



Riverside Primary Academy



Science Curriculum Overview - EYFS

Year group Subject	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
EYFS UW - understanding the World Specific Area	<p>EYFS 1 - Colours, shapes & sizes of leaves, acorns, fir cones, berries (safety), and other natural materials - Tuff tray activities to encourage the use of descriptive language; rough, smooth, prickly, shiny, jagged, bumpy soft and hard.. Watch changes of the leaves on trees within school grounds.</p>	<p>EYFS 1 - Watch changes of weather. Discuss colder weather. Colours of coats, gloves, hats etc. What we need to wear & do to keep us warm. How do birds get their food in the snow & ice? Role play area of bird hide. Experience of feeding birds.</p>	<p>EYFS 1 - Look at pictures of a range of buildings on the interactive whiteboard. Make a game of recognising which are homes for people or not. Dolls house - different rooms within my own home. Which are homes for pets? Introduce multi-cultural buildings. I live in Dunston - address. I go to RPA Nursery. Look at homes from the playgrounds.</p>	<p>EYFS 1 - Be taught how to look after the school pets - Rabbits and fish. To know pets need food & water. To know to be gentle with pets. To know some animals work on a farm. To know all animals are not pets - some are wild animals.</p>	<p>EYFS 1 - Continue to look after the school pets. Grow flowers and vegetables in pots and in planters outside of nursery entrance door. (Sweet peas, potatoes etc.) Show care and concern for living things in the environment</p>	<p>EYFS 1 - To use recycled materials to create items needed on their adventures. (Imaginative items). Create Goldilocks and the Bear Hunt indoor and outdoor learning environment - puppet theatre. Making and tasting porridge, porridge oats in the Tuff tray - using descriptive language.</p>
	<p>EYFS 2 - Note seasonal features (ready to compare to changes later in term). Discuss daily weather. Naming and grouping items collected on visit. Identifying features of items collected. Children to match labels (made by teacher) to items as an example of how they can make their own labels. Discuss what you find in the woods. Is it the same as the school play yard or their street? Explain Harvest Festival. Make food collection & talk</p>	<p>EYFS 2 - To know that birthdays are special days. To know that Christmas is a very important Christian celebration celebrated all around the world. To know that Christmas is a special time. To know Jesus was a special boy who became an important man. To know that some people do not celebrate Christmas if they have a different religion/ God. To use Google Earth to show the children a picture of the world. Physical</p>	<p>EYFS 2 - Animals Names and categories Collections of animals - vocabulary e.g. herd. Sinking and floating Chinese New Year (culture)</p>	<p>EYFS 2 - Recognise the similarities and differences between animals. Categories of animals - farm, pet, wild etc. Know that all animals need to be cared for but wild animals fend for themselves. Some animals are nocturnal. Know that animals can get sick if they are not cared for. Know animals move in different ways - flying, swimming etc. People around the world care for one another and their pets.</p>	<p>EYFS 2 - To know that some people do jobs that help us keep safe. To know that those jobs need special training & skills but they could learn to do them when they are older. We have rules to keep us safe; in school, in community, in our culture. Discuss tolerance for others who are different to you.</p>	<p>EYFS 2 - Discuss the difference between the sea, a river and a pond. What is a holiday? Different holiday activities. What you should wear in warm weather. Make a collage of hot places and cold places to visit. Name places children have heard of in the world. (Diversity). Extend their experience. Identify places on a map of the UK and World.</p>



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	about helping others.	changes of state - ice melting and freezing		The Easter Story.		
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Science Curriculum Overview -Key Stage One

