

## Progression of Skills In Science

|  | <u>Year 1</u>   | <u>Year 2</u>  | <u>Year 3</u>   |
|--|---|--|---|
| <u>Topics</u>                          | <ul style="list-style-type: none"> <li>Autumn Term 1- Materials</li> <li>Autumn Term 2- Seasons</li> <li>Spring 1- Living things (Animals)</li> <li>Spring 2- Living things (Human body)</li> <li>Summer 1- Plants and growth (plants)</li> <li>Summer 2-Plants and growth (trees)</li> </ul>   | <ul style="list-style-type: none"> <li>Autumn Term 1 and 2- Plants</li> <li>Spring 1- Uses of everyday Materials</li> <li>Spring 2- Investigating Materials</li> <li>Summer 1- Animals including Humans</li> <li>Summer 2- Living Things and their Habitats - Food Chains</li> </ul>   | <ul style="list-style-type: none"> <li>Autumn Term 1- Animals Including Humans</li> <li>Autumn Term 2- Forces</li> <li>Spring 1 – Rocks and Soils</li> <li>Spring 2 - Plants</li> <li>Summer 1 and 2- Light and Shadows</li> </ul>  |
| <u>Working Scientifically</u>          | <p>Year 1 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways – All units</li> <li>observing closely, using simple equipment - Aut 1 Materials – Aut 2 - Seasons – Sum - Plants and Growth</li> <li>performing simple tests – Sum - Plants and Growth</li> <li>identifying and classifying - Aut 1 Materials – Spr – Living Things</li> <li>using their observations and ideas to suggest answers to questions – Aut 2 – Seasons – Sum - Plants and Growth – Spr – Living Things</li> <li>gathering and recording data to help in answering questions – All Units</li> </ul> | <p>Year 2 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways – Aut Plants - Spr 1 – Uses of everyday Materials – Spr Investigating Materials Materials – Sum 1 Animals inc Humans - Sum 2- Living Things and their Habitats - Food Chains</li> <li>observing closely, using simple equipment - Spr 1 – Uses of everyday Materials – Spr Investigating Materials</li> <li>performing simple tests - Spr 1 – Uses of everyday Materials – Spr Investigating Materials</li> <li>identifying and classifying - Spr 1 – Uses of everyday Materials – Spr Investigating Materials – Sum 1 Animals inc Humans - Sum 2- Living Things and their Habitats - Food Chains</li> <li>using their observations and ideas to suggest answers to questions - Spr 1 – Uses of everyday Materials – Spr Investigating Materials – Sum 1 Animals inc Humans - Sum 2- Living Things and their Habitats - Food Chains</li> <li>gathering and recording data to help in answering questions – Aut Plants - Spr 1 – Uses of everyday Materials – Spr Investigating Materials –</li> <li>Elements within all units covered in Year 2.</li> </ul> | <p>Year 3 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them -Autumn Term 1- Animals Including Humans – Aut Term Forces – Spr 1 Rocks and Soil - Spr 2 Plants – Sum 1 &amp; 2 – Light &amp; Shadow</li> <li>setting up simple practical enquiries, comparative and fair tests – Aut Term Forces – Spr 1 Rocks and Soil - Spr 2 Plants – Sum 1 &amp; 2 – Light &amp; Shadow</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 – Aut Term Forces – Spr 1 Rocks and Soil - Spr 2 Plants – Sum 1 &amp; 2 – Light &amp; Shadow</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions – Aut Term Forces – Spr 1 Rocks and Soil - Spr 2 Plants – Sum 1 &amp; 2 – Light &amp; Shadow</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables – Aut Term Forces – Spr 1 Rocks and Soil - Spr 2 Plants – Sum 1 &amp; 2 – Light &amp; Shadow</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions – Autumn Term Forces – Spr 1 Rocks and Soil - Spr 2 Plants – Sum 1 &amp; 2 – Light &amp; Shadow</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions – Autumn Term Forces – Spr 1 Rocks and Soil - Spr 2 Plants – Sum 1 &amp; 2 – Light &amp; Shadow</li> <li>identifying differences, similarities or changes related to simple scientific ideas and processes -Aut Term 1- Animals Including Humans – Aut Term - Spr 2 Plants</li> <li>using straightforward scientific evidence to answer questions or to support their findings. – All Units</li> </ul> |
| <u>Living Things and their Habitat</u> |   | <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 microhabitats</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 style="color: red;">Summer 2- Living Things and their Habitats- Food Chains</p>  |   |
| <u>Plants</u>                          | <ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees- Sum 1 - Plants &amp; growth- plants</li> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees- Summer 2 Plants and growth- 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> <p style="color: blue;">Autumn Term 1 and 2- Plants</p>  | <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) &amp; 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. - Spr 2 Plants</li> </ul>  |

