



Over St. John's CE Primary School
 'Let your light Shine before others.' Matthew 5:16
Progression of Knowledge and Skills in Science

Skills Progression	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Five types of experimental skills 1. Observe over time 2. Pattern seeking 3. Identifying, classifying and grouping 4. Comparative and Fair test 5. Research using secondary sources	1. I can observe changes over time 2. I can observe changes and patterns 3. I can identify and classify 4. I can perform simple tests 4. I can perform a fair test with adult support	1. I can observe changes over time 2. I can observe changes and patterns 3. I can identify and classify 4. I can perform simple tests 4. I can perform a fair test with adult support	1. I can use simple equipment to observe closely including changes over time 2. I can use observations and ideas to suggest answers to questions noticing similarities, differences and patterns 3. I can identify, group and classify 4. I can perform simple comparative tests 5. I can gather and record data to help in answering questions including from secondary sources of information	1. I can make systematic and careful observations over time 2. I can ask questions surrounding patterns I have found in data. 3. I can gather, record, classify and present data in a variety of ways 4. I can set up simple practical enquiries, comparative and fair tests 5. I can use secondary sources with adult support to help clarify results seen.	1. I can make systematic and careful observations over time, looking at similarities and differences. 2. I can ask questions surrounding patterns I have found in data. 3. I can gather, record, classify and present data in a variety of ways to help in answering questions 4. I can set up simple practical enquiries, comparative and fair tests 5. I can use secondary sources with adult support to help clarify results seen.	1. I can observe over time, asking pertinent questions about similarities and differences. 2. I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. 3. I can classify, group and present data in a series of ways to help in answering questions 4. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision. 5. I can use secondary sources to help interpret results seen.	1. I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time 2. I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. 3. I can develop and use keys and other information to classify and describe objects in ways to help answer questions 4. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate 5. I can use secondary sources to help interpret results seen.
Questions	I can ask simple questions.	I can ask simple questions and recognise that they can be answered in different ways. I can use my observations and ideas to suggest answers to questions. I can communicate my ideas, what I can do and what I can find out in different ways.	I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum. I can communicate my ideas, what I can do and what I can find out in different ways.	I can ask relevant questions to answer my questions in different ways using scientific language from the national curriculum.	I can ask questions surrounding patterns I have found in data. I can ask relevant questions and use different types of scientific enquiries to answer them using scientific language from the national curriculum. I can ask questions surrounding patterns I have found in data. I can develop a deeper understanding through talk, asking questions about scientific phenomena, analysing functions and interactions more systematically.	I can plan different types of scientific enquiries to answer questions, including recognising variables where necessary. I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. I can observe over time, asking pertinent questions about similarities and differences.	I can plan different types of scientific enquiries to answer my own or others' questions, including recognising and controlling variables where necessary. I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time.

