



Objectives:

Year 5

Year 6

Working Scientifically

1. planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
2. taking measurements, using a range of scientific equipment, with increasing accuracy and precision
3. recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs
4. using test results to make predictions to set up further comparative and fair tests
5. using simple models to describe scientific ideas
6. reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations
7. identifying scientific evidence that has been used to support or refute ideas or arguments.

Living things and their habitats

1. describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
2. describe the life process of reproduction in some plants and animals.

Animals, including humans

11. describe the changes as humans develop to old age.

Properties and changes of materials

18. compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
19. know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
20. use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
21. give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
22. demonstrate that dissolving, mixing and changes of state are reversible changes
23. explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Earth and Space

24. describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth
25. describe the Sun, Earth and Moon as approximately spherical bodies
26. use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Forces

27. explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
28. identify the effects of air resistance, water resistance and friction, that act between moving surfaces
29. recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Living things and their habitats

9. 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
10. give reasons for classifying plants and animals based on specific characteristics.

Animals, including humans

12. identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
13. recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
14. describe the ways in which nutrients and water are transported within animals, including humans.

Evolution and inheritance

15. recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
16. recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
17. identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Light

30. recognise that light appears to travel in straight lines
31. 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
32. 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
33. use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Electricity

34. associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
35. 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
36. use recognised symbols when representing a simple circuit in a diagram.

Enquiring and Planning

Testing and Presenting Evidence

Recording results/evidence

Drawing conclusions and explaining them.

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I can plan different types of scientific enquiries to answer questions, including recognising variables where necessary

I can plan different types of scientific enquiries to answer my own or others' questions, including recognising and controlling

I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of

I can take measurements, using a range of scientific equipment, including thermometers and data loggers, with increasing accuracy and

I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs,

I can report and present findings from enquiries in oral and written forms such as displays and other presentations.

I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of



<p>I can ask questions surrounding patterns I have found in data as to why something I have observed has happened.</p> <p>I can observe over time, asking pertinent questions about similarities and differences.</p>	<p>variables where necessary</p> <p>I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time</p>	<p>equipment, including thermometers and data loggers</p>	<p>precision, taking repeat readings when appropriate</p> <p>I can make my own decisions and select the most appropriate type of scientific enquiry to use and recognise how to set up a comparative and fair test.</p>	<p>I can use test results to set up further comparative and fair tests</p>	<p>bar and line graphs</p> <p>I can use test results to make predictions to set up further comparative and fair tests</p>	<p>I can use results to draw more complex conclusions, make predictions for new values and suggest improvements.</p> <p>I can use secondary sources to help interpret results seen.</p> <p>I can classify, group and present data in a series of ways to help in answering questions</p> <p>I can identify scientific evidence that has been used to support or refute ideas or arguments</p>	<p>trust in results, in oral and written forms such as displays and other presentations</p> <p>I can use results to draw more complex conclusions, make predictions for new values and suggest improvements and raise further questions.</p> <p>I can use secondary sources to help interpret results seen.</p> <p>I can develop and use keys and other information to classify and describe objects in ways to help answer questions</p> <p>I can justify and evaluate my own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources</p>
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How we achieve these

Year 5

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme: WWI	Theme: Space	Theme: Mechanisms and inventors	Theme: Mountains	Theme: Rivers	Theme: Vikings
NC Reference: Forces 27, 28, 29	NC Reference: Forces 27, 28, 29	NC Reference: Properties and Changes of Materials 18, 19, 20, 21, 22, 23	NC Reference: Properties and Changes of Materials 18, 19, 20, 21, 22, 23	NC Reference: Space 24, 25, 26	NC Reference: Animals including Humans 11 Living Things and Their Habitats 1, 2
<p>Skills:</p> <p>-I know how to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>-I know how to describe the life process of reproduction in some plants and animals</p> <p>-I know how to describe the changes as humans develop to old age</p>	<p>Skills:</p> <p>-I know how to describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>-I know how to describe the movement of the Moon relative to the Earth</p> <p>-I know how to describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>-I know how to use the idea of the Earth's rotation to explain day and</p>	<p>Skills:</p> <p>-I know how to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>-I know how to identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>-I know how to recognise that some mechanisms, including levers,</p>	<p>Skills:</p> <p>-I know how to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</p> <p>-I know how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials,</p>	<p>Skills:</p> <p>-I know how to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p>	<p>Skills:</p> <p>-I know how to recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>-I know how to demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>-I know how to explain that some changes result in the formation of new materials, and that this kind of</p>



