Science Curriculum Map

By the end of EYFS, we expect children to be able to:

- ✓ Know about similarities and differences in relation to places, objects, materials and living things.
- ✓ Talk about the features of their own immediate environment and how environments might vary from one another.
- ✓ Make observations of animals and plants and explain why some things occur and talk about changes.
- ✓ Talk about past and present events in their own lives and in the lives of family members.
- ✓ Know that other children don't always enjoy the same things and are sensitive to this.
- ✓ Know about similarities and differences between themselves and others and among families, communities and traditions.

By the end of Key Stage One, we expect pupils to be able to:

- ✓ Observe phenomena, looking more closely at the natural and humanly constructed world around them.
- ✓ Be curious and ask questions about what they notice.
- ✓ Develop an understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information.
- ✓ Use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.

By the end of Key Stage Two, we expect pupils to be able to:

- ✓ Talk about testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments
- ✓ Ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information.
- ✓ Draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Year 1	Autumn 1 Animals: Comparing Animals	Autumn 2 Forces and Space: Seasonal Changes	Spring 1 Materials: Everyday Materials	Spring 2 Animals: Sensitive Bodies	Summer 1 Plants: Introduction to Plants	Summer 2 Strengthening our Science Skills: *Science Through Stories*
National Curriculum Programme of Study	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 and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	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, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	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.	Observe changes across the seasons. Do taller trees have wider trunks? Describe and compare the features of animals. Comparing woodland animals Identify differences in animal features. Measuring animal footprints Describe the properties of everyday materials. Building an animal home Identify animals that are carnivores, herbivores and omnivores. Are birds' carnivores, herbivores or omnivores?
RDPS Knowledge and Skills	Name and describe the physical features of a range of animals. Sort animals into groups based on their similarities and differences. Identify characteristics specific to mammals, birds, reptiles, amphibians and fish. Recall the diets of carnivores, herbivores and omnivores.	Identify how the weather changes across the four seasons. Recognise how trees change across the four seasons. Recognise that daylight hours change across the four seasons. Observe changes across the four seasons. Plan and carry out a weather report.	Identify everyday materials. Recognise the difference between objects and materials. Describe the properties of materials. Group materials based on their properties: absorbency, waterproofness, toughness.	Draw and label human body parts. Identify the body parts associated with each sense. Recognise how the senses are used in everyday life.	Identify plants in the school grounds. Identify parts of a flowering plant. Identify and name deciduous and evergreen trees. Recognise that new plants come from seeds and bulbs.	Using picture books as inspiration, the children broaden their understanding of plants and animals by gathering and recording data to investigate if taller trees have larger trunks, recap the features of animal groups, build waterproof animal homes with natural materials and sort birds according to their diet.

Working Scientifically	Recognise that there are different ways to gather data. Record data in a block graph and use this to answer questions.	Complete a pictogram and use it to answer simple questions. Record data about the temperature across the four seasons.	Make observations and record data. Plan a test and suggest what might happen. Answer questions based on results.	Compare and group body parts. Recognise patterns in data and use these to answer questions. Record data in a table.	Plan an investigation. Draw and label a diagram. Sort flowers into groups. Measure and compare leaves.	Spot patterns in data. Carry out research to find specific information. Use a ruler to measure. Plan how to carry out a test.
Supporting Materials	KS1 Science Lesson Plans | Comparing Animals	KS1 Science Lesson Plans | Seasonal Changes	KS1 Science Lesson Plans | Material Properties	KS1 Science Lesson Plans | Animals | Sensitive Bodies	KS1 Science Lesson Plans | Introduction To Plants	Making connections: Investigating science through stories