Using Scientific Equipment	<p>I can use magnifying glasses to look at objects in more detail I can measure out ingredients using scientific and mathematic equipment.</p>	<p>I can use simple equipment to observe closely I can use hand lenses and egg timers.</p>	<p>I can use simple equipment to observe closely including changes over time.</p> <p>I can ask my own questions about what I notice I can use hand lenses and egg timers.</p>	<p>I can set up simple practical enquiries, comparative and fair tests.</p> <p>I can make systematic and careful observations over time.</p> <p>I can take measurements using standard units, using a range of equipment.</p> <p>I can set up simple practical enquiries, comparative and fair tests.</p>	<p>I can set up simple practical enquiries, comparative and fair tests.</p> <p>I can take measurements, using a range of scientific equipment, with increasing accuracy and precision.</p>	<p>I can 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>I can take measurements, using a range of scientific equipment, including thermometers and data loggers, with increasing accuracy and precision, taking repeat readings when appropriate.</p> <p>I can make my own decisions and select the most appropriate type of scientific enquiry to use and recognise how to set up a comparative and fair test.</p>
Recording Data	<p>I can record observations in ways that are important and meaningful to me.</p>	<p>I can gather and record data to help in answering questions.</p> <p>I can use simple scientific language such as: with help.</p>	<p>I can gather and record data to help in answering questions including from secondary sources of information.</p>	<p>I can gather, record, classify and present data in a variety of ways.</p> <p>I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p>	<p>I can gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p>	<p>I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>I can use test results to set up further comparative and fair tests.</p>	<p>I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>I can use test results to make predictions to set up further comparative and fair tests.</p>
Reporting on Findings				<p>I can report on findings from enquiries, using presentations of results and conclusions I can use results to draw simple conclusions.</p> <p>I can use secondary sources with adult support to help clarify results seen.</p>	<p>I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>I can use results to draw simple conclusions, make predictions for new values and suggest improvements.</p> <p>I can use secondary sources with adult support to help clarify results seen. I can classify, group and present data in a series of ways to help in answering questions.</p>	<p>I can report and present findings from enquiries in oral and written forms such as displays and other presentations.</p> <p>I can use results to draw more complex conclusions, make predictions for new values and suggest improvements.</p> <p>I can use secondary sources to help interpret results seen.</p> <p>I can classify, group and present data in a series of ways to help in answering questions.</p>	<p>I can 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>I can use results to draw more complex conclusions, make predictions for new values and suggest improvements and raise further questions.</p> <p>I can use secondary sources to help interpret results seen.</p> <p>I can develop and use keys and other information to classify and describe objects in ways to help answer questions.</p>

Using Scientific Evidence				<p>I can identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>I can use straightforward scientific evidence to answer questions or to support my findings.</p>	<p>I can identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>I can use straightforward scientific evidence to answer questions or to support my findings .</p>	<p>I can identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>I can justify and evaluate my own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources.</p>
Vocabulary	question, answer, find out, observe, measure, record.	question, answer, find out, identify, observe, classify, sort, group, describe, test, compare, contrast, measure, length, height, mass/weight, time, temperature, record, results, table, chart, map, pictograph, block graph, bar chart, diagrams, equipment, data.	research, comparative test, fair test, systematic, careful observation, accurate measurements, data, gather, record, classify, present, labelled diagrams, keys, bar chart, tables, explanations, conclusion, predictions, differences, similarities, changes, evidence, improve, secondary sources, guides, construct, interpret.	plan, variable, measurements, accuracy, precision, repeat readings, reporting, scientific diagrams, labels, classification, keys, scatter graph, bar graph, line graph, causal relationship, explanation, degree of trust, evidence, support, refute, describe, patterns, systematic, quantitative measurements.			

Progression of knowledge and skills based on subject areas							
Plants	<p>I know that plants need sun and water to grow.</p> <p>I know some plants grow from seeds.</p> <p>I know most plants need soil and nutrients (food) to grow.</p> <p><i>Key vocabulary: Flower, plant, bulb, seed, root, leaves.</i></p>	<p>I know the name of a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>I know the basic structure of a variety of common flowering plants, including trees.</p> <p><i>Key vocabulary: Leaves, trunk, branch, root, seed, bulb, flower, stem, wild, deciduous, evergreen, blossom, bud, petal, stalk, bark, fruit</i></p>	<p>I know the basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plants.</p> <p>I know seeds and bulbs grow into mature plants and can observe and describe them.</p> <p>I know that plants need water, light and a suitable temperature to grow and stay healthy and can observe and describe them.</p> <p><i>Key vocabulary: Leaves, flowers, blossom, petals, fruit, roots, bulb, soil, earth, shoot, seed, trunk, branches, stem, produce, leaf, berry, branch, shade, grow, sun, warm, healthy, germinate, bark, bud, stalk, light, water</i></p> <p><i>Names of plants in their local environment for example grass, clover, daisy, buttercup, dandelion, oak, holly, daffodil, tulip etc. and plants we grow to eat such as lettuce, tomatoes, cucumber, radish, herb etc</i></p>	<p>I know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers and how to identify and describe them.</p> <p>I know 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 and I can explore them.</p> <p>I know the way in which water is transported within plants and can investigate it.</p> <p>I know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal and I can explore this.</p> <p><i>Key vocabulary: pollination, seed formation, seed dispersal, roots, nutrients, stem/trunk, leaves, flowers, reproduction, growth, life cycle, sunlight, photosynthesis water/minerals, fruit, germination, seedling, pollen, style, stigma, ovule, ovary, anther, filament</i></p>			

