

St Leonard's Science Two Year Rolling Programme

Science is linked to cross-curricular topics where possible however mostly taught discretely. St Leonard's take part in the British Science Association's Science Week each year, which follows their theme and develops children's understanding and awareness of Working Scientifically. Children are given opportunities to study scientists throughout the year; suggestions to aid this can be found in this document which are taken from the NC and the following article: https://www.ase.org.uk/system/files/journal-issue/documents/Primary%20Science%20151_0.pdf. This ensures children make links between science taught in school with the wider world and that across the two-year rolling programme, they research into a range of scientists, historical and contemporary from different backgrounds, fields, countries and of different races and gender, including those with disabilities. Also, children, charities and local visitors are incorporated. They have opportunities to research into other science-related vocations such as architects, engineers, discoverers, builders and inventors. This is to ensure children understand that science and related opportunities are accessible to all and ensures stereotypes are not a barrier, guaranteeing an inclusive and equal curriculum. This document is used alongside the Skills Progression Rolling Programme (except in the EYFS, where teaching and learning is centred around the characteristics of effective learning, taken from the EYFS framework) to ensure coverage and progression in knowledge and skills across the two-year rolling programme.

EYFS Yearly Rolling Programme for Understanding the World

ELG

The Natural World

Children at the expected level of development will:

Explore the natural world around them, making observations and drawing pictures of animals and plants.

Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Autumn 1	Spring 1	Summer 1
<p>Heroes and Heroines</p> <p>Unit 6: Superhero Materials LO: Explore collections of materials with similar and/or different properties</p> <p>Unit 13: Foods of the Season LO: Understanding the effect of the seasons on the natural world around them</p> <p>Unit 14: Into the Woods (Forest School) LO: Use all their senses in hands on exploration of natural materials. LO: Explore the natural world around them</p> <p>Unit 10: Light Magic LO: Explore how things work LO: Talk about the differences between materials and changes they notice.</p>	<p>Fabulous Forests</p> <p>Unit 12: Frozen LO: Talk about the differences between materials and changes they notice.</p> <p>Unit 16: Whatever the Weather LO: Describe what they see, hear, and feel whilst outside LO: Understanding the effect of the seasons on the natural world around them</p>	<p>Under the Sea</p> <p>Unit 15 Pirates LO: Explore and talk about different forces they can feel LO: Talk about the differences between materials and changes they notice</p> <p>Unit 1: The Potting Shed LO: Plant seeds and care for growing plants. LO: Understand the key features of the life cycle of a plant and an animal. LO: Begin to understand the need to respect and care for the natural environment and all living things.</p>
Autumn 2	Spring 2	Summer 2
<p>Once upon a time...</p> <p>Unit 6: Superhero Materials LO: Explore collections of materials with similar and/or different properties</p> <p>Unit 13: Foods of the Season LO:</p> <p>Unit 14: Into the Woods (Forest School) LO: Use all their senses in hands on exploration of natural materials.</p>	<p>Our World</p> <p>Unit 12: Frozen LO: Talk about the differences between materials and changes they notice.</p> <p>Unit 16: Whatever the Weather LO: Describe what they see, hear, and feel whilst outside LO: Understanding the effect of the seasons on the natural world around them</p>	<p>Nature Detectives</p> <p>Unit 15 Pirates LO: Explore and talk about different forces they can feel LO: Talk about the differences between materials and changes they notice</p> <p>Unit 1: The Potting Shed LO: Plant seeds and care for growing plants. LO: Understand the key features of the life cycle of a plant and an animal.</p>

LO: Explore the natural world around them

Unit 10: Light Magic

LO: Explore how things work

LO: Talk about the differences between materials and changes they notice.

LO: Begin to understand the need to respect and care for the natural environment and all living things.

YEARS 1 – 6 TWO YEAR ROLLING PROGRAMME

Wider Topic	KS1 – Heroes and Heroines		LKS2 – Invasion/Romans		UKS2 – Invasion/Anglo-Saxons	
Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	<p>Materials Monsters (Y2, Topic 2)</p> <ul style="list-style-type: none"> -identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. -find out how the shapes of solid objects made from some materials can be changes by squashing, bending, twisting and stretching. 	<p>Materials Monsters (Y2, Topic 2)</p> <ul style="list-style-type: none"> -identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. -find out how the shapes of solid objects made from some materials can be changes by squashing, bending, twisting and stretching. 	<p>Forces and Magnets (Y3, Topic 5)</p> <ul style="list-style-type: none"> -compare how things move on different surfaces. -notice that some forces need contact between two objects, but magnetic forces can act at a distance. -observe how magnets attract or repel each other and attract some materials and not others. -compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials. -describe magnets as having two poles -predict whether two magnets will attract or repel each other, depending on which way the poles are facing. 	<p>Forces and Magnets (Y3, Topic 5)</p> <ul style="list-style-type: none"> -compare how things move on different surfaces. -notice that some forces need contact between two objects, but magnetic forces can act at a distance. -observe how magnets attract or repel each other and attract some materials and not others. -compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials. -describe magnets as having two poles -predict whether two magnets will attract or repel each other, depending on which way the poles are facing. 	<p>Light (Y6, Topic 4)</p> <ul style="list-style-type: none"> -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>Light (Y6, Topic 4)</p> <ul style="list-style-type: none"> -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.

