

## South Avenue Primary School

### Science End Points



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| <b>Science Curriculum Intent</b> | <p>At South Avenue, our curriculum is designed with the intent that each child becomes an ambitious, encouraging and resilient young person with a passion for learning and achieving.</p> <p>Through the teaching and learning of science, we encourage children to be inquisitive throughout their time at school and beyond. From EYFS up to KS2 our pupils will build up a body of key foundational knowledge and skills in core science areas. Pupils are encouraged to recognise the power of enquiry, rational explanation and develop a sense of excitement and curiosity while using key skills from Reading, Writing and Mathematics to explore scientific phenomena. We also believe it is important to promote respect for the living and non-living world around us including the importance of a healthy diet and exercise.</p> <p>We ensure that the Working Scientifically skills are built-on and developed throughout the children's time at school so that they can apply their knowledge of science through asking questions and conducting research, setting up tests, observing, recording data and evaluating their results.</p> |  |   |  |  |   |   |
| <b>Working Scientifically</b>    | <b>EYFS</b> <ul style="list-style-type: none"> <li>Learn new vocabulary and use it in everyday conversations</li> <li>Engage in non-fiction books</li> <li>Talk about what they see, using a wide vocabulary</li> </ul>   | <b>Year 1</b> <ul style="list-style-type: none"> <li>I can observe closely, using simple equipment.</li> <li>I can perform simple tests.</li> <li>I can identify and classify.</li> <li>I can gather and record data to help in answering questions.</li> <li>I can ask simple questions and recognise that they can be answered in</li> </ul> | <b>Year 2</b> <ul style="list-style-type: none"> <li>I can observe closely, using simple equipment.</li> <li>I can perform simple tests.</li> <li>I can identify and classify.</li> <li>I can gather and record data to help in answering questions.</li> <li>I can ask simple questions and recognise that they can be answered</li> </ul> | <b>Year 3</b> <ul style="list-style-type: none"> <li>I can gather, record, classify and present data in a variety of ways to help in answering questions.</li> <li>I can ask relevant questions and using different types of scientific enquiries to answer them.</li> <li>I can set up simple practical enquiries,</li> </ul> | <b>Year 4</b> <ul style="list-style-type: none"> <li>I can gather, record, classify and present data in a variety of ways to help in answering questions.</li> <li>I can ask relevant questions and using different types of scientific enquiries to answer them.</li> <li>I can set up simple practical enquiries,</li> </ul> | <b>Year 5</b> <ul style="list-style-type: none"> <li>I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>I can take measurements, using a range of scientific equipment, with increasing accuracy and precision,</li> </ul> | <b>Year 6</b> <ul style="list-style-type: none"> <li>I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>I can take measurements, using a range of scientific equipment, with increasing accuracy and precision,</li> </ul> |

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|  |  | <p>different ways.</p> <ul style="list-style-type: none"><li>• I can use my observations and ideas to suggest answers to questions.</li></ul> | <p>in different ways.</p> <ul style="list-style-type: none"><li>• I can use my observations and ideas to suggest answers to questions.</li></ul> | <p>comparative and fair tests.</p> <ul style="list-style-type: none"><li>• 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.</li><li>• I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li></ul> | <p>comparative and fair tests.</p> <ul style="list-style-type: none"><li>• 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.</li><li>• I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li></ul> | <p>taking repeat readings when appropriate.</p> <ul style="list-style-type: none"><li>• I can use test results to make predictions to set up further comparative and fair tests.</li><li>• 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.</li><li>• I can record data and results of increasing</li></ul> | <p>taking repeat readings when appropriate.</p> <ul style="list-style-type: none"><li>• I can use test results to make predictions to set up further comparative and fair tests.</li><li>• 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.</li><li>• I can record data and results of increasing</li></ul> |
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|  |  |  |  | <ul style="list-style-type: none"><li>• I can use straightforward scientific evidence to answer questions or to support my findings.</li><li>• I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li><li>• I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</li></ul> | <ul style="list-style-type: none"><li>• I can use straightforward scientific evidence to answer questions or to support my findings.</li><li>• I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li><li>• I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</li><li>• I can identify differences, similarities or</li></ul> | <p>complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <ul style="list-style-type: none"><li>• I can identify scientific evidence that has been used to support or refute ideas or arguments.</li></ul> | <p>complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <ul style="list-style-type: none"><li>• I can identify scientific evidence that has been used to support or refute ideas or arguments.</li></ul> |
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|                |   |   |  |  | changes related to simple scientific ideas and processes.  |   |   |
| <b>Biology</b> | <ul style="list-style-type: none"> <li>Plant seeds and care for growing plants.</li> <li>Understand the key features of the life cycle of a plant and an animal.</li> <li>Begin to understand the need to respect and care for the natural environment and all living things.</li> <li>Explore the natural world around them</li> <li>Describe what they see, hear and feel whilst outside</li> </ul> | <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>I can identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>I can describe and compare the structure</li> </ul> | <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>I can 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> <li>I can find out about and describe the basic needs of animals, including humans, for survival</li> </ul> | <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>I can identify that animals, including humans, need the right types and amount of nutrition, and that we cannot make our own food; they get nutrition from what they eat.</li> <li>I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul> | <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>I can describe the simple functions of the basic parts of the digestive system in humans.</li> <li>I can identify the different types of teeth in humans and their simple functions.</li> </ul> <p><b>Living Things</b></p> <ul style="list-style-type: none"> <li>I can recognise that living things can be grouped in a variety of ways.</li> <li>I can explore and use</li> </ul> | <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Chicks in Year R)</li> <li>I can describe the life process of reproduction in some plants and animals.</li> <li>I can describe the changes as humans develop to old age.</li> </ul> | <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>I recognise the impact of diet, exercise, drugs and lifestyle on the way our bodies function.</li> <li>I can describe the ways in which nutrients and water are</li> </ul> |