<p>Materials/ State of matter</p>	<p>I know that objects are made from different materials.</p> <p>I know about similarities and differences in relation to places, objects, materials and living things.</p> <p>I know about the features of my immediate environment and how environments might vary from one another.</p> <p>I know how to make observations of animals and plants and explain why some things occur, and talk about changes.</p> <p><i>Key vocabulary: melt, freeze, ice, mix, stir</i></p>	<p>I know how to distinguish objects from materials, describe their properties, identify and group everyday materials.</p> <p>I know how to distinguish between an object and the material from which it is made.</p> <p>I know the name of a variety of everyday materials, including wood, plastic, glass, metal, water, and rock and can identify them.</p> <p>I know the simple physical properties of a variety of everyday materials and can describe them.</p> <p>I know how to compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p><i>Key vocabulary: hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, opaque, see-through, cardboard, foil, elastic, paper, fabric, rock, brick, object, material, wood, plastic, glass, metal, rubber, wood, clay.</i></p>	<p>I know how to distinguish objects from materials, describe their properties, identify and group everyday materials and compare their suitability for different uses.</p> <p>I know the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses and how to identify and compare them.</p> <p>I know the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching and how to describe them.</p> <p><i>Key vocabulary: Waterproof, fabric, rubber, rock, paper, cardboard, wood, metal, plastic, glass, brick, twisting, squashing, bending, matches, flexible, rigid, opaque, transparent, translucent, reflective/non-reflective.</i></p>		<p>I know whether materials are solids, liquids or gases and can compare and group materials together, according to these properties.</p> <p>I know that some materials change state when they are heated or cooled and can observe and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <p>I know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>I know how to use my knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p><i>Key vocabulary: Solid, liquid, gas, molecules, state change, properties, matter, melt, freeze, temperature, process, condensation, evaporation, water vapour, energy, precipitation, collection, melting point, boiling point, water cycle.</i></p>	<p>I know how to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</p> <p>I know that some materials will dissolve in liquid to form a solution, and can recognise this and describe how to recover a substance from a solution.</p> <p>I know how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>I know that dissolving, mixing and changes of state are reversible changes and can demonstrate this.</p> <p>I know 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 and can explain this.</p> <p><i>Key vocabulary: Thermal, electrical, insulator, conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible change, irreversible change, burning, rusting, new material, pure, impurity</i></p>	
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<p>Animals, including humans</p>	<p>I know that different animals have different body parts.</p> <p>I know that different animals like different foods and live in different places.</p> <p>I know that some animals are big and some animals are small.</p> <p>I know that butterflies do not start out looking like butterflies.</p> <p>I know how to talk about different places animals might live.</p> <p>I know that some animals hibernate.</p> <p>I know that some animals are adapted to live under the sea and that humans are adapted to live on land.</p> <p>I know that if I wash my hands then that will kill off germs.</p> <p>I know about the importance of a healthy diet.</p> <p>I know I cannot eat foods like chips and pizza every day and I need a variety of food.</p> <p>I know about the importance of a healthy exercise regime.</p> <p>I know that exercise is good for my body.</p> <p><i>Key vocabulary: baby, child, toddler, adult, body part (naming them)</i></p>	<p>I know how to describe and compare observable features of animals from a range of groups.</p> <p>I know and can group animals according to what they eat.</p> <p>I know the names of a variety of common animals including fish, amphibians, reptiles, mammals and birds and can identify them.</p> <p>I know the names of a variety of common animals that are carnivores, herbivores and omnivores and can identify them.</p> <p>I know the names and locate parts of the human body, including those related to the senses.</p> <p>I know how to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>I know the names and can, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>I know how to take care of animals taken from their habitat and understand the need to return them safely to their homes.</p> <p><i>Key vocabulary: Amphibians, birds, fish, mammals, reptiles, carnivores, herbivore, omnivore, sight, hearing, touch, taste, smell, head, ear, mouth, leg, eye, teeth, hooves, paws, feathers, claw, fin, scales, fur, beak, body, tail, wing.</i></p>	<p>I know the names and how to locate parts of the human body, including those related to the senses and can describe them.</p> <p>-I know the basic needs of animals for survival and the main changes as offspring from young animals, including humans, grow into adults and can describe them.</p> <p>I know what animals eat, how they get their food from other animals and/or plants and can group them according to this. I know how to use simple food chains to describe these relationships.