



St Oswald's Science LTP 2021

Reception

	Ongoing	Autumn 1	Autumn 2 (2 nd part)	Spring 1	Spring 2	Summer 1	Summer 2
Reception Topic	Working scientifically	Our Special Family	Christmas is coming	Traditional Tales	Colours Everywhere	People Who Help us	Journeys and Transport
Reception Skills/Knowledge	Asks simple questions and makes simple observations. Discusses their ideas with friends.	Can talk about some of the things they have observed such as plants, animals, natural and found objects.	Shows care and concern for living things and the environment.	Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.	Developing an understanding of growth, decay and changes over time.	Looks closely at similarities, differences, patterns and change.	ELG-Children know about similarities and differences in relation to places , objects, materials and living things. They talk about the features oftheir own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes

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Year 1

	On going	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 Topic	Working scientifically	Animals, including humans Seasons (autumn to winter)		Everyday materials	Weather and Seasons	Plants	
Year 1 Skills/Knowledge	<p>Ask simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Perform simple tests</p> <p>Identify and classify</p> <p>Use their observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions.</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>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Observe changes across the four seasons</p>		<p>Distinguish between the object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, metal, plastic, glass, water and rock,</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple properties</p>	<p>Observe and describe weather associated with the seasons and how day length varies.</p> <p>Observe changes across the four seasons</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants.</p> <p>Identify and name the roots, trunk, branches and leaves of trees.</p>	

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Year 2

	On going	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2 Topic	Working scientifically	Living things and their habitats (1)	Uses of everyday materials (1)	Animals, including humans	Plants	Uses of everyday materials (2)	Living things and their habitats (2)
Year 2 Skills/Knowledge	<p>Ask simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Perform simple tests</p> <p>Identify and classify</p> <p>Use their observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions.</p>	<p>Explore and compare the difference between things that are living, dead and things that have never been alive.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro habitats.</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name the different sources of food.</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p>	<p>Know that animals, including humans, have offspring which grow into adults</p> <p>Know the basic stages in a life cycle for animals, including humans.</p> <p>Find out and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and warmth to grow and stay healthy.</p>	<p>Find out how shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>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.</p>

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Year 3

	On going	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3 Topic	Working scientifically	Forces and magnets	Light	Rocks and soil (materials)		Plants	Animals, including humans
Year 3 Skills/Knowledge	<p>Ask relevant questions and use different types of scientific enquiries to answer them</p> <p>Set up simple practical enquiries, comparative and fair tests</p> <p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Use results to draw simple conclusions, make predictions for</p>	<p>Compare how things move on different surfaces. Know how a simple pulley works and use making lifting an object simpler</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract and repel each other and attract some materials and not others.</p> <p>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.</p> <p>Describe magnets as having two poles.</p>	<p>Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Find patterns in the way that the sizes of shadows change.</p>	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter</p>	<p>Identify and describe the functions of different parts of the flowering plant: roots, stem/trunk/leaves and flowers</p> <p>Explore the part flowers play in a flowering plants life cycle, including: pollination, seed formation and seed dispersal</p> <p>Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary between plants</p> <p>Know the way in which water is transported between plants</p>	<p>Identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food; they get their nutrition from what they eat.</p> <p>Know how nutrients, water and oxygen are transported within animals and humans.</p> <p>Know about the importance of a nutritious, balanced diet.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement:</p>	

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	<p>new values, suggest improvements and raise further questions</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>Use straightforward scientific evidence to answer questions or to support their findings</p>	<p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>				
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Year 4

	On going	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4 Topic	Working scientifically	Electricity	States of matter	Sound	Living things and their habitats	Animals, including humans	
Year4 Skills/Knowledge	<p>Ask relevant questions and use different types of scientific enquiries to answer them</p> <p>Set up simple practical enquiries, comparative and fair tests</p> <p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>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.</p> <p>Recognise that a switch opens and closes the circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Know the difference between a conductor and an insulator; giving examples of each.</p>	<p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>Observe that some materials change state when heated or cooled, and measure and research the temperature at which this happens in degrees Celsius.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Know how sound is made associating some of them with vibrating.</p> <p>Know what happens to a sound as it travels from its source to our ears.</p> <p>Know the correlation between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Know how sound travels from a source to our ears.</p> <p>Know the correlation between pitch and the object producing a sound.</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose danger to living things.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	

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	<p>Identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>Use straightforward scientific evidence to answer questions or to support their findings</p>	<p>Safety when using electricity.</p>				
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Year 5

	On going	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5 Topic	Working scientifically	Earth and space	Properties and changes of material		Forces in action Friction	Living things and their habitats	Animals, including humans (link with SRE)
Year 5 Skills/Knowledge	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, take repeat readings when appropriate</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Use test results to make predictions to set up further comparative and fair tests</p> <p>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>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Describe the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	<p>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>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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.</p>	<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object and the impact of gravity on our lives.</p> <p>Identify the effects of air resistance, water resistance and friction, which act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<p>Know the life cycle of different living things, e.g. Mammal, amphibian, insect bird.</p> <p>Know the differences between different life cycles.</p>	<p>Describe the changes as humans develop to old age.</p> <p>Compare the aging process of humans with other animals.</p> <p>Know the process of reproduction in plants.</p> <p>Know the process of reproduction in animals.</p>	

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Year 6

	On going	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 6 Topic	Working scientifically	Light	Electricity	Evolution and Inheritance		Animals, including humans	Living things and their habitats
Year 6 Skills/Knowledge	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, take repeat readings when appropriate</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Use test results to make predictions to set up further comparative and fair tests</p> <p>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>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Recognise that light appears to travel in straight lines.</p> <p>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.</p> <p>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.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p>Know how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</p>	<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>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>Use recognised symbols when representing a simple circuit in a diagram.</p>	<p>Know about evolution and can explain what it is.</p> <p>Know how fossils can be used to find out about the past.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>Recognise 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>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>Classify living things into broad groups according to observable characteristics and based on similarities and differences.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>	