Wider Topic	KS1 – Heroes and Heroines		LKS2 – Invasion/Romans		UKS2 – Invasion/Anglo-Saxons	
Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Suggested scientists/important people	<p>Charles Macintosh – inventor of waterproof fabric.</p> <p>Contemporary – Martin Brock – works with a team to develop smart fabrics which use bendsensitive fibre-optics that are stitched inside the clothing to provide intelligent feedback for athletes without being too bulky.</p> <p>Ole Kirk Christiansen - invented Lego in 1949.</p> <p>John Boyd Dunlop - Developed inflatable rubber tyres</p> <p>Contemporary – Joe Zekoski – Goodyear engineer, mechanical engineer - Developer of the BH03 tyre, which is fitted with materials that change heat into energy to charge an electric car without the need for a charging station. When parked, sunlight heats the tyre and this heat is transformed into electricity using the thermo-electric material</p> <p>John Loudon</p>	<p>Charles Macintosh – inventor of waterproof fabric.</p> <p>Contemporary – Martin Brock – works with a team to develop smart fabrics which use bendsensitive fibre-optics that are stitched inside the clothing to provide intelligent feedback for athletes without being too bulky.</p> <p>Ole Kirk Christiansen - invented Lego in 1949.</p> <p>John Boyd Dunlop - Developed inflatable rubber tyres</p> <p>Contemporary – Joe Zekoski – Goodyear engineer, mechanical engineer - Developer of the BH03 tyre, which is fitted with materials that change heat into energy to charge an electric car without the need for a charging station. When parked, sunlight heats the tyre and this heat is transformed into electricity using the thermo-electric material</p> <p>John Loudon</p>	<p>Galileo Galilei and Isaac Newton – helped to develop the theory of gravitation.</p> <p>Contemporary - Joe Kirschvink - geophysicist https://www.sciencemag.org/news/2016/06/maverick-scientist-thinks-he-has-discovered-magnetic-sixth-sense-humans</p>	<p>Galileo Galilei and Isaac Newton – helped to develop the theory of gravitation.</p> <p>Contemporary - Joe Kirschvink - geophysicist https://www.sciencemag.org/news/2016/06/maverick-scientist-thinks-he-has-discovered-magnetic-sixth-sense-humans</p>	<p>Alhazen - Pioneer of modern optics</p> <p>Thomas Young - notable scientific contributions to the fields of vision, light, solid mechanics, energy, physiology, language, musical harmony, and Egyptology.</p> <p>Sir David Brewster – invented the kaleidoscope. https://collection.sciencemuseumgroup.org.uk/objects/co3823/brewsters-patent-kaleidoscope-by-philip-carpenter-birmingham-england-1820-kaleidoscope</p> <p>Jean Bernard Leon Foucault - He was one of the earliest scientists to attempt to measure the speed of light and he was the first to discover eddy currents. He is also credited for naming the gyroscope.</p> <p>Contemporary - Ernesta Jonkute – Nanotechnologist - Developed Vantablack®, a super-black coating that holds the world record as the darkest human-made substance. It is used in applications ranging from space-borne scientific instrumentation to luxury goods.</p>	<p>Alhazen - Pioneer of modern optics</p> <p>Thomas Young - notable scientific contributions to the fields of vision, light, solid mechanics, energy, physiology, language, musical harmony, and Egyptology.</p> <p>Sir David Brewster – invented the kaleidoscope. https://collection.sciencemuseumgroup.org.uk/objects/co3823/brewsters-patent-kaleidoscope-by-philip-carpenter-birmingham-england-1820-kaleidoscope</p> <p>Jean Bernard Leon Foucault - He was one of the earliest scientists to attempt to measure the speed of light and he was the first to discover eddy currents. He is also credited for naming the gyroscope.</p> <p>Contemporary - Ernesta Jonkute – Nanotechnologist - Developed Vantablack®, a super-black coating that holds the world record as the darkest human-made substance. It is used in applications ranging from space-borne scientific instrumentation to luxury goods.</p>

Wider Topic	KS1 – Heroes and Heroines		LKS2 – Invasion/Romans		UKS2 – Invasion/Anglo-Saxons	
Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 2	Celebrations (Y1, Topic 2) -say which part of the body is associated with each sense. -distinguish between an object and the material from which it is made. -identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. -describe the simple physical properties of a variety of everyday materials. -identify and describe the basic structure of a variety of common plants, including trees.	Celebrations (Y1, Topic 2) -say which part of the body is associated with each sense. -distinguish between an object and the material from which it is made. -identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. -describe the simple physical properties of a variety of everyday materials. -identify and describe the basic structure of a variety of common plants, including trees.	Looking at states (Year 4, Topic 3) -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. -identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Looking at states (Year 4, Topic 3) -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. -identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Material World (Year 5, Topic 2) -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. -know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. -use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. -give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. -demonstrate that dissolving, mixing and changes of state are reversible changes.	Material World (Year 5, Topic 2) -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. -know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. -use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. -give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. -demonstrate that dissolving, mixing and changes of state are reversible changes.

Wider Topic	KS1 – Heroes and Heroines		LKS2 – Invasion/Romans		UKS2 – Invasion/Anglo-Saxons	
Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Suggested scientists/important people	Discuss celebrations with visitors from different communities and backgrounds.	Discuss celebrations with visitors from different communities and backgrounds.	<p>The ancient Greeks were the first to identify three classes (what we now call states) of matter based on their observations of water. But these same Greeks, in particular the philosopher Thales (624 – 545 BCE), incorrectly suggested that since water could exist as a solid, liquid, or even a gas under natural conditions, it must be the single principal element in the universe from which all other substances are made. We now know that water is not the fundamental substance of the universe; in fact, it is not even an element.</p> <p>Joseph Priestley - discovery of carbon dioxide and oxygen.</p> <p>Bernard Palissy – discoverer of the ‘modern theory’ of the water cycle.</p> <p>Alfred Barnhard Nobel</p>	<p>The ancient Greeks were the first to identify three classes (what we now call states) of matter based on their observations of water. But these same Greeks, in particular the philosopher Thales (624 – 545 BCE), incorrectly suggested that since water could exist as a solid, liquid, or even a gas under natural conditions, it must be the single principal element in the universe from which all other substances are made. We now know that water is not the fundamental substance of the universe; in fact, it is not even an element.</p> <p>Joseph Priestley - discovery of carbon dioxide and oxygen.</p> <p>Bernard Palissy – discoverer of the ‘modern theory’ of the water cycle.</p> <p>Alfred Barnhard Nobel</p>	<p>Stephanie Kwolek - While trying to find a lighter material for car tyres, Stephanie created a very hard, but light, material called Kevlar. This invention was used in cars but also in bulletproof vests and is still used to protect the police and armed forces today.</p> <p>Contemporary – Sharon Barak created an eco-friendly plastic, 100% biodegradable https://globalshakers.com/world-shakers/sharon-barak/#:~:text=Sharon%20Barak%20is%20the%20brains,from%20packaging%2C%20food%20coverings%20tobottles.</p>	<p>Stephanie Kwolek - While trying to find a lighter material for car tyres, Stephanie created a very hard, but light, material called Kevlar. This invention was used in cars but also in bulletproof vests and is still used to protect the police and armed forces today.</p> <p>Contemporary – Sharon Barak created an eco-friendly plastic, 100% biodegradable https://globalshakers.com/world-shakers/sharon-barak/#:~:text=Sharon%20Barak%20is%20the%20brains,from%20packaging%2C%20food%20coverings%20tobottles.</p>