</p> <p>I know the basic needs of animals, including humans, for survival (water, food and air) and can describe this.</p> <p>I know the importance for humans of exercise, eating the right amounts of different types of food, and hygiene and can describe this</p> <p><i>Key vocabulary: Living, dead, never alive, offspring, reproduction, growth, child, young, parent, old, meat, fish, vegetables, exercise, breathing, hygiene, germs, disease, balance.</i></p>	<p>I know 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 and can identify this.</p> <p>I know that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p><i>Key vocabulary: Nutrients, nutrition, carbohydrates, protein, fats, vitamins, minerals, water, fibre, skeleton, bones, joints, endoskeleton, exoskeleton, hydrostatic skeleton, vertebrates, invertebrates, muscles, contract, relax, sugar, ribs, spine, skull, support, protect, move.</i></p>	<p>I know the simple functions of the basic parts of the digestive system in humans and can describe them.</p> <p>I know the different types of teeth in humans and their simple functions and can identify them.</p> <p>I know a variety of food chains, identifying producers, predators and prey and can construct and interpret them.</p> <p><i>Key vocabulary: Herbivore, Carnivore, omnivore, digestive system, tongue, mouth, teeth, oesophagus, stomach, small intestine, large intestine, canine, incisor, molar, premolar, producer, consumer, digestion, saliva, nutrients, rectum, anus, predator, prey, food chain</i></p>	<p><i>(Taught in Living Things unit and in Y5 PSCH lessons)</i></p> <p>I know the changes as humans develop to old age, including changes experienced in puberty and how to describe them.</p> <p><i>Key vocabulary: Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty, Hormone, Sexual, Asexual, reproduction, fertilisation, pregnancy, adolescent, death</i></p>	<p>I know the names of the main parts of the human circulatory system, and can describe the functions of the heart, blood vessels and blood.</p> <p>I know the impact of diet, exercise, drugs and lifestyle on the way bodies function.</p> <p>I know the ways in which nutrients and water are transported within animals, including humans and how to describe them.</p> <p><i>Key vocabulary: Oxygenated, Deoxygenated, carbon dioxide, diet, Valve, Exercise, Respiration Circulatory system, heart, lungs, blood vessels, pulse, rate, pumps, artery, vein, pulmonary, alveoli, capillary, digestive, transport, gas exchange, villi, nutrients, water, oxygen, alcohol, drugs, tobacco.</i></p>
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<p>Living things and their habitats</p>	<p>I know similarities and differences in relation to living things and their habitats.</p> <p>I know about the features of my own immediate environment and how environments might vary from one another and can talk about them.</p> <p>I know how to make observations of animals and plants and explain why some things occur, and talk about changes.</p> <p><i>Key vocabulary: nocturnal, woodland, forest, pond</i></p>		<p>I know whether things are alive, dead or have never lived and can identify these.</p> <p>I know the differences between things that are living, dead, and things that have never been alive and how to explore and compare them.</p> <p>I know the names of different plants and animals and why they are suited to different habitats.</p> <p>I know that most living things live in habitats to which they are suited and can identify why, and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>I know the names of a variety of plants and animals in their habitats, including micro-habitats and can identify them.</p> <p>I know how animals obtain their food from plants and other animals, using the idea of a simple food chain, and can identify and name different sources of food.</p> <p><i>Key vocabulary: living, dead, never been alive, habitats, food, food chain, shelter, sea shore/beach, woodland, ocean, rainforest, conditions, desert, damp, shade, suited, suitable, basic needs, pond.</i></p>		<p>I know that living things can be grouped in a variety of ways.</p> <p>I know that classification keys help group, identify and name a variety of living things in their local and wider environment and can use them.</p> <p>I know that environments can change and that this can sometimes pose dangers and have an impact on living things and how to recognise that.</p> <p><i>Key vocabulary: Environment, flowering, nonflowering, vertebrates, fish, amphibians, reptiles, mammals, invertebrate, human impact, nature reserves, deforestation, classification, classification keys, positive, negative, migrate, hibernate</i></p>	<p>I know the differences in the life cycles of a mammal, an amphibian, an insect and a bird and how to describe them.</p> <p>I know the changes as humans/animals develop to old age and how to describe them. <i>(From Animals, including humans)</i></p> <p>I know the life process of reproduction in some plants and animals and how to describe them.</p> <p><i>Key vocabulary: life cycle, mammal, reproduction, survive, basic needs, reproduce, fertilises, egg, live young, metamorphosis, plantlets, gestation, runners, bulbs, cutting Baby, Toddler, Teenager, Elderly, Growth, adolescent, death</i></p>	<p>I know 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 and can describe them.</p> <p>I know that plants and animals are classified based on specific characteristics and can give reasons for classifying them.</p> <p><i>Key vocabulary: flowering, non-flowering, vertebrates, fish, amphibians, reptiles, mammals, invertebrate, human impact, nature reserves, deforestation, bacteria, microorganism, organism, birds</i></p>
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Forces and magnets

