



***Creativity, Curiosity, Caring***

Science Curriculum Sequence

<b>Intent – Our Rationale</b>	From the moment we are born we are all scientists - exploring the world, questioning, making links, thinking about the possibilities. At Aboyne Lodge, we want our children to carry on through life maintaining this analytical mind, a scientific mind. We want them to understand the scientific ideas that have been developed in the past, to develop skills that allow them to test effectively these theories and then to take this knowledge and begin to think about new ideas and possibilities. We want our children to know that scientists play a huge role in preserving our planet and making sure the human race continues to co-exist and thrive with nature, to understand that scientists have the capacity to save our planet and mankind. We need the children to believe that they can become scientists of the future and that we need them to become scientists of the future. Questioning everything they read and hear is vital in this world and this is something we can train our children to do during science and in all aspects of their education.
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**Curriculum Drivers**

Sustainability	Cultural Diversity	Growth Mindset	Oracy
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	<b>Aut 1</b>	<b>Aut 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>Umbrella Themes</b>	<b>Marvellous Me</b>	<b>Wonderful World</b>	<b>Winter Wonderland</b>	<b>Once Upon a time</b>	<b>The Great outdoors</b>	<b>Off we go....</b>
<b>End of EYFS Key Knowledge</b>	Animals and Humans Naming the body parts. Describe how to stay healthy. We have five senses - taste, touch, sight, hearing, smell.	Seasons and signs of Autumn. In Autumn some leaves change colour and start to fall off the trees. We know that the farmers grow our food.	Seasons and Signs of Winter. In Winter it is cold and can be snowy and icy. Not much grows. The clothes we wear keep warm. There are hot and cold places in the world with different weather patterns.	Materials - Houses are made of different materials. We can name some materials and talk about them.	Animals and Life Cycles Baby animals are sometimes known by different names to the adult. Some baby animals do not look like the adult. Animals grow and change over time. Animals have babies. Plants grow from seeds or bulbs. Plants have roots, stems/stalks, leaves and flowers. Plants need light, water and food to grow.	Seasons and signs of summer
<b>Vocabulary</b>	question, answer, test, experiment, investigate, predict, sort, group, record, compare, describe, push, pull, force, ice, freeze, melt, boil, change, sink, float, plant, grow, flower, tree, soil, roots, stem, stalk, leaves, petals, trunk, branches, seed, bud, blossom, life-cycle, body parts, baby, adult, human, animal, materials, wood, metal, plastic, glass, rock, hard, soft, rough, smooth					



## Materials

At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic area</b>	Everyday Materials	Uses of Everyday Materials	Rocks, Fossils and Soils	Solids, Liquids and Gases	Changes of Materials	Evolution and Inheritance
<b>Know</b>	<ul style="list-style-type: none"> <li>- distinguish between an object and the material from which it is made</li> <li>- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>- describe the simple physical properties of a variety of everyday materials</li> <li>- compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul>	<ul style="list-style-type: none"> <li>- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>	<ul style="list-style-type: none"> <li>- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>- describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>- recognise that soils are made from rocks and organic matter</li> </ul>	<ul style="list-style-type: none"> <li>- compare and group materials together, according to whether they are solids, liquids or gases</li> <li>- 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)</li> <li>- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	<ul style="list-style-type: none"> <li>- 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</li> <li>- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>- demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes</li> </ul>	<ul style="list-style-type: none"> <li>- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul>



					associated with burning and the action of acid on bicarbonate of soda	
<b>Understand this Vocabulary</b>	Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard  Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid  Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil	Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material	Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, <b>fossils</b>

<b>Animals Including Humans</b>						
<b>At the end of each year pupils will:</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
<b>Topic Area</b>	Different Animals	Growth and Survival	Healthy Eating, Healthy Bodies	Teeth and Digestion	Life Cycles	Humans and Health
<b>Know</b>	- 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	- 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)	- 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	- 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	- 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	- 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



	<p>- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</p>	<p>- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>- identify that humans and some other animals have skeletons and muscles for support, protection and movement</p>		<p>-describe the changes as humans develop to old age</p> <p>- also see Life Cycles</p>	<p>lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans</p>
<p><b>Understand this Vocabulary</b></p>	<p>Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves</p> <p>Names of animals experienced first-hand from each vertebrate group</p> <p>Parts of the body including those linked to PSHE teaching</p> <p>Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue</p>	<p>Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta)</p>	<p>Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine</p>	<p>Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain</p>	<p>Puberty – (PSHE linked vocab)</p> <p>Body image, Self-image, Looks, Personality, Perception, Self-esteem, Affirmation, Comparison, Oestrogen, Fallopian Tube, Cervix, Develops, Breasts, Hips, Adam’s Apple, Scrotum, Genitals, Hair, Broader, Wider, Semen, Erection, Ejaculation, Urethra, Wet dream, Growth spurt, Larynx, Facial hair, Pubic hair, Hormones, Scrotum, Testosterone, Circumcised, Uncircumcised, Foreskin, Epididymis, Fertilised, Unfertilised, Conception, Sexual intercourse, Embryo, Umbilical cord, IVF, Foetus, Contraception, Pregnancy, Sanitary</p>	<p>Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle</p>