Wider Topic	KS1 – Fabulous Forests		LKS2 – Tomb Raiders/Egyptians		UKS2 – Rainforests/Mayans	
Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Spring 1	Polar Places (Year 1, Topic 3) -identify and name a variety of animals including fish, amphibians, reptiles, birds and mammals. -identify and name common animals that are carnivores, herbivores or omnivores. -describe and compare the structure of a variety of common animals. -describe the simple properties of a variety of everyday materials. -compare and group together a variety of everyday materials on the basis of their simple properties.	Polar Places (Year 1, Topic 3) -identify and name a variety of animals including fish, amphibians, reptiles, birds and mammals. -identify and name common animals that are carnivores, herbivores or omnivores. -describe and compare the structure of a variety of common animals. -describe the simple properties of a variety of everyday materials. -compare and group together a variety of everyday materials on the basis of their simple properties.	How does your garden grow? (Y3, Topic 4) -identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers -explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. -investigate the way in which water is transported within plants. -explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	How does your garden grow? (Y3, Topic 4) -identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers -explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. -investigate the way in which water is transported within plants. -explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Circle of Life (Y5, Topic 3) -describe the differences in life cycles of a mammal, an amphibian, an insect and a bird. -describe the life process of a reproduction in some plants and animals.	Circle of Life (Y5, Topic 3) -describe the differences in life cycles of a mammal, an amphibian, an insect and a bird. -describe the life process of a reproduction in some plants and animals.
Suggested scientists/important people	David Attenborough - Naturalist and broadcaster George Mottershead - founded Chester Zoo in 1931. This zoo was unusual at the time as the animals did not live in cages. They lived in larger enclosures.	David Attenborough - Naturalist and broadcaster George Mottershead - founded Chester Zoo in 1931. This zoo was unusual at the time as the animals did not live in cages. They lived in larger enclosures.	George Washington Carver – a black American inventor and agricultural scientist who discovered ways to help farmers in the USA’s Deep South to grow their crops successfully. Rachel Carson - Founder of environmental science – danger of pesticides. Contemporary – Alison Wakeman – local ‘Bee Lady.	George Washington Carver – a black American inventor and agricultural scientist who discovered ways to help farmers in the USA’s Deep South to grow their crops successfully. Rachel Carson - Founder of environmental science – danger of pesticides. Contemporary – Alison Wakeman – local ‘Bee Lady.	Jane Goodall – primatologist – has ‘facial blindness.’ https://www.sciencebuddies.org/blog/stem-is-for-everyone-jane-goodall?from=Blog Contemporary - Sarah Fowler OBE Marine biologist - Sarah’s research identified the global threat to sharks and shares strategies of how we can protect them. David Attenborough - Naturalist and broadcaster	Jane Goodall – primatologist – has ‘facial blindness.’ https://www.sciencebuddies.org/blog/stem-is-for-everyone-jane-goodall?from=Blog Contemporary - Sarah Fowler OBE Marine biologist - Sarah’s research identified the global threat to sharks and shares strategies of how we can protect them. David Attenborough - Naturalist and broadcaster

Wider Topic	KS1 – Fabulous Forests		LKS2 – Tomb Raiders/Egyptians		UKS2 – Rainforests/Mayans	
Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Spring 2	Who Am I? (Y1, Topic 1) -identify, name, draw and label the basic parts of the human body. -say which part of the body is associated with each sense.	Who Am I? (Y1, Topic 1) -identify, name, draw and label the basic parts of the human body. -say which part of the body is associated with each sense.	Living Things (Y4, Topic 2) -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.	Living Things (Y4, Topic 2) -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.	Classifying Living Things (Y6, Topic 1) -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.	Classifying Living Things (Y6, Topic 1) -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.
Suggested scientists/important people	Speak to a visitor who has lost a sense, e.g. their hearing, sight, smell etc.	Speak to a visitor who has lost a sense, e.g. their hearing, sight, smell etc.	Jane Goodall – Primatologist Contemporary - Seirian Sumner - Evolutionary biologist and behavioural ecologist - Specialises in social evolution and social behaviour in insects (bees, wasps and ants). Carl Linnaeus – developed the modern system of classifying and naming organisms. https://www.nhm.ac.uk/research-curation/scientific-resources/collections/botanical-collections/linnaeus-link/index.html	Jane Goodall – Primatologist Contemporary - Seirian Sumner - Evolutionary biologist and behavioural ecologist - Specialises in social evolution and social behaviour in insects (bees, wasps and ants). Carl Linnaeus – developed the modern system of classifying and naming organisms. https://www.nhm.ac.uk/research-curation/scientific-resources/collections/botanical-collections/linnaeus-link/index.html	Carl Linnaeus - Developed the modern system of classifying and naming organisms Lucy Evelyn Cheesman https://www.nhm.ac.uk/discover/lucy-evelyn-cheesman.html Sir Hans Sloane http://encyclopedia.kids.net.au/page/Si/Sir_Hans_Sloane Gilbert White http://encyclopedia.kids.net.au/page/Si/Sir_Hans_Sloane Contemporary – Chris Nelson – Horticulturalist. Horticultural Director of Growing Underground, which uses hydroponic techniques to grow pesticide-free crops in a former central London underground air-raid shelter. Typically green herbs and salad leaves such as pea shoots, coriander, and red amaranth are grown. The plants grow on mats made from recycled carpet, are watered mechanically and lit by ultraviolet light itself powered by renewable electricity sources.	Carl Linnaeus - Developed the modern system of classifying and naming organisms Lucy Evelyn Cheesman https://www.nhm.ac.uk/discover/lucy-evelyn-cheesman.html Sir Hans Sloane http://encyclopedia.kids.net.au/page/Si/Sir_Hans_Sloane Gilbert White http://encyclopedia.kids.net.au/page/Si/Sir_Hans_Sloane Contemporary – Chris Nelson – Horticulturalist. Horticultural Director of Growing Underground, which uses hydroponic techniques to grow pesticide-free crops in a former central London underground air-raid shelter. Typically green herbs and salad leaves such as pea shoots, coriander, and red amaranth are grown. The plants grow on mats made from recycled carpet, are watered mechanically and lit by ultraviolet light itself powered by renewable electricity sources.