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|  | <ul style="list-style-type: none"> <li>Recognise some environments that are different from the one in which they live</li> <li>Understand the effect of changing seasons on the natural world around them.</li> </ul> | <p>of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <ul style="list-style-type: none"> <li>I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul> <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>I can identify and name a variety of common wild and garden plants, including deciduous and</li> </ul> | <p>(water, food and air).</p> <ul style="list-style-type: none"> <li>I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> <li>I can explore and compare the differences between things that are living, dead, and things that have never been alive.</li> <li>I can notice that animals, including humans, have offspring which grow into adults.</li> </ul> <p><b>Living Things</b></p> | <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>I can 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>I can identify and describe the functions of different parts of flowering plants: roots, stem/ trunk, leaves and flowers.</li> <li>I can investigate the way in which water is transported within plants.</li> </ul> | <p>classification keys to help group, identify and name a variety of living things in our local and wider environment.</p> <ul style="list-style-type: none"> <li>I recognise that environments can change and that this can sometimes pose dangers to living things.</li> <li>I can construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul> | <p>transported within animals, including humans.</p> <ul style="list-style-type: none"> <li>I 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>I recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>I can identify how animals and plants are adapted to suit their</li> </ul> |
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|  |  | <p>evergreen trees.</p> <ul style="list-style-type: none"><li>I can identify and describe the basic structure of a variety of common flowering plants, including trees.</li></ul> | <ul style="list-style-type: none"><li>I can 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>I can identify and name a variety of plants and animals in their habitats, including micro-habitats.</li></ul> <p><b>Plants</b></p> | <ul style="list-style-type: none"><li>I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li></ul> |  |  | <p>environment in different ways and that adaptation may lead to evolution.</p> <p><b>Living Things</b></p> <ul style="list-style-type: none"><li>I can 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>I can give reasons for classifying plants and animals based</li></ul> |
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|                  |  |  | <ul style="list-style-type: none"> <li>I can observe and describe how seeds and bulbs grow into mature plants.</li> <li>I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> |   |   |  | on specific characteristics. |
| <b>Chemistry</b> | <ul style="list-style-type: none"> <li>Use all their senses in hands-on exploration of natural materials</li> <li>Explore collections of materials with similar and/or different properties</li> <li>Talk about the differences</li> </ul> | <b>Materials</b> <ul style="list-style-type: none"> <li>I can describe the simple physical properties of a variety of everyday materials.</li> <li>I can compare and group together a variety of everyday materials on the basis of</li> </ul> | <b>Materials</b> <ul style="list-style-type: none"> <li>I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> <li>I can identify and compare</li> </ul>    | <b>Rocks and soils</b> <ul style="list-style-type: none"> <li>I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>I can describe in simple terms how fossils are formed when</li> </ul> | <b>Materials and Changes of State</b> <ul style="list-style-type: none"> <li>I can compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>I observe that some materials change state when they are</li> </ul> | <b>Materials and Changes of State</b> <ul style="list-style-type: none"> <li>I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</li> <li>I can use knowledge of solids, liquids and gases to</li> </ul> |                              |

