysing)	<p>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 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 Explore making sounds with a range of objects, such as musical instruments and other household objects.</p>	<p>Investigation into pitch. Use different instruments and define pitch. How do you change the pitch of an instrument? Is there a link between volume and the strength of the vibrations? Can we find any real examples of this? How can we prove that sounds get fainter the further we travel from them?</p> <p>Ask relevant questions (about the above questions) Set up practical investigations Make observations, taking measurements where appropriate</p> <p>Investigation into sound. Explore making sounds with a variety of musical instruments and household objects.</p>
Concluding (Evaluating & summarising)	<p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>See investigations above</p>

Science - SUMMER 2 YEAR 4

THE WORLD - Equality

How could not having electricity affect people's lives?

	NC	CUMWHINTON CURRICULUM
<p>Finding out (Facts & knowledge)</p>	<p><u>Electricity</u> Identify common appliances that run on electricity 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</p>	<p>What appliances do you know that need electricity? How is electricity turned on? How are devices turned on? What is a switch? Make a simple circuit containing a switch, or show a diagram - how does the switch work? Share a switch from a circuit. What is a conductor? - Why do we need conductors? What is an insulator? - Why do we need insulators?</p>
<p>Using (Applying & analysing)</p>	<p>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 Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Construct a range of circuits. Explore which materials can be used instead of wires to make a circuit.</p>	<p>Make simple circuits. Name the parts in a circuit - label accurately using scientific icons for the parts Make simple circuits, predict whether the bulb will light. Investigation into circuits - do 2 bulbs light up with one battery? How many batteries do you need to light 5 bulbs? And similar. Make a range of circuits, investigate changing the number of batteries, number of bulbs, etc How can we construct our own wires? Investigation.</p>
<p>Concluding (Evaluating & summarising)</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings.</p>	<p>Address/ answer the question for the topic - give evidence from learning</p>