Wider Topic	KS1 – Important People & Events		LKS2 – Journeys/Places/Transport		UKS2 – Grand Designs/Olympics	
Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Summer 1	Healthy Me (Y2, Topic 1) -describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. -notice that animals, including humans, have offspring which grow into adults.	Healthy Me (Y2, Topic 1) -describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. -notice that animals, including humans, have offspring which grow into adults.	Light and Shadows (Topic 3, Y3) -recognise that we need light in order to see things and that dark is the absence of light. -notice that light is reflected from surfaces. -recognise that light from the Sun can be dangerous and that there are ways to protect our eyes. -recognise that shadows are formed when the light from a light source is blocked by a solid object. -find patterns in the way that the sizes of shadows change.	Light and Shadows (Topic 3, Y3) -recognise that we need light in order to see things and that dark is the absence of light. -notice that light is reflected from surfaces. -recognise that light from the Sun can be dangerous and that there are ways to protect our eyes. -recognise that shadows are formed when the light from a light source is blocked by a solid object. -find patterns in the way that the sizes of shadows change.	Electricity (Topic 5, Y6) -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.	Electricity (Topic 5, Y6) -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.
Suggested scientists/important people	https://www.bbc.co.uk/bitesize/topics/zv4cwmn/resources/1	https://www.bbc.co.uk/bitesize/topics/zv4cwmn/resources/1	Ferdinand Monoyer - Anyone who has had an eye test will have been asked to read rows of letters, which become progressively smaller and harder to recognise, by their optician. This eye test chart was first invented by Ferdinand Monoyer, a French ophthalmologist. Isaac Newton was one of the advocates of the ‘corpuscular’ theory and performed experiments on light towards the end of the 17th century. Perhaps the most famous was his experiment with sunlight and prisms where he showed that white light is composed of many colours, and that each individual colour could not be used to recreate white light or be broken down further. He also performed rather frightening experiments on himself to study the perception of light by his eyes.	Ferdinand Monoyer - Anyone who has had an eye test will have been asked to read rows of letters, which become progressively smaller and harder to recognise, by their optician. This eye test chart was first invented by Ferdinand Monoyer, a French ophthalmologist. Isaac Newton was one of the advocates of the ‘corpuscular’ theory and performed experiments on light towards the end of the 17th century. Perhaps the most famous was his experiment with sunlight and prisms where he showed that white light is composed of many colours, and that each individual colour could not be used to recreate white light or be broken down further. He also performed rather frightening experiments on himself to study the perception of light by his eyes.	Nicolas Tesla and Thomas Edison - Battled over competing electric power transmission systems (a/c and d/c) and developed the electric light bulb. Benjamin Franklin http://www.bbc.co.uk/history/historic_figures/franklin_benjamin.shtml Charles Coulomb https://www.famousscientists.org/charles-augustin-de-coulomb/ Alessandro Volta https://kids.kiddle.co/Alessandro_Volta Andre Marie Ampere Contemporary - Peter Rawlinson – engineer - Working on the development of electric vehicles, providing clear vision for a highly differentiated, next generation product	Nicolas Tesla and Thomas Edison - Battled over competing electric power transmission systems (a/c and d/c) and developed the electric light bulb. Benjamin Franklin http://www.bbc.co.uk/history/historic_figures/franklin_benjamin.shtml Charles Coulomb https://www.famousscientists.org/charles-augustin-de-coulomb/ Alessandro Volta https://kids.kiddle.co/Alessandro_Volta Andre Marie Ampere Contemporary - Peter Rawlinson – engineer - Working on the development of electric vehicles, providing clear vision for a highly differentiated, next generation product

Wider Topic	KS1 – Important People & Events		LKS2 – Journeys/Places/Transport		UKS2 – Grand Designs/Olympics	
Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Summer 2	Little Master Chefs (Y2, Topic 6) -find out about and describe the basic needs of humans for survival (water, food and air) -describe the importance for humans of eating the right amounts of different types of food, and hygiene. -observe and describe how seeds and bulbs grow into mature plants. -identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Little Master Chefs (Y2, Topic 6) -find out about and describe the basic needs of humans for survival (water, food and air) -describe the importance for humans of eating the right amounts of different types of food, and hygiene. -observe and describe how seeds and bulbs grow into mature plants. -identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	The Big Build (Topic 6, Y4) -ask relevant questions and use different types of scientific enquiries to answer them. -set up simple practical enquiries, comparative and fair tests. -make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. -gather, record, classify and present data in a variety of ways to help in answering questions.	The Big Build (Topic 6, Y4) -ask relevant questions and use different types of scientific enquiries to answer them. -set up simple practical enquiries, comparative and fair tests. -make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. -gather, record, classify and present data in a variety of ways to help in answering questions.	Amazing Changes (Topic 6, Y5) -demonstrate that dissolving, mixing and changes of state are reversible changes. -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.	Amazing Changes (Topic 6, Y5) -demonstrate that dissolving, mixing and changes of state are reversible changes. -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.
Suggested scientists/important people	Chefs: Joe Wicks Mary Berry Nadiya Hussain Lorraine Pascale Nigella Lawson	Chefs: Joe Wicks Mary Berry Nadiya Hussain Lorraine Pascale Nigella Lawson	Engineers: Isambard Kingdom Brunel Gustave Eiffel – Eiffel tower Architects and builders: Antoni Gaudi – Catalan architect. Sir Christopher Wren – architect and many other science related fields. Michelangelo Renzo Piano – the Shard, London	Engineers: Isambard Kingdom Brunel Gustave Eiffel – Eiffel tower Architects and builders: Antoni Gaudi – Catalan architect. Sir Christopher Wren – architect and many other science related fields. Michelangelo Renzo Piano – the Shard, London	Spencer Silver - Inventor of the glue for Post-it® notes Ruth Benerito – invented wrinkle-free cotton Margaret Knight - After seeing a fellow worker injured by a faulty piece of equipment, Knight came up with her first invention: a safety device for textile looms. She was awarded her first patent in 1871, for a machine that cut, folded and glued flat-bottomed paper shopping bags, thus	Spencer Silver - Inventor of the glue for Post-it® notes Ruth Benerito – invented wrinkle-free cotton Margaret Knight - After seeing a fellow worker injured by a faulty piece of equipment, Knight came up with her first invention: a safety device for textile looms. She was awarded her first patent in 1871, for a machine that cut, folded and glued flat-bottomed paper shopping bags, thus

