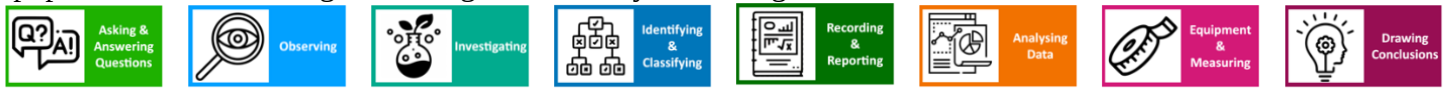
Science

Fulfen Primary School adopts best practice from a range of research, resources and educational thinking to improve outcomes for all our children. Science has changed our lives and is vital to the world's future prosperity, and all our pupils are taught essential aspects of the knowledge, methods, processes and uses of science.

Through building up a body of key foundational knowledge and concepts, pupils are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena.
Within each year group, pupils will revisit our eight working scientifically skill categories:



All children are encouraged to develop and use this range of skills including observations, planning and investigations, as well as being encouraged to question the world around them. We develop the natural inquisitiveness of our pupils, encourage respect for living organisms and the physical environment, and provide opportunities for critical evaluation of evidence.

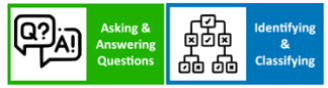
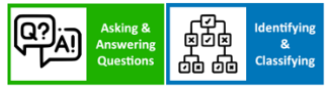
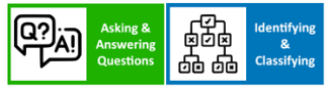
"Tell me and I'll forget; show me and I may remember; involve me and I'll understand."
Benjamin Franklin

Our inquisitive and analytical scientists will acquire the skills to have:

- The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings.
- Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.
- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings.
- High levels of originality, imagination or innovation in the application of skills.
- The ability to undertake practical work in a variety of contexts, including fieldwork.
- A passion for science and its application in past, present and future technologies.

Pupils demonstrate their progress by completing tasks or answering questions of increasing depth, from basic, through advancing to deep. Tasks will be completed through a variety of mediums including written work and multimedia presentations.

CURRICULUM MAP

	Autumn	Spring	Summer
Pre-School	**Ourselves** Body Parts & My Senses  **Seasons** Autumn & Winter 	**Happily Ever After** Making Bread  **Seasons** Spring 	**Plants & Animals** Living Things  **Seasons** Summer 
Reception	**Marvellous Me** How I have grown  **Seasons** Autumn & Winter 	**It's a Wonderful World** Snow and Ice  **Once Upon a Time** Gingerbread man  **Seasons** Spring 	**All Creatures Great and Small** Life Cycles  Staying Healthy  **Commotion in the Ocean** Floating and Sinking  **Seasons** Summer 

<table>
<tr><th></th><th>Autumn</th><th>Spring</th><th>Summer</th></tr>
<tr><td rowspan="2">Year 1
Topics
&
Suggested Skills Categories</td><td><u>Humans</u>
Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.
<u>Animals</u>
a. Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals.
b. Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
c. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).
 
</td><td><u>Everyday Materials</u>
a. Distinguish between an object and the material from which it is made.
b. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.
c. Describe the simple physical properties of a variety of everyday materials.
d. Compare and group together a variety of everyday materials on the basis of their simple physical properties.
 
</td><td><u>Plants</u>
a. Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
b. Identify and describe the basic structure of a variety of common flowering plants, including trees.
 
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<tr><td colspan="3"><u>Seasonal Changes</u>
a. Observe changes across the four seasons.
b. Observe and describe weather associated with the seasons and how day length varies.
c. Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals.
d. Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
 
</td></tr>
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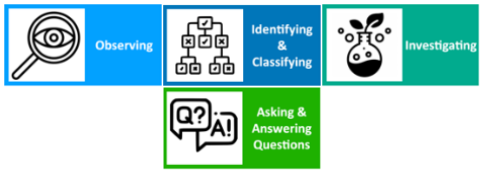
	Autumn	Spring	Summer
Year 2 **Topics** **&** ***Suggested Skills Categories***	**Uses of everyday materials** a. Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. b. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting, cutting and stretching. 	**Animals, including humans** a. Notice that animals, including humans, have offspring which grow into adults. b. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). c. 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. d. Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	**Living things and their habitats** a. Explore and compare the difference between things that are living, dead and things that have never been alive. b. Identify that most 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. c. Identify and name a variety of plants and animals in their habitats, including micro-habitats. d. 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. 
	Plants a. Observe and describe how seeds and bulbs grow into mature plants. b. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy 		

