

Subject progression: SCIENCE

Year & theme	Vocabulary	Objectives Procedural (I can . . .)	Objectives Declarative (I know . . .)
<p>Nursery: <u>Materials</u> <u>Changing states of matter</u></p>	<ul style="list-style-type: none"> • Material • Solid • Liquid • absorb • properties • dry • wet soggy • waterproof • float • sink • strong • stretchy 	<ul style="list-style-type: none"> • I can use all my senses to explore materials • I can explore materials with similar/different properties • I can talk about the differences between materials and their change 	<ul style="list-style-type: none"> • I know that there are different materials and that they can change. • I know that materials are made from different resources.
<p><u>Animals and habitats</u></p>	<ul style="list-style-type: none"> • body parts • tail • claws • fins • gills • wings <p>large animals (mammals) – frog, squirrel, cat, mouse, rat, rabbit, fox, badger birds – blackbird, robin, sparrow, blue tit, crow, etc.</p> <p>minibeasts – worm, beetle, insect, spider, woodlouse, caterpillar, butterfly, etc.</p> <p>life cycle, frog, frogspawn, tadpole, froglet, grow, change</p>	<ul style="list-style-type: none"> • I can talk about what I see, using a wide range of vocabulary • I can relate some animals to their habitats. 	<ul style="list-style-type: none"> • I know the key features of the life cycle of an animal • I know that I need to respect and care for the natural environment and all living things.

<p>Reception: <u>Changing states of matter</u></p>	<ul style="list-style-type: none"> • rough • smooth • soft • hard • sticky • slippery • spiky • ice • water • freeze • frozen • melt • salt 	<ul style="list-style-type: none"> • I can explore the natural world around me • I can describe what I see, hear and feel whilst I am outside 	<ul style="list-style-type: none"> • I know some important processes and changes in the natural world around me including changing states of matter
<p><u>Animals and Habitats</u> <u>Seasons</u></p>	<ul style="list-style-type: none"> • Spring • Season • blossom • leaves • growth • warm(er) • weather – warm • cold • sunny • cloudy • windy • rain • snow • hail • birth • babies • life • alive • grow • death <p>farm animals - lamb, sheep, ram, ewe, calf, cows, bull, chicks, chickens, hen, cockerel, ducklings, ducks, goslings, geese</p>	<ul style="list-style-type: none"> • I can explore the natural world around me • I can describe what I see, hear and feel whilst I am outside • I can recognise some environments are different to the one in which I live. 	<ul style="list-style-type: none"> • I know that the seasons change in the natural world around me

<p style="text-align: center;"><u>Plants</u></p>	<ul style="list-style-type: none"> • stem • leaves • roots • flower • seeds • water • light • compost/soil <p>vegetables - potato, carrot, pea, bean, cabbage, lettuce, cucumber, etc.</p>	<ul style="list-style-type: none"> • I can explore the natural world around me • I can describe what I see, hear and feel whilst I am outside • I can make observations about plants 	<ul style="list-style-type: none"> • I know how to plant seeds and then care for them. • I know that plants are made up of different parts.
<p style="text-align: center;">Year 1: Ongoing throughout year <u>Seasonal changes</u></p>	<ul style="list-style-type: none"> • Summer • winter • autumn • spring • day • daytime • wind • rain • snow • sleet • fog • sun • hot • warm • cold 	<ul style="list-style-type: none"> • I can observe and describe weather associated with the seasons. 	<ul style="list-style-type: none"> • I know that there are changes across the four seasons. • I know how day length varies.

<p style="text-align: center;">Autumn 2 Materials</p>	<ul style="list-style-type: none"> • object • material • man-made • wood • plastic • glass • metal • water • rock • brick • paper • fabrics • elastic • foil • Properties • everyday materials • physical properties • stiff • shiny/dull • rough/smooth • bendy/not bendy • waterproof/not waterproof • absorbent/not absorbent • opaque • transparent 	<ul style="list-style-type: none"> • I can distinguish between an object and the material from which it is made • I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • I can describe the simple physical properties of a variety of everyday materials • I can compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<ul style="list-style-type: none"> • I know the names of common materials • I know that some materials have the same properties than others
<p style="text-align: center;">Spring 2 Animals including humans</p>	<ul style="list-style-type: none"> • common animals • senses • omnivores • carnivores • names of body parts 	<ul style="list-style-type: none"> • I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • I can identify and name a variety of common animals that are carnivores, herbivores and omnivores • I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • 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. 	<ul style="list-style-type: none"> • I know some common characteristics of fish, amphibians, reptiles, birds and mammals. • I know what carnivores, herbivores and omnivores eat. • I know some basic parts of the human body and can compare to those of other animals.