					products, Tampon, Pad, Towel, Liner, Hygiene, Age appropriateness, Legal, Laws, Responsible, Teenager, Responsibilities, Rights	
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Plants						
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic Area</b>	In the Garden	Growing Plants	Investigating Plants	Classification and Interdependence	Life Cycles	Classification
<b>Know</b>	<ul style="list-style-type: none"> <li>- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>- identify and describe the basic structure of a variety of common flowering plants, including trees</li> </ul>	<ul style="list-style-type: none"> <li>- observe and describe how seeds and bulbs grow into mature plants</li> <li>- find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	<ul style="list-style-type: none"> <li>- identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>- 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</li> <li>- investigate the way in which water is transported within plants</li> <li>- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul>	<ul style="list-style-type: none"> <li>- recognise that living things can be grouped in a variety of ways</li> <li>- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>- recognise that environments can change and that this can sometimes pose dangers to living things</li> <li>- construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<ul style="list-style-type: none"> <li>- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>- describe the life process of reproduction in some plants and animals</li> <li>- describe the changes as humans develop to old age</li> </ul>	<ul style="list-style-type: none"> <li>- 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</li> <li>- give reasons for classifying plants and animals based on specific characteristics</li> </ul>



<b>Understand this Vocabulary</b>	Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area Names of garden and wild flowering plants in the local area	As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy	Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)	Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate	Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering
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Evolution and Inheritance						
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic Area</b>	Seasons	Living things and their Habitats	Rocks, Fossils and Soils	Teeth and Digestion	Life Cycles	Evolution and Inheritance
<b>Know</b>	<ul style="list-style-type: none"> <li>- observe changes across the four seasons</li> <li>- observe and describe weather associated with the seasons and how day length varies</li> </ul>	<ul style="list-style-type: none"> <li>- explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>- 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</li> <li>- identify and name a variety of plants and animals in their habitats, including micro-habitats</li> <li>- describe how animals obtain their food from plants and other animals, using the idea of a simple</li> </ul>	<ul style="list-style-type: none"> <li>- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>- describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>- recognise that soils are made from rocks and organic matter</li> </ul>	<ul style="list-style-type: none"> <li>- describe the simple functions of the basic parts of the digestive system in humans</li> <li>- identify the different types of teeth in humans and their simple functions</li> </ul>	<ul style="list-style-type: none"> <li>- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>- describe the life process of reproduction in some plants and animals</li> <li>- describe the changes as humans develop to old age</li> </ul>	<ul style="list-style-type: none"> <li>- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>- identify how animals and plants are adapted to suit their</li> </ul>



		food chain, and identify and name different sources of food				environment in different ways and that adaptation may lead to evolution
<b>Understand this Vocabulary</b>	Weather (sunny, rainy, windy, snowy etc.) Seasons (winter, summer, spring, autumn) Sun, sunrise, sunset, day length	Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed Names of local habitats e.g. pond, woodland etc. Names of micro-habitats e.g. under ogs, in bushes etc.	Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil	Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils

Seasons, Habitats and Classification						
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic Area</b>	Seasons	Living things and their Habitats	Investigating Plants	Classification and Interdependence	Life Cycles	Classification
<b>Know</b>	<ul style="list-style-type: none"> <li>- observe changes across the four seasons</li> <li>- observe and describe weather associated with the seasons and how day length varies</li> <li>- also see In the Garden (plants)</li> </ul>	<ul style="list-style-type: none"> <li>- explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>- 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</li> </ul>	<ul style="list-style-type: none"> <li>- identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>- 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</li> <li>- investigate the way in which water is</li> </ul>	<ul style="list-style-type: none"> <li>- recognise that living things can be grouped in a variety of ways</li> <li>- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>- recognise that environments can change and that this</li> </ul>	<ul style="list-style-type: none"> <li>- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>- describe the life process of reproduction in some plants and animals</li> <li>- describe the changes as humans develop to old age</li> </ul>	<ul style="list-style-type: none"> <li>- 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</li> <li>- give reasons for classifying plants and animals based on</li> </ul>





		<ul style="list-style-type: none"> <li>- identify and name a variety of plants and animals in their habitats, including micro-habitats</li> <li>- 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</li> </ul>	<p>transported within plants</p> <ul style="list-style-type: none"> <li>- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul>	<p>can sometimes pose dangers to living things</p> <ul style="list-style-type: none"> <li>- construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>		specific characteristics
<b>Understand this Vocabulary</b>	<p>Weather (sunny,rainy, windy, snowy etc.)</p> <p>Seasons (winter, summer, spring, autumn)</p> <p>Sun, sunrise, sunset, day length</p>	<p>Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed</p> <p>Names of local habitats e.g. pond, woodland etc.</p> <p>Names of micro-habitats e.g. under logs, in bushes etc.</p>	<p>Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)</p>	<p>Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate</p>	<p>Puberty – the vocabulary to describe sexual characteristics</p>	<p>Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering</p>