Year 2	Autumn 1 Animals: Life Cycles and Health	Autumn 2 Living Things: Habitats	Spring 1 Plant Growth	Spring 2 Living Things: Microhabitats	Summer 1 Materials: Uses of Everyday Materials	Summer 2 Strengthening our Science Skills: *What is a suitable material for a plant pot?*
National Curriculum Programme of Study	Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air.) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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. 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.	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.	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 microhabitats.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	To describe how materials can be reused. To identify human-made and natural materials. Identify suitable materials based on their properties. Identify a material to help plant growth.
RDPS Knowledge/Skills	Identify different stages of the human life cycle. Know which offspring come from which parent animal. Observe and measure growth in humans. Identify and list the basic needs for survival for humans and animals.	Identify some of the characteristics of living things. Recognise the difference between things that are alive, were once alive or have never been alive. Identify plants and animals in different habitats. Identify how a habitat provides animals and plants	Recognise that seeds need certain conditions for growth. Recognise that seeds and bulbs contain what they need to grow into a plant. Describe what seeds need to germinate. Describe the effect of light on plant growth.	Identify and name a variety of plants and animals. Recall that minibeasts live in microhabitats. Describe microhabitats and their conditions. Describe how microhabitats provide for the basic needs of animals and plants.	Recognise that objects are made from materials that suit their uses. Recognise that the shape of some solid objects can be changed. Compare the suitability of materials for uses.	Identifying ways to reduce, reuse and recycle, the children use their knowledge of material properties to invent creative uses for old objects, discover that some natural materials come from plants, explore paper-making processes, conduct tests to select suitable materials for homemade plant pots and venture outdoors to gather natural materials to decorate.

	Recognise the importance of exercise and personal hygiene. Identify how to have a balanced diet.	with what they need to survive. Recognize how animals and plants depend on each other. Recall how animals get their food from plants and other animals.	Identify stages of a plant's life cycle. Recognise what plants need for healthy growth.	Describe the job role of a botanist.	Recognise that the strength of some materials can be changed. Compare the suitability of materials for uses.	
Working Scientifically	Use simple measuring equipment. Use secondary sources to research. Make observations over time. Interpret collected results.	Classify objects into alive, never been alive and was once alive, giving reasons for their choices. Carry out research to find answers to questions.	Measure with a ruler. Record data in a table. Observe using a magnifying glass. Draw and label diagrams. Recognise that humans have a responsibility to care for plants	Classify a variety of minibeasts. Gather and record data to answer a question. Ask questions and plan how to carry out an experiment. Carry out an experiment and record data in a table.	Recognise that objects can be grouped. Record data in a table Gather data and use it to answer a question. Record data in a block graph.	Group based on characteristics. Perform a test and gather data. Use observations to answer a simple question. Identify and classify living things.
Supporting Materials	KS1 Science Lesson Plans | Animals Life Cycles and Health	KS1 Science Lesson Plans | Living Things And Habitat	Year 2 Science Unit: Lesson Plans On Plants And Plant Growth	Year 2 Science Lesson Plans: Living Things And Microhabitats - Kapow Primary	KS1 Science Lesson Plans | Everyday Materials	Year 2 Science Unit: Plant-Based Materials

Year 3	Autumn 1 Materials: Rocks and Soil	Autumn 2 Energy: Light and Shadows	Spring 1 Forces and Space: Forces and Magnets	Spring 2 Plants: Plant Reproduction	Summer 1 Animals: Movement and Nutrition	Summer 2 Strengthening our Science Skills: *Does hand span affect grip strength?*
National Curriculum Programme of Study	Compare and group together different kinds of rocks based on their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.	Recognise that they need light 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 their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.	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 based on 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 poles are facing.	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	Identify those 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.	Describe how muscles move the skeleton. Identify which rock is suitable for a specific purpose based on its properties. Describe the role of fruits in plant reproduction.
RDPS Knowledge/Skills	Group rocks using their appearance. Group rocks using their physical properties. Describe the process of fossil formation. Identify fossils and group rocks accordingly.	Explain the role of light sources. Compare light reflecting on different surfaces. Recognise which materials cast a shadow. Summarise how shadows change throughout the day.	Describe the effects of contact forces. Recognise the effects and use of forces. Interpret how and why things move on different surfaces. Describe the effects of magnets.	Identify the growth and survival needs of plants. To describe the relationship between structure and function in plants. Investigate how water is transported in plants.	Explain the role of skeleton. Recognise the main bones in the body. Explain how muscles are used for movement. Explain how food is an essential energy source for animals.	Exploring the relationship between hand span and grip strength through scientific enquiry, the children apply their understanding of friction to make predictions, plan investigations and carry them out.