			<p>Look @ Severn Valley Railway. Look @ architecture in Bridgnorth.</p>	<p>Look @ Severn Valley Railway. Look @ architecture in Bridgnorth.</p>	<p>eliminating the need for workers to assemble them slowly by hand. Contemporary – Joe Keddie - Professor of Soft Matter Physics - Professor Keddie is interested in fundamental processes in soft matter, especially polymer thin films and nanoparticles. He researches into the nanostructure of pressure-sensitive adhesives.</p>	<p>thus eliminating the need for workers to assemble them slowly by hand. Contemporary – Joe Keddie - Professor of Soft Matter Physics - Professor Keddie is interested in fundamental processes in soft matter, especially polymer thin films and nanoparticles. He researches into the nanostructure of pressure-sensitive adhesives.</p>
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Wider Topic	KS1 – Around the World		LKS2 – Life on Earth		UKS2 – Heroes and Heroines	
Cycle 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Squash, Bend, Twist and Stretch (Topic 3, Y2) -find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Squash, Bend, Twist and Stretch (Topic 3, Y2) -find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Food and our Bodies (Topic 2, Y3) -identify that animals, including humans, need the right types and amount of nutrition and that they cannot make their own food: they get nutrition from what they eat. -identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Food and our Bodies (Topic 2, Y3) -identify that animals, including humans, need the right types and amount of nutrition and that they cannot make their own food: they get nutrition from what they eat. -identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Growing Up and Growing Old (Topic 5, Y5) -describe the changes as humans develop to old age.	Growing Up and Growing Old (Topic 5, Y5) -describe the changes as humans develop to old age.
Suggested scientists/important people	Ole Kirk Christiansen - invented Lego in 1949. Stephen Perry – invented elastic rubber band.	Ole Kirk Christiansen - invented Lego in 1949. Stephen Perry – invented elastic rubber band.	Research: https://www.nutrition.org.uk/nutritionscience.html Vesalius - regarded as the founder of modern anatomy, authored the book De humani corporis fabrica, which contained many illustrations of the skeleton and other body parts, correcting some theories dating from Galen, such as the lower jaw being a single bone instead of two. Contemporary research – how modern life is changing the human skeleton. https://www.bbc.com/future/article/20190610-how-modern-life-is-transforming-the-human-skeleton	Research: https://www.nutrition.org.uk/nutritionscience.html Vesalius - regarded as the founder of modern anatomy, authored the book De humani corporis fabrica, which contained many illustrations of the skeleton and other body parts, correcting some theories dating from Galen, such as the lower jaw being a single bone instead of two. Contemporary research – how modern life is changing the human skeleton. https://www.bbc.com/future/article/20190610-how-modern-life-is-transforming-the-human-skeleton	18th-century Swiss mathematician Leonhard Euler - fundamental insight that underlies all wrinkle physics today: A deformed sheet adopts the shape that minimizes its total bending energy. Contemporary inventors – modern tech devices for people in old age. https://www.cnn.com/2019/09/12/7-new-tech-devices-for-that-help-seniors-live-happier-healthier-lives.html	18th-century Swiss mathematician Leonhard Euler - fundamental insight that underlies all wrinkle physics today: A deformed sheet adopts the shape that minimizes its total bending energy. Contemporary inventors – modern tech devices for people in old age. https://www.cnn.com/2019/09/12/7-new-tech-devices-for-that-help-seniors-live-happier-healthier-lives.html

Wider Topic	KS1 – Around the World		LKS2 – Life on Earth		UKS2 – Heroes and Heroines	
Cycle 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 2	Our Local Environment (Topic 4, Y2) -explore and compare the differences between things that are living, dead and things that have never been alive. -identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. -identify and name a variety of plants and animals in their habitats, including micro-habitats. -describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	Our Local Environment (Topic 4, Y2) -explore and compare the differences between things that are living, dead and things that have never been alive. -identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. -identify and name a variety of plants and animals in their habitats, including micro-habitats. -describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	Teeth and Eating (Topic 4, Y4) -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.	Teeth and Eating (Topic 4, Y4) -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.	Healthy Bodies (Topic 2, Y6) -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.	Healthy Bodies (Topic 2, Y6) -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.
Suggested scientists/important people	Charles Darwin Contemporary – David Attenborough	Charles Darwin Contemporary – David Attenborough	Timeline of dentistry: https://bda.org/museum/the-story-of-dentistry/timeline Pierre Fauchard , a French surgeon credited as the Father of Modern Dentistry. Charles Elton https://www.britannica.com/biography/Charles-Elton	Timeline of dentistry: https://bda.org/museum/the-story-of-dentistry/timeline Pierre Fauchard , a French surgeon credited as the Father of Modern Dentistry. Charles Elton https://www.britannica.com/biography/Charles-Elton	William Harvey http://www.bbc.co.uk/history/historic_figures/harvey_william.shtml Karl Landsteiner https://kids.kiddle.co/Karl_Landsteiner Christiaan Barnard http://encyclopedia.kids.net.au/page/ch/Christiaan_Barnard	William Harvey http://www.bbc.co.uk/history/historic_figures/harvey_william.shtml Karl Landsteiner https://kids.kiddle.co/Karl_Landsteiner Christiaan Barnard http://encyclopedia.kids.net.au/page/ch/Christiaan_Barnard

Wider Topic	KS1 – Earth and Beyond		LKS2 - Our World and Beyond		UKS2 - Bookworm	
Cycle 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Spring 1	Young Gardeners (Topic 5, Y2) -observe and describe how seeds and bulbs grow into mature plants. -find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Young Gardeners (Topic 5, Y2) -observe and describe how seeds and bulbs grow into mature plants. -find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Rocks, Soils and Fossils (Topic 1, Y3) -compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. -describe in simple terms how fossils are formed when things that have lives are trapped within rock. -recognise that soils are made from rocks and organic matter.	Rocks, Soils and Fossils (Topic 1, Y3) -compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. -describe in simple terms how fossils are formed when things that have lives are trapped within rock. -recognise that soils are made from rocks and organic matter.	Out of this World (Topic 1, Y5) -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. -describe the Sun, Earth and Moon as roughly spherical bodies. -Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.	Out of this World (Topic 1, Y5) -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. -describe the Sun, Earth and Moon as roughly spherical bodies. -Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.
Suggested scientists/Im portant people	Contemporary - Speak to/meet a local gardener .	Contemporary - Speak to/meet a local gardener .	Mary Anning – Palaeontologist and fossil collector William Smith - was an English geologist, who created the first nationwide geological map. Contemporary – Holly Betts – Holly is researching whether fossils are best for establishing a timescale for recent and ancient episodes in our evolutionary history Geerat Vermeij - a Paleocologist who is Blind	Mary Anning – Palaeontologist and fossil collector William Smith - was an English geologist, who created the first nationwide geological map. Contemporary – Holly Betts – Holly is researching whether fossils are best for establishing a timescale for recent and ancient episodes in our evolutionary history Geerat Vermeij - a Paleocologist who is Blind	Nicolaus Copernicus - Proposed that the Sun was the centre of our universe. Galileo Galilei - Scientist Galileo Galilei was born in 1564 and became famous for his work on mathematics and astronomy. He developed the telescope to enable close observation of the night sky and was famously imprisoned for his (correct) theory that the sun was at the centre of the universe. Helen Sharman - first British woman astronaut. Contemporary – Maggie Aderin-Pocock – Astronomer and science communicator - She is working on and managing the observation instruments for the Aeolus satellite, which will measure wind speeds to help the investigation of climate change.	Nicolaus Copernicus - Proposed that the Sun was the centre of our universe. Galileo Galilei - Scientist Galileo Galilei was born in 1564 and became famous for his work on mathematics and astronomy. He developed the telescope to enable close observation of the night sky and was famously imprisoned for his (correct) theory that the sun was at the centre of the universe. Helen Sharman - first British woman astronaut. Contemporary – Maggie Aderin-Pocock – Astronomer and science communicator - She is working on and managing the observation instruments for the Aeolus satellite, which will measure wind speeds to help the investigation of climate change.