	Autumn	Spring	Summer
Year 3 **Topics** **&** ***Suggested Skills Categories***	**Rocks** a. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. b. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. c. Recognise that soils are made from rocks and organic matter.  **Light** a. Recognise that they need light in order to see things and that dark is the absence of light. b. Notice that light is reflected from surfaces. c. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. d. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. e. Find patterns in the way that the size of shadows change. 	**Animals, including humans** a. 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. b. Identify that humans and some animals have skeletons and muscles for support, protection and movement. 	**Forces and magnets** a. Compare how things move on different surfaces. b. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. c. Observe how magnets attract or repel each other and attract some materials and not others. d. 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. e. Describe magnets as having two poles. f. Predict whether two magnets will attract or repel each other, depending on which poles are facing.  **Plants** a. Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. b. 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. c. Investigate the way in which water is transported within plants. d. Explore the part that flowers play in the life cycle of flowering plants including pollination, seed formation and seed dispersal. 

	Autumn	Spring	Summer
Year 4 **Topics** **&** ***Suggested Skills Categories***	**Living things and their habitats** a. Recognise that living things can be grouped in a variety of ways. c. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. d. Recognise that environments can change and that this can sometimes pose dangers to living things.  Pupils should use the local environment **throughout the year** to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes **throughout the year** (optional). **Sound** a. Identify how sounds are made, associating some of them with something vibrating. b. Recognise that vibrations from sounds travel through a medium to the ear. c. Find patterns between the pitch of a sound and features of the object that produce it. d. Find patterns between the volume of a sound and the strength of the vibrations that produce it. e. Recognise that sounds get fainter as the distance from the sound source increases. 	**Electricity** a. Identify common appliances that run on electricity. b. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. c. 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. d. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. e. Recognise some common conductors, and insulators, and associate metals with being good conductors.  **Animals, including humans** a. Describe the simple functions of the basic parts of the digestive system in humans. b. Identify the different types of teeth in humans and their simple functions. c. Construct and interpret a variety of food chains, identifying producers, predators and prey. 	**States of matter** a. Compare and group materials together, according to whether they are solids, liquids or gases. b. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (˚C). c. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.  **Living things and their habitats** Pupils should use the local environment **throughout the year** to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes **throughout the year** (optional).

	Autumn	Spring	Summer
Year 5 **Topics** **&** ***Suggested Skills Categories***	**All living things and their habitats** a. Describe the difference in life-cycles of a mammal, an amphibian, an insect and a bird. b. Describe the life process of reproduction in some plants and animals.  **Earth and space** a. Describe the movement of the Earth, and other planets, relative to the solar system. b. Describe the movement of the Moon relative to the Earth. c. Describe the Sun, Earth and Moon as approximately spherical bodies. d. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. 	**Properties and changes of materials** a. 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. b. Know that some materials will dissolve in liquid form a solution, and describe how to recover a substance from a solution. c. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. d. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. e. Demonstrate that dissolving, mixing and changes of state are reversible changes. f. 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. 	**Forces** a. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. b. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. c. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.  **Animals, including humans** a. Describe the changes as humans develop to old age (link to RSE). 

	Autumn	Spring	Summer
Year 6 **Topics** **&** ***Suggested Skills Categories***	**Circuits** a. Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. b. 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. c. Use recognised symbols when representing a simple circuit in a diagram.  **Light** a. Recognise that light appears to travel in straight lines. b. 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. c. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then our eyes. d. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 	**Living things and their habitats** a. 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. b. Give reasons for classifying plants and animals based on specific characteristics.  **Evolution and inheritance** a. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. b. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. c. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 	**Animals including humans** a. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. b. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. c. Describe the ways in which nutrients and water are transported within animals, including animals. 

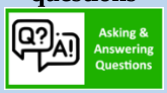
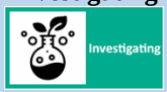
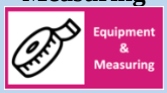
Foundation Stage Progression Map

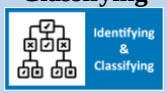
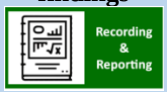
Our Foundation stage team aims to build (in sequence) the foundational knowledge, skills and understanding children need in order to be successful and prepare children for subsequent teaching and learning.