	<p>night and the apparent movement of the sun across the sky</p> <p>-I know that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006).</p> <p>-I know that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).</p>	<p>pulleys and gears, allow a smaller force to have a greater effect</p>	<p>including metals, wood and plastic</p>		<p>change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</p>
<p>Vocabulary: Sexual reproduction Gestation Gametes Ovule Offspring Mating Fertilize Nymph Larva Germination Asexual Dispersal</p>	<p>Vocabulary: Solar system Galaxy Milky Way Celestial body Nebula Orbit Gravitational pull Elliptical</p>	<p>Vocabulary: Force Refracted Newton Descend Drag Resistance Decelerate Surface area Lubricant Pivot Load Fulcrum Effort</p>	<p>Vocabulary: Hardness Mohs scale Mineral Transparent Translucent Opaque Conductor Insulator Thermal Magnetic</p>	<p>Vocabulary: Solute Solvent Soluble Insoluble Saturated Filtration Solution Sieving Evaporation Pores</p>	<p>Vocabulary: Reversible Combustion Oxygen Carbon dioxide Fuel Acid PH scale Neutral Neutralisation Alkali</p>

Working Scientifically

Vocabulary:

As previous plus:

opinion, fact, variables, independent variable, dependent variable, controlled variable, precision, classification keys, scatter graphs, line graphs, notice relationships, support,

Year 6

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Theme: It's all Greek to Me</p> <p>Ancient Greeks Louis Pasteur Edward Jenner</p>	<p>Theme: It's electrifying</p> <p>Electricity Thomas Edison</p>	<p>Theme: Victorians Industrial Revolution Isaac Newton</p>	<p>Theme: From Dinosaurs to Now</p> <p>Mary Anning Charles Darwin</p>	<p>Theme: SATS focus</p>	<p>Theme: The Wider world trade and economics</p>
<p>NC Reference: Living Things and their Habitats 9, 10</p>	<p>NC Reference: Evolution and Inheritance 15, 16, 17</p>	<p>NC Reference: Light 18, 19, 20, 21</p>	<p>NC Reference: Electricity 22, 23, 24</p>	<p>NC Reference: SATS</p>	<p>NC Reference: Animals including Humans 12, 13, 14</p>
<p>Skills: I know how to 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 -I know how to give reasons for classifying plants and animals based on specific characteristics</p>	<p>Skills: -I know how to recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago -I know how to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents -I know how to identify how animals and plants are adapted to suit</p>	<p>Skills: -I know how to recognise that light appears to travel in straight lines -I know how to 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 -I know how to 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 -I know how to use the idea that light travels in straight</p>	<p>Skills: -I know how to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit -I know how to 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 -I know how to use recognised symbols when representing a simple circuit in a diagram</p>	<p>Skills: -</p>	<p>Skills: I know how to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood -I know how to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function -I know how to describe the ways in which nutrients and water are transported within animals, including humans</p>

UKS2 Science Progression



	their environment in different ways and that adaptation may lead to evolution	lines to explain why shadows have the same shape as the objects that cast them			
Vocabulary: vertebrates, invertebrates, classification, micro-organism, bacteria, fungus, virus, characteristic, microbe, infection, hygiene	Vocabulary: ancestor, evolution, fossil, generation, inherit, mutation, palaeontology, variation, natural selection, reproduction	Vocabulary: refract, spectrum, prism, convex, concave, filter, variable, constant, retina, pupil	Vocabulary: component, electrical conductor, electrical insulator, resistance, voltage, symbol, circuit diagram, series circuit, filament	Vocabulary:	Vocabulary: arteries, organ, pulse, veins, ventricle, circulation, lifestyle choices, nutrition, balanced diet, function, blood vessel
Working Scientifically Vocabulary: As previous plus: Systematic, causal relationships, refute, degree of trust					