I know how things move on different surfaces and can compare them.

I know that some forces need contact between two objects, but magnetic forces can act at a distance.

I know that everyday materials can be grouped together on the basis of whether they are attracted to a magnet and can identify some magnetic materials.

I know that magnets have two poles and can describe what they are.

I know that two magnets will attract or repel each other, depending on which poles are facing and can predict which will happen.

I know that magnets attract or repel each other and can describe when this happens.

I know that magnets attract some materials and not others and can describe why this happens.

Key vocabulary:
Force, push, pull, friction, surface, magnet, magnetic force, attract, repel, compass, twist, contact force, non-contact force, horseshoe magnet, magnetic material, metal, iron, steel, poles, north pole, south pole

I know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object and can explain this.

I know the effects of air resistance, water resistance and friction, that act between moving surfaces and can identify them.

I know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect and can recognise them.

Key vocabulary:
Air resistance, water resistance, friction, gravity, Newton, gears, pulleys, force, push, pull, opposing, streamline, brake, mechanism, lever, cog, simple machine, Newton meter (N), mass, earth, balance, drag force, springs, floats, force meter.

Rocks

I know some differences in rocks based on their appearance and simple physical properties and how to compare and group them together based on this.

I know how fossils are formed when things that have lived are trapped within rock.

I know that soils are made from rocks and organic matter.

Key vocabulary: appearance, physical, properties, hard/soft, shiny/dull, rough/smooth, permeable/ impermeable fossils, sedimentary, igneous, metamorphic, rock, soils, organic matter, buildings, gravestones, grains, crystals, classification

Light				<p>I know that we need light in order to see things and that dark is the absence of light.</p> <p>I know that light is reflected from surfaces.</p> <p>I know that light from the sun can be dangerous and that there are ways to protect eyes.</p> <p>I can find patterns in the way that the size of shadows change.</p> <p>I know that it is not safe to look directly at the sun, even when wearing dark glasses.</p> <p>I know that shadows are formed when the light from a light source is blocked by an opaque object shadows change.</p> <p><i>Key vocabulary:</i> <i>Light source, dark, reflect, ray, mirror, bounce, visible, straight, opaque, shadow, block, transparent, translucent, absence of light, shiny, matt, surface, sunlight, ray, visible.</i></p>			<p>-I know how to recognise that light appears to travel in straight lines.</p> <p>I know that light travels in straight lines and can use this to explain that objects are seen because they give out or reflect light into the eye.</p> <p>I know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</p> <p>I know that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p><i>Key vocabulary:</i> <i>Light source, dark, reflect, ray, mirror, bounce, visible, beam, glare, travel, straight, opaque, shadow, block, transparent, translucent, reflect, absorb, emitted, scattered, refraction</i></p>
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Sound

I know how sounds are made, associating some of them with something vibrating.