Knowledge	Skills	Vocabulary
Living things • Internal and external body parts in humans. • The names of the different parts of plants and animals. • The features of plants and animals. • Living things can be sorted into different groups. • What living things need to survive. • How to keep healthy. • About life cycles **Materials** • What objects are made from. • The properties of different materials. • How different materials can be used. • Materials can be sorted into different groups. C**hange** • Changes can be reversible and irreversible. • The relationship between cause and effect. • The characteristics of the four seasons. The characteristics of different weather types.	**Children are learning to:** • Explore • Investigate • Observe • Compare • Describe • Ask questions • Communicate ideas • Face challenges • Solve problems • Try things out • Test ideas • Make predictions • Record • Draw conclusions • Sort and classify • Measure.	question fair unfair predict explain observe compare name investigate changes

This lays the foundation for children to progress into Key Stage 1 and beyond. For a full breakdown of the curriculum design in the Foundation Stage, click here.

Progression in Working Scientifically

Working Scientifically Skill	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Asking and answering questions 	Use everyday language/begin to use simple scientific words to ask or answer a scientific question	Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways including simple secondary sources such as books/video clips	Use ideas to pose questions, independently about the world around them	Suggest relevant questions and know that they could be answered in a variety of ways including using secondary sources such as ICT Answer questions using straight forward scientific evidence	Raise different types of scientific questions and hypotheses	Pose/select the most appropriate line of enquiry to investigate scientific questions
Investigating 	Follow instructions to complete a simple test individually or in a group	Do things in the correct order when performing a simple test and begin to recognise when something is unfair	Discuss enquiry methods including comparative and fair tests and describe a fair test	Make decisions about different enquiries including recognising when a fair test is necessary and begin to identify variables	Plan a range of science enquiries including comparative and fair tests	Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why in a variety of comparative and fair tests
Observing 	Observe objects materials and living things and describe what they see	Observe something closely and describe changes over time.	Make decisions about what to observe during an investigation	Make systematic and careful observations	Plan and carry out comparative and fair tests making systematic and careful observations	Make their own decisions about which observations to make using test results and observations to make predictions or set up further comparative or fair tests
Equipment and Measuring 	Use simple, non-standard measurements in a practical task	Use simple equipment such as hand lenses or egg timer to take measurements, make observations and carry out simple tests	Take accurate measurements using standard units	Take accurate measurements using standard units and a range of equipment, including thermometers and dataloggers	Take measurements using a range of scientific equipment with increasing accuracy and precision	Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately. Decide how long to take measurements for,

						checking results with additional readings
Identifying and Classifying 	Sort and group objects, materials and living things with help, according to simple observational features	Decide, with help, how to group materials, living things and objects, noticing changes over time and beginning to see patterns	Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships	Identify similarities/differences/changes when talking about scientific processes. Use and begin to create simple keys	Use and develop keys to identify, classify and describe	Identify and explain patterns seen in the natural environment. Identify relationships or patterns in observations or measurements
Recording and Reporting on findings 	Talk about their findings and explain what they have found out	Gather data, record and talk about their findings in a range of ways using simple scientific vocabulary	Record their findings using scientific language and present in note form, writing frame, diagrams, tables and charts.	Choose appropriate ways to record and present information, findings and conclusions for different audiences e.g. displays, oral or written explanations	Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, scatter graphs bar and line graphs and model	Continue to record data and results of increasing complexity. Choose the most effective approach to record and report results linking to mathematical knowledge
Analysing Data 	Use every day or simple scientific language to ask and or answer a question on given data	Identify simple patterns and/or relationships using simple comparative language	Gather record and use data in a variety of ways to answer a simple question	Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence to support their findings	Use relevant scientific language and illustrations to discuss communicate and justify their scientific ideas. Seek patterns in their results.	Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion. Seek patterns in their results.
Drawing Conclusions 	Explain with help what they think they have found out	Use simple scientific language to explain what they have found out	Draw, with help, a simple conclusion based on evidence from an enquiry or observation	Use recorded data to make predictions, pose new questions and suggest improvements for further enquiries	Use simple mode of communication to justify their conclusions on a hypothesis. Begin to recognise how scientific ideas change over time	Identify validity of conclusion and required improvement to methodology. Discuss how scientific ideas develop over time