|                           | <b>Year 1</b>   | <b>Year 2</b>  | <b>Year 3</b>   |
|---------------------------|---|--|---|
| Animals, including Humans | <ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals- <a href="#">Spring 1- Animals</a></li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores reptiles, birds and mammals- <a href="#">Spring 1- Animals</a></li> <li>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) reptiles, birds and mammals- <a href="#">Spring 1- Animals</a></li> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. reptiles, birds and mammals- <a href="#">Spring 2- Humans</a></li> </ul> | <ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <a href="#">Summer 1- Animals including Humans</a></li> </ul>               | <ul style="list-style-type: none"> <li>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</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul> <a href="#">-Autumn Term 1- Animals Including Humans –</a>  |
| Materials                 | <b>Everyday materials:</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. <a href="#">Autumn Term 1- Materials</a></li> </ul>   | <b>Uses of everyday materials:</b><br>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses- <a href="#">Spr 1- Uses of everyday Materials</a> <ul style="list-style-type: none"> <li>Find out how the shapes of solid objects made from some materials can be changed. <a href="#">Spr 2- Investigating Materials</a></li> </ul> | <b>Rocks:</b> <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. <a href="#">– Spr 1 Rocks and Soil</a></li> </ul>   |
| Seasonal Changes          | <ul style="list-style-type: none"> <li>Observe changes across the 4 seasons</li> <li>Observe and describe weather associated with the seasons and how day length varies <a href="#">Autumn 2- Seasons</a></li> </ul>  |  |   |
| Light                     |   |  | <ul style="list-style-type: none"> <li>Recognise that they need light in order to see things and that dark is the absence of light</li> <li>Notice that light is reflected from surfaces</li> <li>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>Recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>Find patterns in the way that the size of shadows change. <a href="#">Sum1 &amp; 2 – Light &amp; Shadow</a></li> </ul>   |
| Forces and Magnets        |   |  | <ul style="list-style-type: none"> <li>Compare how things move on different surfaces</li> <li>Notice that some forces need contact between 2 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 &amp; identify some magnetic materials</li> <li>Describe magnets as having 2 poles</li> <li>Predict whether 2 magnets will attract or repel each other, depending on which poles are facing – <a href="#">Autumn Term – Forces and Magnets</a></li> </ul> |

|                                 | <u>Year 4</u>  | <u>Year 5</u>  | <u>Year 6</u>  |
|---------------------------------|--|--|--|
| <u>Topics</u>                   | <ul style="list-style-type: none"> <li>Autumn Term 1&amp;2- Living Things &amp; their habitats</li> <li>Spring 1 -The Digestive System and Teeth</li> <li>Spring 2 - Sound</li> <li>Summer 1- States of Matter</li> <li>Summer 2: Electricity</li> </ul>   | <ul style="list-style-type: none"> <li>Autumn Term 1- Space</li> <li>Autumn Term 2- Forces</li> <li>Spring 1 and 2- Changing State</li> <li>Summer 1- Animals, including Humans</li> <li>Summer 2- Living Things and their Habitat</li> </ul>  | <ul style="list-style-type: none"> <li>Autumn Term 1 &amp; 2- Animals including Humans</li> <li>Spring 1- Classification (Living Things)</li> <li>Spring 2- Evolution and Inheritance</li> <li>Summer 1- Electricity</li> <li>Summer 2- Light</li> </ul>   |
| Working Scientifically          | <p>Year 4 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them Aut Term 1- Living Things – Spr 1 – The Digestive System and Teeth – Spr 2 – Sound – Sum – States of Matter, electricity</li> <li>setting up simple practical enquiries, comparative and fair tests them Summ Term 1- States of Matter – Summ Term 2 – Electricity – Spr 2 – Sound</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 Summ Term 1- States of Matter – Summ Term 2 – Electricity – Spr 2 – Sound</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Aut Term 1- Living Things – Spr 2 – Sound</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Summ Term 1- States of Matter – Sum Term 2 – Electricity – Spr 2 – Sound</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Aut Term 1- Living Things – Spr 1 – The Digestive System and Teeth – Spr 2 – Sound – Sum – States of matter - electricity</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Aut Term 1- Living Things – Spr 2 – Sound – Sum – States of matter, electricity</li> <li>identifying differences, similarities or changes related to simple scientific ideas and processes Aut Term 1- Living Things – Spr 1 – The Digestive System &amp; Teeth – Spr 2 – Sound – Sum – States of Matter</li> <li>using straightforward scientific evidence to answer questions or to support their findings. – All Units</li> </ul> | <p>Year 5 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary- Autumn 2- Forces- testing air resistance, Spring Changing State- thermal insulators, testing electricity, separating materials</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate- - Autumn 2- Forces- testing air resistance, - Spring Changing State- thermal insulators, testing electricity, separating materials</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -- Autumn 2- Forces- testing air resistance, - Spring Changing State- thermal insulators, separating materials</li> <li>using test results to make predictions to set up further comparative and fair tests, reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations - Autumn 2- Forces- testing air resistance, - Spring Changing State- thermal insulators, testing electricity</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments-- Autumn 2- Forces- testing air resistance, life with or without gravity? Summer 1- A including H- Gestation periods</li> </ul> | <p>Year 6 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary - Autumn – Animals including Humans – Spr 1 – Classification – Sum 1 – Electricity – Sum 2 Light</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - Autumn – Animals including Humans Spr 1 – Classification – Sum 1 – Electricity – Sum 2 Light</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Autumn – Animals including Humans - Spr 1 – Classification – Sum 1 – Electricity – Sum 2 Light</li> <li>using test results to make predictions to set up further comparative and fair tests, reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations – Autumn – Animals including Humans- Spr 1 – Classification – Sum 1 – Electricity – Sum 2 Light</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments. - Autumn – Animals including Humans – Spr 1 – Classification – Spr 2 - Evolution</li> </ul> |
| Living Things and their Habitat | <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 -Aut Term – Living Things &amp; their habitats</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. Summer 2- Living Things and their Habitat</li> </ul>   | <ul style="list-style-type: none"> <li>Describe how living things are classified into broad groups according to common observable characteristics, based on similarities &amp; differences, inc micro-organisms, plants &amp; animals</li> <li>Give reasons for classifying plants and animals based on specific characteristics - Spring 1- Classification</li> </ul>   |
| Animals, including Humans       | <ul style="list-style-type: none"> <li>Describe the functions of the basic parts of the human digestive system</li> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey. Aut Term – Living Things &amp; their habitats</li> </ul> <p>Spring 1 -The Digestive System and Teeth</p>  | <ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age Summer 1- Animals, including Humans</li> </ul>  | <ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system and describe functions of heart, blood vessels &amp; blood</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe ways in which nutrients and water are transported within animals, inc humans. Aut Term 1 &amp; 2- Animals inc Humans</li> </ul>   |
| Materials                       | <p><b>States of matter:</b></p> <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. Summer Term- States of Matter –</li> </ul>  | <p><b>Properties and changes of materials</b></p> <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 dissolving, mixing &amp; changes of state are reversible changes</li> <li>Explain that some changes result in the formation of new materials and this kind of change is not usually reversible, including changes associated with burning and acid on bicarbonate of soda. Spring 1 &amp; 2- Changing State</li> </ul>  |  |

