

| Autumn | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--------|---|---|--|--|---|---|
| | <p>Seasonal change</p> <p>Skills</p> <p>To be able to ask simple questions and recognise that they can be answered in different ways. To be able to identify objects. To be able to perform simple tests. To be able to observe closely, using simple equipment. To be able to gather and record data to help answer a question.</p> <p>Knowledge</p> <p>Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies</p> <p>Everyday Materials</p> <p>Skills</p> <p>To be able to identify and classify. To be able to observe carefully, using simple equipment. To be able to ask simple questions and recognise that they can be answered in different ways. To be able to perform simple tests. To be able to record simple data in order to answer a question.</p> <p>Knowledge</p> <p>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>Uses of everyday materials</p> <p>Skills</p> <p>To be able to ask simple questions and recognise that they can be answered in different ways. To be able to use their observations and ideas to suggest answers to questions. To be able to gather and record data to help in answering questions. To be able to perform simple tests. To be able to use simple measurements to gather data.</p> <p>Knowledge</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 Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> | <p>Forces and magnets</p> <p>Skills</p> <p>To be able to set up a simple fair-test. To be able to record findings in a bar chart. To be able to identify changes related to scientific ideas. To be able to use results to draw simple conclusions. To be able to provide an oral explanation of findings. To be able to make systematic and careful observations.</p> <p>Knowledge</p> <p>Compare how things move on different surfaces Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others 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 Describe magnets as having 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p> | <p>Electricity</p> <p>Skills</p> <p>To be able to set up a simple practical enquiry. To be able to record findings using drawings. To be able to use results to make predictions.</p> <p>Knowledge</p> <p>Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers 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 Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors</p> <p>Sound</p> <p>Skills</p> <p>To be able to use a scientific enquiry to answer a question. To be able to set up a simple practical enquiry. To be able to make systematic and careful measurements with a data logger. To be able to report on findings from an enquiry. To be able to identify differences, similarities or changes related to simple scientific ideas. To be able to set up simple fair tests.</p> <p>Knowledge</p> <p>Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases</p> | <p>Animals including humans</p> <p>Skills</p> <p>To be able to communicate data using a scatter graph. To be able to present conclusions. To be able to use evidence to refute or support an idea. To be able to record data within tables. To be able to record data using line graphs.</p> <p>Knowledge</p> <p>Describe the changes as humans develop to old age <i>Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty.</i></p> <p>Properties and changes of materials</p> <p>Skills</p> <p>To be able to record data in a line graph. To be able to use test results to make predictions to set up further comparative and fair tests. To be able to report and present findings from enquiries, including conclusions, causal relationships and explanations.</p> <p>Knowledge</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 Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use Knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</p> | <p>Living things and their habitats</p> <p>Skills</p> <p>To be able to make a key to classify plants.</p> <p>Knowledge</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 Give reasons for classifying plants and animals based on specific characteristics</p> <p>Electricity</p> <p>Skills</p> <p>To be able to explain the degree of trust can be had in results. To be able to plan a fair-test by recognising the control variables. To be able to use predictions to set up fair tests.</p> <p>Knowledge</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 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 Use recognised symbols when representing a simple circuit in a diagram</p> |

Progression in Science – **Biology** – **Physics** - **Chemistry**

| Spring | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--------|--|--|---|---|---|--|
| | <p>Animals including humans</p> <p>Skills To be able to record data in simple ways (table, Venn Diagram). To be able to observe closely, using simple equipment. To identify and classify</p> <p>Knowledge Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) 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>Living Things and their habitats</p> <p>Skills To be able to ask simple questions and recognise that they can be answered in different ways. To be able to observe closely. To be able to gather and record data to help answer a question. To be able to record data in a tally chart. To be able to record data in a bar chart. To be able to use observations to suggest answers to questions. To be able to observe using a microscope/hand lens</p> <p>Knowledge Explore and compare the differences between things that are living, dead, and things that have never been alive 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 Identify and name a variety of plants and animals in their habitats, including microhabitats 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>Animals including humans</p> <p>Skills To be able to record using drawings. To be able to report on findings from enquiries. To be able to use evidence to answer questions. To be able to set up a comparative test. To be able to record data in a table. To be able to identify the correct type of enquiry to answer a question.</p> <p>Knowledge 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 Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Rocks</p> <p>Skills To be able to make careful observations. To be able to set up simple comparative tests.</p> <p>Knowledge 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 Recognise that soils are made from rocks and organic matter</p> | <p>States of matter</p> <p>Skills To be able to set up a fair test. To be able to set up a simple test. To be able to use results to draw simple conclusions. To be able to use a data logger to take accurate measurements. To be able to use a thermometer to take accurate measurements. To be able to provide a written explanation. To be able to use straightforward scientific evidence to answer questions or to support their findings.</p> <p>Knowledge Compare and group materials together, according to whether they are solids, liquids or gases 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) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p> | <p>Earth and Space</p> <p>Skills To be able to plan a scientific enquiry to answer a question. To be able to report a presentation of an explanation.</p> <p>Knowledge Describe the movement of the Earth and other planets relative to the sun in the solar system Describe the movement of the moon relative to the Earth Describe the sun, Earth and moon as approximately spherical bodies 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>Living things and their habitats</p> <p>Skills To be able to plan the correct enquiry to answer a question. To be able to use scientific diagrams and labels. To be able to explain findings.</p> <p>Knowledge Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals <i>Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.</i></p> | <p>Evolution and Inheritance</p> <p>Skills To be able to identify scientific evidence that has been used to support or refute ideas or arguments. To be able to plan an enquiry that will answer a question. To be able to record data in a table, classification key, bar graph. To be able to present findings from an enquiry.</p> <p>Knowledge Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> <p>Animals including humans</p> <p>Skills To be able to plan pattern-seeking enquiry. To be able to record results using a line graph. To be able to report causal relationships. To be able to present findings from enquiries.</p> <p>Knowledge Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans</p> |