	Compare soils and how they were formed. Describe a soil sample using sedimentation.	Investigate how the distance of the light source affects the size of its shadow. Tell a story using shadow puppets.	Compare the effects of different magnets. Compare the properties of magnets. Explain the uses of magnets.	Explore the role of flowers in the life cycle of a plant. Apply knowledge of plant life and growth. Explore seed dispersal methods.	Identify the main nutrient groups and their simple functions. Explain what makes a balanced diet.	
Working Scientifically	Observe the appearance of rocks closely, using a magnifying glass. Make predictions, suggest improvements and explain observations over time. Present research on fossil formation. Record the drainage rate for different soils in a bar chart. Draw and label a diagram.	Plan and draw a results table. Ask testable questions and plan how to answer them. Evaluate a method. Find patterns in data and form conclusions.	Label a diagram using arrows and scientific vocabulary. Write a scientific conclusion identifying cause and effect. Plan an investigation using variables. Write a method. Display data using a bar chart.	Pose relevant questions. Design simple results tables. Plan a simple enquiry. Complete, readd and interpret a bar chart. Suggest changes to an enquiry. Use results to draw conclusions.	Group animals based on simple properties. Measure and sort data. Gather and compare data to answer questions. Record and use information using secondary sources.	Plan a pattern seeking enquiry. Gather and record data. Conclude and evaluate an investigation. Use sets of data to inform design. Present findings to an audience.
Supporting Materials	KS2 Science Lesson Plans | Rock And Soil	Lower KS2 Science Lesson Plans | Energy | Light & Shadows	Lower KS2 Science Lesson Plans | Forces And Magnets	Year 3 Science Lesson Plans: Plant Reproduction Unit	KS2 Science Lesson Plans | Bodies, Movement & Nutrition	Year 4 Science Unit: Hand Span and Grip Strength

Year 4	Autumn 1 Animals: Digestion and Food	Autumn 2 Energy: Electricity and Circuits	Spring 1 Materials: States of Matter	Spring 2 Energy: Sound and Vibrations	Summer 1 Living Things: Classification and Changing Habitats	Summer 2 Strengthening our Science Skills: *How does the flow of liquids compare?*
National Curriculum Programme of Study	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.	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 a lamp will light in a simple series circuit, based on whether 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 a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.	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.	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.	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.	Use a classification key to help group, identify and name a variety of living things in their local and wider environment. Know that environments can change and that this can sometimes pose dangers to living things. Know that a switch opens and closes a circuit and associate this with whether a lamp lights in a simple series circuit. Know that some common conductors and insulators, and associate metals with being good conductors. Know how sounds are made, associating some of them with something vibrating. Know that vibrations from sounds travel through a medium to the ear. To know the simple functions of the basic parts of the digestive system in humans.

RDPS Knowledge/Skills	Describe the function of the human digestive system. Recognise the different types of human teeth and their roles in eating. Explain how to care for our teeth. Recognise that differences in teeth relate to an animal's diet. Recognise producers, predators and prey in food chains. Recognise that animal poo can give us clues about digestion, teeth and diet.	Recognise how electrical appliances are powered. Construct an electrical circuit. Explain the use of switches in a circuit. Explain the use of materials as electrical conductors or insulators. Investigate what affects bulb brightness. Explain how to be safe around electricity.	Identify solids using their properties. Identify liquids and gases using their properties. Describe melting and freezing. Describe condensing and evaporating. Describe the different stages of the water cycle. Describe how temperature affects evaporation rates and the water cycle.	Describe how sounds are made. Describe how sounds are heard through different mediums. Describe the relationship between vibration strength and volume. Describe the relationship between volume and distance. Describe pitch and how to change it. Explain how insulating materials can be used to muffle sound.	Group animals in various ways. Group plants in various ways. Make careful observations. Recognise and describe different habitats and their inhabitants. Recognise the impact humans can have on habitats. Recognise the impact of natural disasters on habitats.	Exploring the relationship between viscosity and the flow of liquids through experiments, the children analyse data, draw conclusions and apply their understanding of states of matter to make predictions, plan and carry out an enquiry.
Working Scientifically	Evaluate a model. Describe real observation methods and evidence collected. Plan an enquiry by considering which variables should be changed, measured and controlled. Group animals based on their diet. Recognise producers, predators and prey in food chains. Construct a results table for recording observations.	Record and classify qualitative data. Draw a scientific diagram. Write a method. Pose questions and plan ways to test them.	Ask relevant questions about the properties of solids. Use results to draw simple conclusions about the properties of liquids. Use thermometers to take accurate measurements before and after melting. Make predictions for new values about evaporation rates. Record the stages of the water cycle using a labelled diagram. Research climate change and the water cycle.	Observe closely how different instruments create a sound. Research how whales and dolphins communicate underwater. Present results using a bar chart. Suggest which variables to measure and for how long. Design simple results tables. Identify when results or observations do not match predictions.	Record data in different ways. Apply and create classification keys. Make and use classification keys. Gather, record, classify and present data. Research using an information sheet.	Plan a comparative test. Gather and record data. Conclude and evaluate the investigation. Observe carefully and apply these observations to problem solve. Report on my findings.
Supporting Materials	Lower KS2 Science Lesson Plans | Digestion & Food	KS2 Science Lesson Plans | Energy | Electricity & Circuits	KS2 Science Lesson Plans | Materials | States of Matter	Lower KS2 Science Lesson Plans | Sound And Vibrations	KS2 Science Lesson Plans | Classification & Habitats	Year 4 Science Unit: How Does the Flow of Liquids Compare?