I know that vibrations from sounds travel through a medium to the ear.

I know how to find patterns between the pitch of a sound and features of the object that produced it.

I know how to find patterns between the volume of a sound and the strength of the vibrations that produced it.

I know that sounds get fainter as the distance from the sound source increases.

*Key vocabulary:
sound, source, vibrate, vibration, travel, pitch, high, low, volume, faint, loud, quiet, insulation, soundwaves, decibels, ear, ear drum, particles.*

Electricity					<p>I know that common appliances that run on electricity and how to identify which ones.</p> <p>I know the components of a simple series electrical circuit and the names of its basic parts, including cells, wires, bulbs, switches and buzzers and can construct one.</p> <p>I know 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 and can identify when this will happen.</p> <p>I know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>I know some common conductors and insulators, and associate metals with being good conductors.</p> <p><i>Key vocabulary:</i> <i>Electricity, electric current, appliances, mains, crocodile clips, wires, bulb, battery cell, battery holder, motor, buzzer, switch, conductor, electrical insulator, component, circuit, complete circuit, positive, negative, connect, loose connection, short circuit.</i></p>		<p>I know the brightness of a lamp or the volume of a buzzer is associated with the number and voltage of cells used in the circuit.</p> <p>I know how to compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p> <p>I know recognised symbols for representing a simple circuit in a diagram and can use them.</p> <p><i>Key vocabulary:</i> <i>Electricity, neutrons, protons, electrons, nucleus, atom, electric current, appliances, mains, crocodile clips, wires, bulb, battery cell, battery holder, motor, buzzer, switch, conductor, electrical insulator, conductor, voltage, circuit.</i></p>
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Earth and space

I know the movement of the Earth, and other planets, relative to the Sun in the solar system and can describe them

I know the movement of the Moon relative to the Earth and can describe it.

I know the Sun, Earth and Moon are approximately spherical bodies.

I know the Earth's rotation can explain day and night and the apparent movement of the sun across the sky.

I know that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006).

I know that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).

Key vocabulary: Phases of the Moon, star, constellation, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, Dwarf planet, Earth, planets, Sun, solar system, Moon, celestial body, sphere/spherical, rotate/rotation, night & day, orbit, opinion/fact, support/refute, accuracy, precision, scatter graphs, line graphs, geocentric & heliocentric models, shadow clocks, sundials, eclipse, light, reflection, telescope, satellite, tide, mass, gravity

<p>Evolution and inheritance</p>							<p>I know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>I know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>I know that animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p><i>Key vocabulary:</i> <i>Fossils, Reproduction, Genetics, Mutation, Competition, Survival of the Fittest, Evidence, offspring, characteristics, vary/variation, inherit/inheritance, suited/suitable, environment, natural selection, evolution, adapted/adaptation, fossils, theory, opinion</i></p>
<p>Seasonal changes</p>	<p>I know the seasons of Autumn, Winter, Summer and Spring and ways to identify them.</p> <p>I know there are seasonal colours and can identify some.</p> <p>I know that lots of new life begins in the Spring time.</p> <p>I know appropriate clothing for the seasons and can choose which they are.</p> <p><i>Key vocabulary:</i> <i>seasons, winter, summer, spring, autumn, weather</i></p>	<p>I know there are changes across the four seasons and can identify them.</p> <p>I know the weather associated with the seasons and can describe them and how day length varies.</p> <p>I know that it is not safe to look directly at the sun, even when wearing dark glasses.</p> <p><i>Key vocabulary:</i> <i>weather, sunny, rain/rainy, wind/windy, snow/snowy, seasons, winter, summer, spring, autumn, sun, sunrise, sunset, day, length, monsoon, storm, thunder, overcast, temperature, lightening, cloud/cloudy, forecast, warm, cold, hot, night, shadow</i></p>					