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|  | between materials and changes they notice | <p>their simple physical properties.</p> <ul style="list-style-type: none"><li>• I can distinguish between an object and the material from which it is made.</li><li>• I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</li></ul> | <p>the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> | <p>things that have lived are trapped within rock.</p> <ul style="list-style-type: none"><li>• I recognise that soils are made from rocks.</li></ul> | <p>heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <ul style="list-style-type: none"><li>• I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li></ul> | <p>decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <ul style="list-style-type: none"><li>• I can demonstrate that dissolving, mixing and changes of state are reversible changes.</li><li>• I can 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</li></ul> |  |
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|  |  |  |  |  |  | <p>acid on bicarbonate of soda.</p> <ul style="list-style-type: none"><li>• I can 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>• I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including</li></ul> |  |
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|                |   |  |  |  |  | metals, wood and plastic.   |   |
| <b>Physics</b> | <p>Children engage in a topic about Space learning about</p> <ul style="list-style-type: none"> <li>planets and the solar system</li> <li>transport into Space</li> <li>astronauts and how they live in Space.</li> <li></li> </ul> | <p><b>Changing Seasons</b></p> <ul style="list-style-type: none"> <li>I can observe changes across the four seasons.</li> <li>I can observe and describe weather associated with the seasons and how day length varies.</li> </ul> |  | <p><b>Light</b></p> <ul style="list-style-type: none"> <li>I can recognise that we need light in order to see things and that dark is the absence of light.</li> <li>I notice that light is reflected from surfaces.</li> <li>I recognise that light from the sun can be dangerous, if viewed directly, and that there are ways to protect our eyes.</li> <li>I recognise that shadows are formed when the light from a</li> </ul> | <p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>I can identify common appliances that run on electricity.</li> <li>I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</li> <li>I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is</li> </ul> | <p><b>Earth and Space</b></p> <ul style="list-style-type: none"> <li>I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</li> <li>I can describe the movement of the Moon relative to the Earth.</li> <li>I can describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>I can use the idea of the Earth's rotation to explain day</li> </ul> | <p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>I can 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> </ul> |

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|  |  |  |  | <p>light source is blocked by a solid object.</p> <ul style="list-style-type: none"><li>I can find patterns in the way that the size of shadows change.</li></ul> <p><b>Forces</b></p> <ul style="list-style-type: none"><li>I can compare how things move on different surfaces.</li><li>I notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li><li>I can observe how magnets attract or repel each other and attract some materials and not others.</li></ul> | <p>part of a complete loop with a battery.</p> <ul style="list-style-type: none"><li>I 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>I recognise some common conductors and insulators, and associate metals with being good conductors.</li></ul> <p><b>Sound</b></p> <ul style="list-style-type: none"><li>I can identify how sounds are made, associating some of them with something vibrating.</li></ul> | <p>and night and the apparent movement of the sun across the sky.</p> <p><b>Forces</b></p> <ul style="list-style-type: none"><li>I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li><li>I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</li><li>I can recognise that some mechanisms, including</li></ul> | <ul style="list-style-type: none"><li>I can use a wide range of recognised symbols when representing a simple circuit in a diagram.</li></ul> <p><b>Light</b></p> <ul style="list-style-type: none"><li>I can recognise that light appears to travel in straight lines.</li><li>I can 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.</li><li>I can explain that we see things because light travels from light sources to our eyes or from</li></ul> |
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|  |  |  |  | <ul style="list-style-type: none"><li>• I can 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>• I can describe magnets as having two poles.</li><li>• I can 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>• I recognise that vibrations from sounds travel through a medium to the ear.</li><li>• I can find patterns between the pitch of a sound and features of the object that produced it.</li><li>• I can find patterns between the volume of a sound and the strength of the vibrations that produced it.</li><li>• I recognise that sounds get fainter as the distance from the sound source increases.</li></ul> | <p>levers, pulleys and gears, allow a smaller force to have a greater effect.</p> | <p>light sources to objects and then to our eyes.</p> <ul style="list-style-type: none"><li>• I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li></ul> |
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