Year 5	Autumn 1 Materials: Properties and Changes	Autumn 2 Forces and Space: Earth and Space	Spring 1 Materials: Mixtures and Separation	Spring 2 Forces and Space: Unbalanced Forces	Summer 1 Animals: Life Cycles and Reproduction	Summer 2 Strengthening our Science Skills: *Does the size of an asteroid affect the diameter of its impact crater?*
National Curriculum Programme of Study	Compare and group together everyday materials based on their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Give reasons, based on evidence from comparative and fair tests, for the uses of everyday materials, including metals, wood and plastic. 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.	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 approximately 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.	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. 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.	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.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	Know the movement of the Earth, and other planets, relative to the Sun in the solar system. Recognise the Sun, Earth and Moon are approximately spherical bodies. Know the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Understand how to compare and group together everyday materials based on their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that unsupported objects fall towards the Earth. Recognise the effects of air resistance, water resistance and friction, that act between moving surfaces. Understand how to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.

RDPS Knowledge/Skills	Determine the hardness of materials and link this to their uses. Determine the transparency of different materials and link this to their uses. Determine the conductivity of different materials and link this to their uses. Demonstrate reversible changes. Demonstrate irreversible changes.	Compare the contributions of Ptolemy, Alhazen and Copernicus to models of the Solar system. Describe the movement and shapes of the celestial bodies in our Solar System. Describe the movement of the Moon relative to the Earth. Explain the causes of day and night and the seasons. Devise a sundial to tell the time. Describe some uses of satellites and the problems posed by space junk.	Describe mixtures. Explain the process of sieving. Explain the process of filtering. Describe solutions and how they can be identified. Identify which factors affect the time taken to dissolve. Describe the process of evaporation.	Describe gravity and its effects. Describe air resistance and its effects. Describe water resistance and its effects. Describe friction and its effects. Describe the effects of levers, pulleys and simple machines on movement. Describe the relationship between lever length and effort.	Describe the life cycle of a plant, including the reproductive stage. Describe the life cycle of a mammal. Describe the life cycle of a bird and compare it with that of a mammal. Describe the life cycle of an amphibian. Describe the life cycle of an insect and compare it with that of an amphibian. Describe asexual reproduction in plants.	Exploring the relationship between the size of model asteroids and the diameter of their impact craters, the children conduct experiments, analyse data, draw conclusions and apply their understanding of gravity, air resistance and Earth and space to make predictions and plan an enquiry.
Working Scientifically	Evaluate the hardness test to determine the degree of trust in the results. Plan and draw a table of results. Write a detailed, organised method that is easy to follow. Write a prediction using prior knowledge of the states of matter. Analyse observations about rusting and use them to support a conclusion. Measure the circumference of a balloon accurately.	Pose testable questions about the solar system. Develop a model to represent the Solar System. Design and draw a table. Draw a diagram to explain day and night. Calibrate and use a sundial to measure time. Use temperature data to make predictions about climate change.	Research using a range of secondary resources. Draw and annotate a diagram to explain a concept. Identify testable questions and how to answer them. Make observations about solutions. Plan a fair test with consideration of variables and measurements.	Analyse data to write a conclusion. Plan a fair test to investigate air resistance. Design a results table. Evaluate a method. Draw and label a diagram. Draw an accurate line graph.	Observe and compare equivalent parts in different flowers. Research the life cycles of different mammals. Pose questions to compare the life cycles of different birds. Suggest how temperature may affect egg hatching. Use data to describe a relationship and make predictions. Represent root growth over time on a line graph.	Plan a comparative test. Gather and record data. Conclude and evaluate the investigation.
Supporting Materials	KS2 Science Lesson Plans | Material Properties & Changes	KS2 Science Lesson Plans | Earth & Space	KS2 Science Lesson Plans | Separation	Forces and space: Unbalanced forces	KS2 Science Lessons | Life Cycles Of Living Things	Year 5 Science Unit: Lesson Plans Investigating Asteroids