Wider Topic	KS1 – Earth and Beyond		LKS2 - Our World and Beyond		UKS2 - Bookworm	
Cycle 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Spring 2	On Safari (Topic 5, Y1) -identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -identify and name a variety of common animals that are carnivores, herbivores or omnivores. -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	On Safari (Topic 5, Y1) -identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -identify and name a variety of common animals that are carnivores, herbivores or omnivores. -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	What's That Sound? (Topic 1, Y4) -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.	What's That Sound? (Topic 1, Y4) -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.	Evolution and Inheritance (Topic 3, Y6) -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.	Evolution and Inheritance (Topic 3, Y6) -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.
Suggested scientists/important people	Alison Wakeman – local bee lady.	Alison Wakeman – local bee lady.	Robert Boyle Ernst Mach Heinrich Hertz Alexander Graham Bell Thomas Edison Emile Berliner Guglielmo Marconi	Robert Boyle Ernst Mach Heinrich Hertz Alexander Graham Bell Thomas Edison Emile Berliner Guglielmo Marconi	Alfred Russel Wallace and Charles Darwin – Proponents of evolution by natural selection Contemporary - Professor Nazneen Rahman - Human geneticist – Her research involves identifying genes and genetic factors that increase the risk of cancers developing and she has used this research to develop clinical improvements in patient care. Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.	Alfred Russel Wallace and Charles Darwin – Proponents of evolution by natural selection Contemporary - Professor Nazneen Rahman - Human geneticist – Her research involves identifying genes and genetic factors that increase the risk of cancers developing and she has used this research to develop clinical improvements in patient care. Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.

Wider Topic	KS1 – Seaside		LKS2 – Extreme Environments		UKS2 – War and Peace	
Cycle 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Summer 1	Plants and Animals Where We Live (Topic 4, Y1) -identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. -identify and describe the basic structure of a variety of common flowering plants, including trees. -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -identify and name a variety of common animals that are carnivores, herbivores or omnivores. -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Plants and Animals Where We Live (Topic 4, Y1) -identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. -identify and describe the basic structure of a variety of common flowering plants, including trees. -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -identify and name a variety of common animals that are carnivores, herbivores or omnivores. -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Power It Up (Topic 5, Y4) -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 that some common conductors and insulators and associate metals with being good conductors.	Power It Up (Topic 5, Y4) -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 that some common conductors and insulators and associate metals with being good conductors.	Let's Get Moving (Topic 4, Y5) -explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. -identify the effects of air resistance, water resistance and friction, that act between moving surfaces. -recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Let's Get Moving (Topic 4, Y5) -explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. -identify the effects of air resistance, water resistance and friction, that act between moving surfaces. -recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
Suggested scientists/important people	Alison Wakeman – local bee lady.	Alison Wakeman – local bee lady.	Benjamin Franklin http://www.ducksters.com/biography/ben franklin.php Charles Augustin Coulomb http://www.physics4kids.com/files/elec_coulomb.html Alessandro Volta Andre Marie Ampere http://www.famousScientists.org/andre-marie-ampere/	Benjamin Franklin http://www.ducksters.com/biography/ben franklin.php Charles Augustin Coulomb http://www.physics4kids.com/files/elec_coulomb.html Alessandro Volta Andre Marie Ampere http://www.famousScientists.org/andre-marie-ampere/	Galileo Galilei and Isaac Newton – helped to develop the theory of gravitation. The Wright Brothers from America – first people to build and fly an aeroplane with an engine. Contemporary – Emma England – aerospace engineer. Emma works with a team to design the wings of aircrafts. The first 2 scientists may have been introduced in Y4.	Galileo Galilei and Isaac Newton – helped to develop the theory of gravitation. The Wright Brothers from America – first people to build and fly an aeroplane with an engine. Contemporary – Emma England – aerospace engineer. Emma works with a team to design the wings of aircrafts. The first 2 scientists may have been introduced in Y4.

Wider Topic	KS1 – Seaside		LKS2 – Extreme Environments		UKS2 – War and Peace	
Cycle 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Summer 2	Holiday (Topic 6, Y1) -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -identify and name a variety of common animals that are carnivores, herbivores or omnivores. -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). -distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock. -describe the simple physical properties of a variety of everyday materials.	Holiday (Topic 6, Y1) -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -identify and name a variety of common animals that are carnivores, herbivores or omnivores. -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). -distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock. -describe the simple physical properties of a variety of everyday materials.	The Nappy Challenge (Topic 6, Y3) -make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. -gather, record, classify and present data in a variety of ways to help in answering questions. -ask relevant questions and use different types of scientific enquiries to answer them. -use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	The Nappy Challenge (Topic 6, Y3) -make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. -gather, record, classify and present data in a variety of ways to help in answering questions. -ask relevant questions and use different types of scientific enquiries to answer them. -use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	The Titanic (Topic 6, Y6) -plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. -take measurements, use a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.	The Titanic (Topic 6, Y6) -plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. -take measurements, use a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.
Suggested scientists/important people	A charity of children against plastic: https://www.kidsagainstoplastic.co.uk/	A charity of children against plastic: https://www.kidsagainstoplastic.co.uk/	Use what they have learned about scientists and the way they work to influence theirs. Invite a local supermarket worker to school to explain	Use what they have learned about scientists and the way they work to influence theirs. Invite a local supermarket worker to school to explain	Use what they have learned about scientists and the way they work to influence theirs. History of hypothermia - The best known was John Hunter who starting experiments in 1766 to try to discover whether	Use what they have learned about scientists and the way they work to influence theirs. History of hypothermia - The best known was John Hunter who starting experiments in 1766 to try to discover whether

			<p>how many disposable nappies are sold in a year. Look at plastic pollution and climate change scientists/research.</p> <p>Example of research: https://www.nationalgeographic.com/science/article/plastic-pollution-huge-problem-not-too-late-to-fix-it Understand the impact children and a charity they created are having on this cause: https://www.kidsagainstplastic.co.uk/</p>	<p>how many disposable nappies are sold in a year. Look at plastic pollution and climate change scientists/research.</p> <p>Example of research: https://www.nationalgeographic.com/science/article/plastic-pollution-huge-problem-not-too-late-to-fix-it Understand the impact children and a charity they created are having on this cause: https://www.kidsagainstplastic.co.uk/</p>	<p>exposed to extreme cold could recover when their temperature was raised again. The first experiments on humans also started at the end of the 18th century.</p> <p>Read 'Jack Thayer's story' (see the Useful Website list on My Rising Stars) a survivor's account from the Titanic. Jack Thayer was a 17-year-old who was in a lifeboat and watched the Titanic sink.</p> <p>Thomas Andrew – designer of Titanic.</p> <p>Contemporary - Look at the work of RNLI.</p>	<p>animals exposed to extreme cold could recover when their temperature was raised again. The first experiments on humans also started at the end of the 18th century.</p> <p>Read 'Jack Thayer's story' (see the Useful Website list on My Rising Stars) a survivor's account from the Titanic. Jack Thayer was a 17-year-old who was in a lifeboat and watched the Titanic sink.</p> <p>Thomas Andrew – designer of Titanic.</p> <p>Contemporary - Look at the work of RNLI.</p>
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Seasonal change activities will be taught in KS1 when and where appropriate, throughout the year, to meet the following objectives:

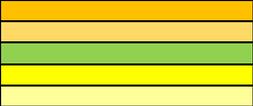
- observe changes across the four seasons.
- observe and describe weather associated with the four seasons and how day length changes.