Electricity						
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic Area</b>				Circuits and Components		Electricity
<b>Know</b>				<ul style="list-style-type: none"> <li>- identify common appliances that run on electricity</li> <li>- construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> </ul>		<ul style="list-style-type: none"> <li>- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> </ul>



				<ul style="list-style-type: none"> <li>- 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</li> <li>- recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>- recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>		<ul style="list-style-type: none"> <li>- 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</li> <li>- use recognised symbols when representing a simple circuit in a diagram</li> </ul>
<b>Understand this Vocabulary</b>				<p>Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</p> <p><b>N.B.</b> Children in Year 4 do not need to use standard symbols for electrical components, as this is taught in Year 6.</p>		<p>Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage</p> <p><b>N.B.</b> Children do not need to understand what voltage is, but will use volts and voltage to describe different batteries. The words “cells” and “batteries” are now used interchangeably.</p>



## Forces

At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic Area</b>		Uses of Everyday Materials	Forces and Magnets		Forces	
<b>Know</b>		<ul style="list-style-type: none"> <li>- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>	<ul style="list-style-type: none"> <li>- compare how things move on different surfaces</li> <li>- notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>- observe how magnets attract or repel each other and attract some materials and not others</li> <li>- 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</li> <li>- describe magnets as having two poles</li> <li>- predict whether two magnets will attract or repel each other, depending on which poles are facing</li> </ul>		<ul style="list-style-type: none"> <li>- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>- identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</li> </ul>	
<b>Understand this Vocabulary</b>		<p>Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard</p> <p>Properties of materials – as for Year 1 plus opaque,</p>	Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button		Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple	



		transparent and translucent, reflective, non-reflective, flexible, rigid  Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole		machines, levers, pulleys, gears	
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Light						
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic Area</b>	Some elements from 'Everyday Materials' and 'Different Animals'		Light and Shadows		Changes of Materials	Light
<b>Know</b>	- Describe the simple physical properties of a variety of everyday materials. (Y1 - 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. (Y1 - Animals, including humans)		- 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 the light from a light source is blocked by a solid object		- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets - know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution - use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating - give reasons, based on evidence from comparative and fair tests,	- 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



			- find patterns in the way that the size of shadows change		for the particular uses of everyday materials, including metals, wood and plastic - 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	- use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
<b>Understand this Vocabulary</b>	Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves Names of animals experienced first-hand from each vertebrate group Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through		Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous		Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material	As for Year 3 - Light, plus straight lines, light rays



Sound						
At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic Area</b>	Some elements 'Different Animals'			Sounds and Vibrations		
<b>Know</b>	- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)			- 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		
<b>Understand this Vocabulary</b>	Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves Names of animals experienced first-hand from each vertebrate group Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue			Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation		



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**Earth and Space**

At the end of each year pupils will:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Topic Area</b>	Seasons				Earth and Space	
<b>Know</b>	<ul style="list-style-type: none"> <li>- observe changes across the four seasons</li> <li>- observe and describe weather associated with the seasons and how day length varies</li> </ul>				<ul style="list-style-type: none"> <li>- describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>- describe the movement of the Moon relative to the Earth</li> <li>- describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li> </ul>	
<b>Understand this Vocabulary</b>	Weather (sunny, rainy, windy, snowy etc.) Seasons (winter, summer, spring, autumn) Sun, sunrise, sunset, day length				Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets	



## Working Scientifically

At the end of each year pupils will be:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> <li>- asking simple questions and recognising that they can be answered in different ways</li> <li>- observing closely, using simple equipment</li> <li>- performing simple tests</li> <li>- identifying and classifying</li> <li>- using their observations and ideas to suggest answers to questions</li> <li>- gathering and recording data to help in answering questions</li> </ul>	<ul style="list-style-type: none"> <li>- asking simple questions and recognising that they can be answered in different ways</li> <li>- observing closely, using simple equipment</li> <li>- performing simple tests</li> <li>- identifying and classifying</li> <li>- using their observations and ideas to suggest answers to questions</li> <li>- gathering and recording data to help in answering questions</li> </ul>	<ul style="list-style-type: none"> <li>- asking relevant questions and using different types of scientific enquiries to answer them</li> <li>- setting up simple practical enquiries, comparative and fair tests</li> <li>- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>- identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>- using straightforward scientific evidence to answer questions or to support their findings</li> </ul>	<ul style="list-style-type: none"> <li>- asking relevant questions and using different types of scientific enquiries to answer them</li> <li>- setting up simple practical enquiries, comparative and fair tests</li> <li>- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>- identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>- using straightforward scientific evidence to answer questions or to support their findings</li> </ul>	<ul style="list-style-type: none"> <li>- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>- using test results to make predictions to set up further comparative and fair tests</li> <li>- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li> <li>- identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	<ul style="list-style-type: none"> <li>- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>- using test results to make predictions to set up further comparative and fair tests</li> <li>- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li> <li>- identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>