Year 6	Autumn 1 Living things: Classifying Big and Small	Autumn 2 Energy: Light and Reflection	Spring 1 Living Things: Evolution and Inheritance	Spring 2 Energy: Circuits, Batteries and Switches	Summer 1 Animals: Circulation and Health	Summer 2 Strengthening our Science Skills: *Are some sunglasses safer than others?*
National Curriculum	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.	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.	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.	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	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 body's function. Describe the ways in which nutrients and water are transported within animals, including humans.	Know the characteristics of the different groups of vertebrates and commonly found invertebrates. Know when light is reflected off a surface, its direction changes. Understand that luminous objects are seen because of light directly entering the eye, whereas non-luminous objects reflect light into the eye. Know that characteristics are passed from parents to their offspring, but all offspring vary from their parents. Recognise that animals and plants have adapted to suit their environment over many millions of years and this process can be called evolution. Understand that over time, variation in offspring can affect animals' chances of survival in particular environments. Know a variety of components in a series circuit (including buzzer and motor). Recognise the impact of diet, exercise, drugs and lifestyle on the way a body functions.

RDPS Knowledge/Skills	Explain how organisms are classified using the Linnaean system. Classify the cold-blooded vertebrate groups using their common characteristics. Classify invertebrates using their characteristics. Describe how the plant kingdom is organised (based on shared characteristics). Describe and classify micro-organisms.	Describe the pathway of light. Describe how we see. Explain how shadows change. Investigate what affects the angle of the reflected ray. Explain how a periscope works. Explain how mirrors are helpful.	Explain why there are differences within a species. Recognise the inheritance of characteristics in plants and animals. Explain why adaptation is necessary. Model how natural selection affects population size. Describe the theory of evolution. Recognise evidence that can be used for evolution.	Use recognised symbols for electrical components. Predict and present results for electrical circuits. Recognise a link between the number of components and resistance. Identify ways to change voltage within an electrical circuit. Investigate how voltage affects bulb brightness. Apply knowledge of circuits and components to a practical solution.	identify factors that affect our health and how to reduce their negative impact. summarise the key structures and purpose of the circulatory system. identify the key roles of blood. explore the relationship between animal size and heart rate. Investigate the relationship between exercise and heart rate. describe the relationship between heart rate and fitness.	Exploring sun safety, the children investigate the efficacy of different sunglasses, devise enquiries to test light and UV transmission of the lenses, draw a conclusion about the best sunglasses and summarise their findings through presentations and advertisements.
Working Scientifically	Use a classification key to classify frog species. Use a classification key to classify vertebrates and invertebrates. Produce a working classification key. Use a classification key to classify bacteria.	Use evidence to form conclusions. Draw scientific diagrams. Pose questions. Record results as a line graph	Group factors. Evaluate the degree of trust and pose new questions for further enquiry. Consider evidence used to inform theories. Consider the degree of trust in the evidence used.	Use standardised symbols when drawing diagrams. Explain results using scientific knowledge. Design a results table. Plan an enquiry.	Evaluate sources of information. Evaluate a model. Interpret patterns in data. Write a method. Draw a line graph.	Conclude and evaluate the investigation. Use further data to inform a conclusion. Report on findings in the form of an advert.
Supporting Materials	KS2 Science Lesson Plans | Living Things & Classification	Upper KS2 Science | Energy & Light Lesson Plans	Upper KS2 Science Lesson Plans | Evolution And Inheritance	Upper KS2 Science Lesson Plans | Circuits & Batteries	Year 6 Science Unit: Animals - Circulation And Health	