|                           | <u>Year 4</u>   | <u>Year 5</u>  | <u>Year 6</u>   |
|---------------------------|---|--|---|
| Light                     |   |  | <ul style="list-style-type: none"> <li>• Recognise that light appears to travel in straight lines</li> <li>• 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>• 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</li> <li>• Use the idea light travels in straight lines to explain why shadows have the same shape as objects casting them<br/>-Summer 2- Light</li> </ul> |
| Forces and Magnets        |   | <ul style="list-style-type: none"> <li>• Explain 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 inc levers, pulleys and gears allow a smaller force to have a greater effect- Aut Term 2- Forces</li> </ul> |   |
| Sound                     | <ul style="list-style-type: none"> <li>• Identify how sounds are made, associating some of them with something vibrating</li> <li>• Recognise that vibrations from sounds travel through a medium to the ear</li> <li>• Find patterns between the pitch of a sound and features of the object that produced it</li> <li>• Find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>• Recognise that sounds get fainter as the distance from the sound source increases. Spr 2 – Sound</li> </ul>  |  |   |
| Electricity               | <ul style="list-style-type: none"> <li>• Identify common appliances that run on electricity</li> <li>• Construct simple series electrical circuit, identify &amp; name basic parts, inc cells, wires, bulbs, switches &amp; buzzers</li> <li>• Identify whether a lamp will light in a simple series circuit, based on whether the lamp is part of a complete loop with a battery</li> <li>• Recognise switches open and closes a circuit &amp; associate with whether or not a lamp lights in a simple series circuit</li> <li>• Recognise some common conductors &amp; insulators and associate metals with being good conductors - Summer Term 2 –Electricity</li> </ul> |  | <ul style="list-style-type: none"> <li>• Associate the brightness of a lamp or the volume of a buzzer with the number &amp; voltage of cells in the circuit</li> <li>• Compare and give reasons for variations in how components function, including 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. Summer 1- Electricity</li> </ul>   |
| Earth and Space           |   | <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 Sun, Earth and moon as approximately spherical bodies</li> <li>• Use the idea of the Earth's rotation to explain day and night and apparent movement of the sun across the sky- Aut Term 1- Space</li> </ul>            |   |
| Evolution and Inheritance |   |  | <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 Spring 2- Evolution and Inheritance</li> </ul>  |