Year group Subject	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
	<p>Working Scientifically objectives to be address throughout the academic year.</p> <p>Asking simple questions and recognising that they can be answered in different ways / observing closely / using simple equipment / performing simple tests / identifying and classifying / using their observations and ideas to suggest answers to questions / gathering and recording data to help in answering questions</p>					
Year 1 Science	<p><u>Seasonal Changes</u> Observe and describe weather associated with the seasons and how day length varies</p> <p><u>Animals (Humans)</u> Identify and name a variety of common animals that are carnivores, herbivores and omnivores. 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>Links to keeping healthy. Life Processes & Living Things - Humans & other mammals.</p>	<p><u>Seasonal Changes</u> Observe and describe weather associated with the seasons and how day length varies</p>	<p><u>Seasonal changes</u> Observe and describe weather associated with the seasons and how day length varies</p> <p><u>Materials</u> 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</p> <p>Suitable materials for building houses e.g. glass, brick, plastic.</p>	<p><u>Seasonal Changes</u> Observe and describe weather associated with the seasons and how day length varies</p> <p><u>Investigating Materials</u> Continue Materials objectives linked with Superheroes.</p> <p>What kinds of materials are stretchy? Investigate. Which materials are waterproof & why? Investigate. What kind of material do you think would make a good superhero suit?</p>	<p><u>Seasonal Changes</u> Observe and describe weather associated with the seasons and how day length varies Weather and seasons linked to plants.</p> <p><u>Plants</u> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.</p> <p>Habitats around school and local area. How do plants grow? Pupils to grow peas, French beans, lettuce, strawberries, and onions.</p>	<p><u>Seasonal Changes</u> Observe and describe weather associated with the seasons and how day length varies</p> <p><u>Animals and their habitats.</u> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>Do plants grow in the sea? Seaside habitats, ocean food chains. Rock pool investigations. Life processes.</p>



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Science Curriculum Overview -Key Stage One

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<p>Year 2 Science</p> <p><u>Working scientifically</u> (with forces).</p> <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>Gather and record data to help in answering questions.</p> <p>Investigating forces and the movement of vehicles.</p> <p>Seasons and weather around the world.</p>	<p><u>Materials</u></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>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</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>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Which materials can be recycled?</p>	<p><u>Animals Humans</u></p> <p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Offspring which grow</p> <p>Basic needs for survival water, food and air.</p> <p>Exercise food and hygiene</p> <p>PSHE Link - Physical Health and Wellbeing.</p> <p><u>Health Prevention</u> - The importance of sufficient good quality sleep for good health and that a lack of sleep can affect weight, mood and ability to learn.</p>	<p><u>Animals Chicks</u></p> <p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about 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>PSHE Link - Physical Health and Wellbeing, <u>Health Prevention</u> - Personal hygiene and germs including bacteria, viruses, how they are spread and treated, and the importance of handwashing.</p>	<p><u>Living things and their Habitats</u></p> <p>Explore and compare the difference between things that are living, dead, and things that have never been alive.</p> <p>Identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other.</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 different sources of food.</p> <p>Plant and Animal habitats</p> <p>Seed variations</p>	<p><u>Plants</u></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 a suitable temperature to grow and stay healthy.</p> <p>Identify garden plants</p> <p>Deciduous and evergreen trees</p> <p>Seeds and bulbs.</p> <p>What do plants need to grow?</p> <p>Structure of plants</p>	



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					Hatching butterflies and ladybirds	
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Science Curriculum Overview - Lower Key Stage Two

Year group Subject	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
	<p>Working Scientifically objectives to be addressed throughout the academic year.</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them / setting up simple practical enquiries, comparative and fair tests / making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers / gathering, recording classifying and presenting data in a variety of ways to help in answering questions / recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables / reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions / using results to draw simple conclusions, make predication for new values, suggest improvements and raise further questions / identifying differences, similarities or changes related to simple scientific ideas and processes / using straightforward scientific evidence to answer questions or to support their findings.</p>					
Year 3 Science	<p><u>Plants</u></p> <p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>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.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p><u>Day and night</u></p> <p>How does day and night occur. Why is it night-time in Australia when it is day time here?</p> <p><u>Materials - Rocks</u></p> <p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. 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><u>Animals and Humans</u></p> <p>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.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>Why do some ancient Greek buildings still stand? What kind of materials are they made from? Are all rocks the same in terms of hardness?</p> <p><u>PSHE Links - Physical Health and Well -Being - Healthy Eating</u></p> <p>What constitutes a healthy diet (including understanding calories and other nutritional content). The principles of planning and preparing a range of healthy meals. The characteristics of a poor diet and risks associated with unhealthy eating (including, for example, obesity and tooth decay) and other behaviours (e.g. the impact of alcohol on diet or health).</p>	<p><u>Forces and Magnets</u></p> <p>Compare how things move on different surfaces.</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 or repel each other and attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials on the basis on whether they are attracted to a magnet, and identify some magnetic materials.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p><u>Light</u></p> <p>Recognise that they need light in order to see things and that the 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 size of shadows changes</p>	