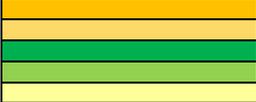
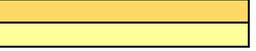
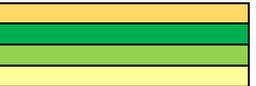
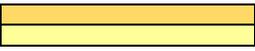
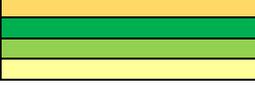
St Leonard's Primary School

Science Skills Progression Map

In addition to the skills outlined, teachers use their professional judgement to teach additional skills in a unit as and when necessary. The document covers all statutory skills under Working Scientifically in the National Curriculum (NC). The underlined statements have been taken from the 'Non-Statutory Notes and Guidance' section of the NC.

Cycle 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Materials Monsters (Y2, Topic 2)	Materials Monsters (Y2, Topic 2)	Forces and Magnets (Y3, Topic 5)	Forces and Magnets (Y3, Topic 5)	Light (Year 6, Topic 4)	Light (Year 6, Topic 4)
Autumn 2	Celebrations (Y1, Topic 2)	Celebrations (Y1, Topic 2)	Looking at states (Year 4, Topic 3)	Looking at states (Year 4, Topic 3)	Material World (Year 5, Topic 2)	Material World (Year 5, Topic 2)
Spring 1	Polar Places (Year 1, Topic 3)	Polar Places (Year 1, Topic 3)	How does your garden grow? (Y3, Topic 4)	How does your garden grow? (Y3, Topic 4)	Circle of Life (Y5, Topic 3)	Circle of Life (Y5, Topic 3)
Spring 2	Who Am I? (Y1, Topic 1)	Who Am I? (Y1, Topic 1)	Living Things (Y4, Topic 2)	Living Things (Y4, Topic 2)	Classifying Living Things (Y6, Topic 1)	Classifying Living Things (Y6, Topic 1)
Summer 1	Healthy Me (Y2, Topic 1)	Healthy Me (Y2, Topic 1)	Light and Shadows (Topic 3, Y3)	Light and Shadows (Topic 3, Y3)	Electricity (Topic 5, Y6)	Electricity (Topic 5, Y6)
Summer 2	Little Master Chefs (Y2, Topic 6)	Little Master Chefs (Y2, Topic 6)	The Big Build (Topic 6, Y4)	The Big Build (Topic 6, Y4)	Amazing Changes (Topic 6, Y5)	Amazing Changes (Topic 6, Y5)

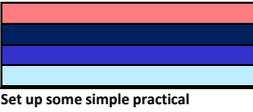
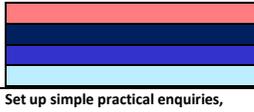
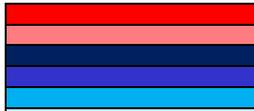
Cycle 1	Year 1	Year 2	KS2			
Working Scientifically	<i>To use the following practical scientific methods, processes and skills (adult support may be needed):</i>	<i>To use the following practical scientific methods, processes and skills with increasing confidence:</i>	<i>To use the following practical scientific methods, processes and skills:</i>			
Questioning and enquiring Planning	Begin to ask simple questions about the world around us and recognise that they can be answered in different ways. 	Ask simple questions about the world around us and recognise that they can be answered in different ways. 	Ask some relevant questions and use different types of scientific enquiries to answer them. 	Ask relevant questions and use different types of scientific enquiries to answer them. 	Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. 	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. 
Observing and measuring, pattern seeking	Begin to observe closely, using simple equipment. 	Observe closely, using simple equipment. 	Begin to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. 	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data logger. 	Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. 	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. 
Investigating	Perform simple tests with support. 	Perform simple tests. 	Set up some simple practical enquiries, comparative and fair tests. 	Set up simple practical enquiries, comparative and fair tests. 	Begin to use test results to make predictions to set up further comparative and fair tests. 	Use test results to make predictions to set up further comparative and fair tests. 
Recording and Reporting Findings	Gather and record data with some adult support, to help in answering questions. 	Gather and record data to help in answering questions. 	Gather, record, and begin to classify and present data in a variety of ways to help in answering questions.  Begin to record findings using simple scientific language, drawings, labelled diagrams, keys,	Gather, record, classify and present data in a variety of ways to help in answering questions.  Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.	Begin to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs.  Begin to gather and record data to help in answering questions.	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, scatter graphs and bar and line graphs.  Begin to gather and record data to help in answering questions.

			<p>bar charts and tables.</p>  <p>Begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> 	 <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> 		
Identifying, Grouping and Classifying	<p>Identify and classify with some support.</p> 	<p>Identify and classify.</p> 	<p>Begin to identify differences, similarities or changes related to simple scientific ideas and processes.</p> 	<p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> 	<p><u>Begin to use and develop keys and other information records to identify, classify and describe living things and materials.</u></p> 	<p><u>Use and develop keys and other information records to identify, classify and describe living things and materials.</u></p> 
Research	<p><u>To begin to use simple secondary sources to find answers.</u></p> 	<p><u>Use simple secondary sources to find answers.</u></p> 	<p><u>Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.</u></p>  <p>Begin to use straightforward scientific evidence to answer questions or to support their findings.</p> 	<p><u>Recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.</u></p>  <p>Use straightforward scientific evidence to answer questions or to support their findings.</p> 	<p>Begin to identify scientific evidence that has been used to support or refute ideas or arguments.</p>  <p><u>Begin to recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</u></p> <p>-covered in cycle 2.</p>	<p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>  <p><u>Begin to recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</u></p> <p>-covered in cycle 2.</p>
Conclusions	<p>Begin to use observations and ideas to suggest answers to questions.</p> 	<p>Use observations and ideas to suggest answers to questions.</p> 	<p>Begin to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> 	<p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> 	<p>Begin to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> 	<p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> 

