

Cumwhinton School Curriculum – Science Y6 SPR

Year 6	NC Content	<p><u>Living things and their habitats</u> describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics</p> <p><u>Animals including humans</u> identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans</p> <p><u>Evolution and inheritance</u> recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> <p><u>Light</u> recognise that light appears to travel in straight lines use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p> <p><u>Electricity</u> associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram</p>
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Science

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	<p><u>Animals including Humans</u> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans <u>Living Things & Their Habitats</u> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics</p>	<p><u>Evolution & Inheritance</u> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution <u>Light</u> Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p>	<p><u>Electricity</u> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram</p>

<p>Science Enquiry & Working Scientifically</p>	<p>1. Animals including Humans Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Using test results to make predictions to set up further comparative and fair tests</p> <p>2. Living Things & Their Habitats Recording data and results of increasing complexity using scientific diagrams and labels, classification keys Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	<p>1. Evolution & Inheritance Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations Identifying scientific evidence that has been used to support or refute ideas or arguments</p> <p>2. Light Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, tables, scatter graphs, bar and line graphs</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p>	<p>Electricity Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p>
<p>Uses & Implications of Science today and for the future</p>	<p>1. Animals including Humans fair test - effect of different activities on my pulse rate pattern seeking - exploring which groups of people may have higher or lower resting pulse rates observation over time - how long does it take my pulse rate to return to my resting pulse rate (recovery rate) pattern seeking - exploring recovery rate for different groups of people. Research the negative effects of drugs (e.g. tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.</p> <p>2. Living Things & Their Habitats Use information about the characteristics of an unknown animal or plant to assign it to a group. Classify plants and animals, presenting this in a range of ways e.g. Venn diagrams, Carroll diagrams and keys.</p>	<p>1. Evolution & Inheritance Identify features in animals and plants that are passed onto offspring and explore this process by considering the artificial breeding of animals or plants e.g. dogs. Compare the ideas of Charles Darwin and Alfred Wallace on evolution. Identify ideas that support current arguments.</p> <p>2. Light Explain these processes using models or diagrams and graphs. Can predict and explain, with diagrams or models as appropriate, how the shape of shadows can be varied.</p>	<p>Electricity Can devise ways to measure brightness of bulbs, speed of motors, volume of a buzzer during a fair test</p>

CONCEPTUAL SCHOOL AMBITION DRIVERS

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

Science - Spring 1 YEAR 6

INNOVATION - Resilience

Scientific Knowledge & Understanding

Science Enquiry & Working Scientifically

Uses & Implications of Science today and for the future

How have we evolved?

	NC	CUMWHINTON CURRICULUM
<p>Finding out (Facts & knowledge)</p>	<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>	<ul style="list-style-type: none"> • Examine fossil evidence supporting the idea of evolution. • Explain how human evolution has occurred and compare modern humans with those of the same genus and family. • Understand that adaptation and evolution is not a uniform process for all living things. • Give examples of selective and cross breeding. • Discuss the concept of inheritance •
<p>Using (Applying & analysing)</p>	<p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	<p>identify evidence for evolution from fossil records</p>
<p>Concluding (Evaluating & summarising)</p>	<p>Identify features in animals and plants that are passed onto offspring and explore this process by considering the artificial breeding of animals or plants e.g. dogs.</p> <p>Compare the ideas of Charles Darwin and Alfred Wallace on evolution. Identify ideas that support current arguments.</p>	<p>Cross-breeding of dogs eg. cockerpoo</p> <p>Study the theories of Charles Darwin and Alfred Wallace on evolution - compare similarities and differences.</p>

Science - SPRING 2 YEAR 6

INNOVATION - Resilience

Scientific Knowledge & Understanding

Science Enquiry & Working Scientifically

Uses & Implications of Science today and for the future

What factors can affect the resilience of light?

	NC	CUMWHINTON CURRICULUM
<p>Finding out (Facts & knowledge)</p>	<p>Recognise that light appears to travel in straight lines</p> <p>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p>	<p>Recognise that light appears to travel in straight lines by creating a model of light travelling.</p> <p>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye by creating a model of light travelling.</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes by creating a light documentary.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them by performing a shadow puppet show about Isaac Newton.</p> <p>Understand how mirrors reflect light, and how they can help us see objects.</p> <p>Recognise that light appears to travel in straight lines by exploring prisms and creating colour wheels.</p>
<p>Using (Applying & analysing)</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, tables, scatter graphs, bar and line graphs</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p>	<p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes by investigating how we see colours.</p> <p>Recognise that light appears to travel in straight lines by investigating the angles of incidence and reflection.</p> <p>Recognise that light appears to travel in straight lines by investigating refraction.</p> <p>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye by creating a periscope and explaining how it works.</p>
<p>Concluding (Evaluating & summarising)</p>	<p>Explain these processes using models or diagrams and graphs. Can predict and explain, with diagrams or models as appropriate, how the shape of shadows can be varied.</p>	<p>Explain /record the above investigations</p>