Progression in Science – **Biology** – **Physics** - **Chemistry**

| Summer | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--------|--|--|--|--|--|---|
| | <p>Plants</p> <p>Skills</p> <p>To be able to observe closely. To be able to ask simple questions and recognise that they can be answered in different ways. To be able to observe carefully using simple equipment. To be able to use parts of the plant to identify and classify it. To be able to ask simple questions and recognise the ways in which they can be answered.</p> <p>Knowledge</p> <p>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>Animals including humans</p> <p>Skills</p> <p>To be able to use observations to suggest answers to questions. To be able to record data (flow diagram, table, tally chart). To be able to observe using simple equipment. To be able to perform a simple test.</p> <p>Knowledge</p> <p>Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p>Plants</p> <p>Skills</p> <p>To be able to perform a simple test. To be able to recognise that questions can be answered in a range of ways. To be able to observe closely using simple equipment. To be able to sort objects using observable features (non-statutory). To be able to gather and record data to help in answering a question. To use their observations and ideas to suggest answers to questions.</p> <p>Knowledge</p> <p>Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> | <p>Light</p> <p>Skills</p> <p>To be able to set up a simple fair test. To be able to make systematic and careful observations and measurements. To be able to record findings as drawings and bar charts. To be able to make predictions for further values.</p> <p>Knowledge</p> <p>Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous and that there are ways to protect their eyes Recognise that shadows are formed when the light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change</p> <p>Plants</p> <p>Skills</p> <p>To be able to set up a simple practical enquiry. To be able to make systematic and careful observations. To be able to gather and record data. To be able to use results to draw simple conclusions. To be able to use straightforward scientific evidence to answer questions or to support their findings.</p> <p>Knowledge</p> <p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 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 Investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p> | <p>Animals including humans</p> <p>Skills</p> <p>To be able to record findings using labelled diagrams. To be able to use written explanations to report on findings from an enquiry. To be able to identify the correct type of enquiry to answer a question. To be able to set up a comparative test. To be able to use evidence to support findings.</p> <p>Knowledge</p> <p>Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey</p> <p>Living things and their habitats</p> <p>Skills</p> <p>To be able to gather, record, classify and present data in a variety of ways to help in answering questions. To be able to report on findings from enquiries, including oral and written explanations.</p> <p>Knowledge</p> <p>Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things</p> | <p>Forces</p> <p>Skills</p> <p>To be able to identify scientific evidence that has been used to support or refute ideas or arguments. To be able to explain the degree of trust in results. To be able to use test results to make predictions to set up further fair-tests. To be able to plan a fair-test; identifying the control variables.</p> <p>Knowledge</p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p> | <p>Animals including humans</p> <p>Skills</p> <p>To be able to plan pattern-seeking enquiry. To be able to record results using a line graph. To be able to report causal relationships. To be able to present findings from enquiries.</p> <p>Knowledge</p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans</p> <p>Light</p> <p>Skills</p> <p>To be able to use scientific evidence to support or refute on idea. To be able to use test results to make predictions to set up further comparative and fair tests. To be able to plan a fair-test; recognising and controlling variables. To be able to plan a scientific enquiry to answer a questions. To be able to report as to the degrees of trust in results.</p> <p>Knowledge</p> <p>Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p> |