Vocabulary	<p>Begin to read and spell some scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage one.</p>	<p>Read and spell some scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage one.</p>	<p>Begin to read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.</p>	<p>Read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.</p>	<p>Begin to read, spell and pronounce scientific vocabulary correctly.</p>	<p>Read, spell and pronounce scientific vocabulary correctly.</p>
Understanding	<p>Can begin to talk about how science helps us in our daily lives e.g. torches and lights help us see when it is dark.</p>	<p>Can talk about how science helps us in our daily lives e.g. torches and lights help us see when it is dark.</p>	<p><u>Begin to know how things in science have made our lives better.</u></p>	<p><u>Knows how things in science have made our lives better.</u></p>	<p><u>Begin to talk about how scientific ideas have changed over time.</u></p> <p>-covered in cycle 2 but mentioned throughout.</p>	<p><u>Can talk about how scientific ideas have changed over time.</u></p> <p>-covered in cycle 2 but mentioned throughout.</p>

St Leonard's Primary School
Science Skills Progression Map

Cycle 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Squash, Bend, Twist and Stretch (Topic 3, Y2)	Squash, Bend, Twist and Stretch (Topic 3, Y2)	Food and our Bodies (Topic 2, Y3)	Food and our Bodies (Topic 2, Y3)	Growing Up and Growing Old (Topic 5, Y5)	Growing Up and Growing Old (Topic 5, Y5)
Autumn 2	Our Local Environment (Topic 4, Y2)	Our Local Environment (Topic 4, Y2)	Teeth and Eating (Topic 4, Y4)	Teeth and Eating (Topic 4, Y4)	Healthy Bodies (Topic 2, Y6)	Healthy Bodies (Topic 2, Y6)
Spring 1	Young Gardeners (Topic 5, Y2)	Young Gardeners (Topic 5, Y2)	Rocks, Soils and Fossils (Topic 1, Y3)	Rocks, Soils and Fossils (Topic 1, Y3)	Out of this World (Topic 1, Y5)	Out of this World (Topic 1, Y5)
Spring 2	On Safari (Topic 5, Y1)	On Safari (Topic 5, Y1)	What's That Sound? (Topic 1, Y4)	What's That Sound? (Topic 1, Y4)	Evolution and Inheritance (Topic 3, Y6)	Evolution and Inheritance (Topic 3, Y6)
Summer 1	Plants and Animals Where We Live (Topic 4, Y1)	Plants and Animals Where We Live (Topic 4, Y1)	Power It Up (Topic 5, Y4)	Power It Up (Topic 5, Y4)	Let's Get Moving (Topic 4, Y5)	Let's Get Moving (Topic 4, Y5)
Summer 2	Holiday (Topic 6, Y1)	Holiday (Topic 6, Y1)	The Nappy Challenge (Topic 6, Y3)	The Nappy Challenge (Topic 6, Y3)	The Titanic (Topic 6, Y6)	The Titanic (Topic 6, Y6)

Cycle 2	Year 1	Year 2	KS 2			
Working Scientifically	<i>To use the following practical scientific methods, processes and skills (adult support may be needed):</i>	<i>To use the following practical scientific methods, processes and skills with increasing confidence:</i>	<i>To use the following practical scientific methods, processes and skills:</i>			
Questioning and enquiring Planning	<p>Begin to ask simple questions about the world around us and recognise that they can be answered in different ways.</p> 	<p>Ask simple questions about the world around us and recognise that they can be answered in different ways.</p> 	<p>Ask some relevant questions and use different types of scientific enquiries to answer them.</p> 	<p>Ask relevant questions and use different types of scientific enquiries to answer them.</p> 	<p>Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> 	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> 
Observing and measuring, pattern seeking	<p>Begin to observe closely, using simple equipment.</p> 	<p>Observe closely, using simple equipment.</p> 	<p>Begin to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> 	<p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data logger.</p> 	<p>Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.</p> 	<p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.</p> 
Investigating	<p>Perform simple tests with support.</p> 	<p>Perform simple tests.</p> 	<p>Set up some simple practical enquiries, comparative and fair tests.</p> 	<p>Set up simple practical enquiries, comparative and fair tests.</p> 	<p>Begin to use test results to make predictions to set up further comparative and fair tests.</p> 	<p>Use test results to make predictions to set up further comparative and fair tests.</p> 
Recording and Reporting Findings	<p>Gather and record data with some adult support, to help in answering questions.</p> 	<p>Gather and record data to help in answering questions.</p> 	<p>Gather, record, and begin to classify and present data in a variety of ways to help in answering questions.</p>  <p>Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p>	<p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p>  <p>Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p>	<p>Begin to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.</p> 	<p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.</p> 

			 <p>Begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> 	 <p>Begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> 		
Identifying, Grouping and Classifying	<p>Identify and classify with some support.</p> 	<p>Identify and classify.</p> 	<p>Begin to identify differences, similarities or changes related to simple scientific ideas and processes.</p> 	<p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> 	<p><u>Begin to use and develop keys and other information records to identify, classify and describe living things and materials.</u></p> <p>-covered in cycle 1.</p>	<p><u>Use and develop keys and other information records to identify, classify and describe living things and materials.</u></p> <p>-covered in cycle 1.</p>
Research	<p><u>To begin to use simple secondary sources to find answers.</u></p> 	<p><u>Use simple secondary sources to find answers.</u></p> 	<p><u>Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.</u></p>  <p>Begin to use straightforward scientific evidence to answer questions or to support their findings.</p> 	<p><u>Recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.</u></p>  <p>Use straightforward scientific evidence to answer questions or to support their findings.</p> 	<p>Begin to identify scientific evidence that has been used to support or refute ideas or arguments.</p>  <p><u>Begin to recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</u></p> 	<p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>  <p><u>Begin to recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</u></p> 
Conclusions	<p>Begin to use observations and ideas to suggest answers to questions.</p> 	<p>Use observations and ideas to suggest answers to questions.</p> 	<p>Begin to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> 	<p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> 	<p>Begin to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> 	<p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> 
Vocabulary	<p>Begin to read and spell some scientific vocabulary at a level consistent with their increasing word reading and spelling</p>	<p>Read and spell some scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage one.</p>	<p>Begin to read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling</p>	<p>Begin to read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling</p>	<p>Begin to read, spell and pronounce scientific vocabulary correctly.</p>	<p>Read, spell and pronounce scientific vocabulary correctly.</p> 

	<p>knowledge at key stage one.</p> 		<p>knowledge.</p> 	<p>knowledge.</p> 		
<p>Understanding</p>	<p>Can begin to talk about how science helps us in our daily lives e.g. torches and lights help us see when it is dark.</p> 	<p>Can talk about how science helps us in our daily lives e.g. torches and lights help us see when it is dark.</p> 	<p><u>Begin to know how things in science have made our lives better.</u></p> 	<p><u>Knows how things in science have made our lives better.</u></p> 	<p><u>Begin to talk about how scientific ideas have changed over time.</u></p> 	<p><u>Can talk about how scientific ideas have changed over time.</u></p> 