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Science Curriculum Overview - Lower Key Stage Two

Year group Subject	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
	<p>Working Scientifically objectives to be addressed throughout the academic year.</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them / setting up simple practical enquiries, comparative and fair tests / making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers / gathering, recording classifying and presenting data in a variety of ways to help in answering questions / recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables / reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions / using results to draw simple conclusions, make predication for new values, suggest improvements and raise further questions / identifying differences, similarities or changes related to simple scientific ideas and processes / using straightforward scientific evidence to answer questions or to support their findings.</p>					
Year 4 Science	<p><u>Animals and Humans</u></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>	<p><u>Working Scientifically</u></p> <p>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>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Insulators and conductors of heat.</p> <p>Temperatures and thermometers links with maths</p>	<p><u>States of Matter</u></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 they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p><u>Sound</u></p> <p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>	<p><u>Habitats And living things</u></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 dangers to living things.</p>	<p><u>Electricity</u></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 a 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>

PSHE Links - Physical Health and Well -Being Link - Healthy Eating

What constitutes a healthy diet (including understanding calories and other nutritional content).

The principles of planning and preparing a range of healthy meals.

The characteristics of a poor diet and risks associated with unhealthy eating (including, for example, obesity and tooth decay) and other behaviours (e.g. the impact of alcohol on diet or health).

Health Prevention about dental health and the benefits of good oral hygiene and dental flossing, including regular



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Science Curriculum Overview -Upper Key Stage Two

Year group Subject	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
	<p>Working Scientifically objectives to be addressed throughout the academic year.</p> <p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary / taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate / recoding data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs / Using test results to make predications to set up further comparative and fair tests / reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written form such as displays and other presentations / identifying scientific evidence that has been used to support or refute ideas or arguments.</p>					
<p>Year 5 Science</p>	<p><u>Materials and their properties</u></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><u>Earth and Space</u></p> <p>Describe the movement of the Earth, and other planets, relative to the Sun.</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>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	<p><u>Eco- Systems</u></p> <p>Rainforest Eco-system - where every living thing is interdependent.</p> <p>Rainforests contain the most diverse range and highest volume of plant and animal life found anywhere on earth.</p> <p>Investigate animals / habitats of the rainforest.</p> <p>Which animals are found in which layers of the rainforest?</p> <p>Rainforest food webs.</p>	<p><u>Living Things and Their Habitats</u></p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p> <p><u>Animals including Humans</u> Describe the changes as humans develop to old age.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; background-color: #fff9e6;"> <p>PSHE Links - Physical Health and Well -Being Link - Health Prevention -How to recognise early signs of physical illness, such as weight loss, or unexplained changes to the body.</p> </div>	<p><u>Forces</u></p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction, that 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>	



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Science Curriculum Overview -Upper Key Stage Two

Year group Subject	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
	<p>Working Scientifically objectives to be addressed throughout the academic year.</p> <p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary / taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate / recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs / Using test results to make predications to set up further comparative and fair tests / reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written form such as displays and other presentations / identifying scientific evidence that has been used to support or refute ideas or arguments.</p>					
<p>Year 6 Science</p>	<p><u>Evolution and Inheritance, Adaptations</u></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>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><u>Animals including Humans</u></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><u>Electricity</u></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><u>Light</u></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><u>Living things and Habitats</u></p> <p>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</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p> <p><u>Discuss Environment Careers</u></p> <p>Looking after and maintaining our school environment linked with playing an active role as a citizen.</p> <p>Discuss jobs which use or need science - link to careers fair.</p> <p>Discuss our reflective garden & how relaxing there can improve your well-being. Discuss how they relax at home after a hard day!</p>	

PSHE Links - Physical Health and Well -Being
Link - Healthy Eating
 What constitutes a healthy diet (including understanding calories and other nutritional content).
 The principles of planning and preparing a range of healthy meals.
 The characteristics of a poor diet and risks associated with unhealthy eating (including, for example, obesity and tooth decay) and other behaviours (e.g. the impact of alcohol on diet or health).
Health and Prevention - Personal hygiene and germs including bacteria, viruses, how they are spread and treated, and the importance of handwashing. The facts and science relating to allergies, immunisation and vaccination.