Scientific Vocabulary	Question, simple test, fair / unfair, data, prediction, observation, measure, units (m, cm, kg), mass, jug, timer, scales, Venn diagram.	Question, simple test, fair / unfair, data, prediction, observation, measure, units (m, cm, kg), mass, jug, timer, scales, Venn diagram, results, table, chart, block graph, pictogram.	Comparative test, fair test, planning, pattern, equipment, data, prediction, observations, measurement, accuracy, thermometer, data logger, pattern-seeking, units (m, cm, mm, kg, g, cm3 minutes, seconds, Newtons), scales, table, bar chart, line graph, conclusion, difference, similarity, changes.	Comparative test, fair test, planning, pattern, equipment, data, prediction, observations, measurement, accuracy, thermometer, data logger, pattern-seeking, units (m, cm, mm, kg, g, cm3 minutes, seconds, Newtons), scales, table, bar chart, line graph, conclusion, difference, similarity, changes, Carrol diagram, Venn diagram, key.	Variables, equipment, data, predictions, scientific language, measurement, accuracy, precision, repeated readings, units (fractions, decimals, mixed), apparatus, averages, diagrams, labels, classification key tables, scatter graphs, bar charts, line graphs, systematically, conclusion, causal relationship, explanation, degree of trust, interpret.	Variables, equipment, data, predictions, scientific language, measurement, accuracy, precision, repeated readings, units (fractions, decimals, mixed), apparatus, averages, diagrams, labels, classification key tables, scatter graphs, bar charts, line graphs, systematically, conclusion, causal relationship, explanation, degree of trust, interpret.

Progression in Biology

Biology	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants This concept involves becoming familiar with different types of plants, their structure and reproduction.	• Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen. • Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.	• 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 and describe the functions of different parts of flowering plants: roots, stem, 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 role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.			
Animals including humans This concept involves becoming familiar with different types of animals, humans and the life processes they share.	• Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores.	• Notice that animals, including humans, have offspring which grow into adults. • Investigate and describe the basic needs of animals, including humans, for survival (water, food and air). • Describe the importance for	• Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat. • Identify that humans and some animals have skeletons and	• Construct and interpret a variety of food chains, identifying producers, predators and prey. • Describe the simple functions of the basic parts of the digestive system in humans. • Identify the different types of teeth in	• Describe the changes as humans develop to old age.	• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions.

	• Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets). • Identify name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	humans of exercise, eating the right amounts of different types of food and hygiene.	muscles for support, protection and movement.	humans and their functions.		• Describe the ways in which nutrients and water are transported within animals, including humans.
Living things and their habitats This concept involves becoming familiar with a wider range of living things, including insects and understanding life processes.		• Explore and compare the differences between things that are loving, that are dead and that have never been alive. • Identify that most living things live in habitats to which they are situated 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		• Recognise that living things can be grouped in a variety of ways. • Explore and use classification keys. • Recognise that environments can change and that this can sometimes pose dangers to specific habitats.	• 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.	• Describe how living things are classified into broad groups according to common observable characteristics. • Give reasons for clarifying plants and animals based on specific characteristics.

		goo chain, and identify and name different sources of food.				
Evolution This concept involves understanding that organisms come into existence, adapt, change and evolve and become extinct.						• 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.

Progression in Chemistry

Chemistry	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Everyday materials This concept involves becoming familiar with a range of materials, their properties, uses and how they may be altered or changed.	• 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. • Compare and group together a variety of everyday materials on the basis of their simple physical properties.	• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard for particular uses.			• Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets. • Understand how 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 the 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, oxidisation and the action of acid on bicarbonate of soda.	
Rocks			• Compare and group together different kinds of rocks on the basis of their simple, physical properties. • Relate the simple physical properties of some rocks to their formation (igneous or sedimentary). • Describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock. • Recognise that soiled are made from rocks and organic matter.			
States of matter				• 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 the temperature at which this happens in degrees Celsius (‘C),		

				building on their teaching in mathematics. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.		

Progression in Physics

Physics	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Light This concept involves understanding how light and reflection affect sight.			• Recognise that they 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 their eyes. • Recognise that shadows are formed when light from a light source is blocked by a solid object. • Find patterns in the way that the size of shadows change.			• Understand that light appears to travel in straight lines. • Use the idea that light travels on straight lines to explain that objects are seen because they give out or reflect light into the eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes. • 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.
Forces and magnets This concept involves understanding what causes motion.			• 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		• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Identify the effect of drag forces, such as	

			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 likes are facing.		air resistance, water resistance and friction that act between moving surfaces. • Understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect. • *Describe in terms of drag forces, why moving objects that are not driven tend to slow down.* • *Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.*	
Earth and Space This concept involves understanding what causes seasonal changes, day and night.					• 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.	
Seasonal changes	• Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies.					
Sound This concept involves understanding how sound is produced, how it travels and how it is heard.				• Identify how sounds are made, associating some of the, 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.		
Electricity This concept involves understanding circuits and their				• Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic		• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.

role in electrical applications.				parts, including cells, wires, bulbs, switches and buzzers. • Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors.		• 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.