<p style="text-align: center;">Summer 1 <u>Plants</u></p>	<p>common flowers</p> <ul style="list-style-type: none"> • deciduous – evergreen tree leaves • flower • blossom • petals • fruit • roots • bulb • seed • trunk • branches • stem 	<ul style="list-style-type: none"> • I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • I can identify and describe the basic structure of a variety of common flowering plants, including trees 	<ul style="list-style-type: none"> • I know the names of a selection of plants and flowers from my local environment. • I know that some trees are deciduous, and some are evergreen and why. • I know the basic parts of flowering plants and trees.
<p style="text-align: center;">Year 2: Autumn 2 <u>Materials</u></p>	<ul style="list-style-type: none"> • Suitability, • compare, • change, • squash, • bend, • twist, • stretch, • Suitable • unsuitable 	<ul style="list-style-type: none"> • I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<ul style="list-style-type: none"> • I know what materials are best used for a particular purpose. • I know that some materials can change shape.
<p style="text-align: center;">Spring 2 <u>Animals including humans</u></p>	<ul style="list-style-type: none"> • offspring • adult • survival • exercise • hygiene • nutrition • reproduce • baby • toddler • child • teenager • adult 	<ul style="list-style-type: none"> • I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	<ul style="list-style-type: none"> • I know that animals, including humans, have offspring which grow into adults • I know what animals and humans need to survive. • I know how to keep myself healthy.

<p>Spring 2 <u>Habitats</u></p>	<ul style="list-style-type: none"> • living • dead • never alive • alive • habitats • micro habitats • food • food chain • healthy • shelter • Seashore • woodland • ocean • rainforest • conditions 	<ul style="list-style-type: none"> • I can explore and compare the differences between things that are living, dead, and things that have never been alive • I can identify and name a variety of plants and animals in their habitats, including microhabitats 	<ul style="list-style-type: none"> • I know 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 • I know 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>Summer 1 <u>Plants</u></p>	<ul style="list-style-type: none"> • germination • growth • survival • seeds • bulbs • temperature • healthy 	<ul style="list-style-type: none"> • I can observe and describe how seeds and bulbs grow into mature plants • I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<ul style="list-style-type: none"> • I know that plants need water, light and warmth to grow healthily
<p>Year 3: Autumn 2 <u>Light</u></p>	<ul style="list-style-type: none"> • Light • Dark • Reflection • Opaque • Transparent • Translucent • Shadows • Mirror • Fair test • Systematic 	<ul style="list-style-type: none"> • I can set up a simple fair test. • I can make systematic and careful observations. • I can use bar charts to record my findings. 	<ul style="list-style-type: none"> • I know where light comes from. • I know how shadows are formed and how they change.
<p>Autumn 2 <u>Forces and Magnets</u></p>	<ul style="list-style-type: none"> • Surface • Magnetic forces • Attract • Repel • Magnetic • Poles • Push • Pull 	<ul style="list-style-type: none"> • I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. • I can identify differences, similarities, or changes. • I can use scientific evidence to support my findings. • I can use results to draw simple conclusions, make predictions and suggest improvements. 	<ul style="list-style-type: none"> • I know that magnets can attract and repel. • I know the difference between magnetic and non-magnetic materials. • I know the effect different materials have on an object.

<p>Spring 1 <u>Rocks</u></p>	<ul style="list-style-type: none"> • Fossils • Grains • Crystals • Sedimentary rock 	<ul style="list-style-type: none"> • I can compare and group different types of rocks according to their appearance and physical properties. • I can describe in simple terms how fossils are formed when things that have lived are trapped within rock 	<ul style="list-style-type: none"> • I know the three different types of rocks. • I know how fossils are formed.
<p>Spring 2 <u>Animals including humans</u></p>	<ul style="list-style-type: none"> • nutrition • diet • vitamins • minerals • fats • proteins • carbohydrates 	<ul style="list-style-type: none"> • I can use scientific vocabulary to report my findings. • I can set up a comparative test. • I can record data. 	<ul style="list-style-type: none"> • I know what animals need to survive. • I know that animals and humans have skeletons and muscles.
<p>Spring 2 <u>Plants</u></p>	<ul style="list-style-type: none"> • roots • branch • trunk • stalk • leaf • flower • petal • seeds • bulbs, • twigs • petal • stamen • carpel • pollination • fertilisation • germination 	<ul style="list-style-type: none"> • I can set up a simple practical enquiry. • I can make systematic and careful observations. • I can use results to draw conclusions. • I can use scientific evidence to answer questions. 	<ul style="list-style-type: none"> • I know the parts of plants and their functions. • I know what plants need to grow. • I know how to recognise changes in different plants.
<p>Year 4: <u>Autumn 2</u> <u>States of matter</u></p>	<ul style="list-style-type: none"> • solid • liquid • gas • melting • condensation • Evaporation • solidifying • freezing • Water vapour • steam • heating 	<ul style="list-style-type: none"> • I can use results to draw conclusions. • I can use a data logger to take measurements. • I can set up a simple fair test. • I can use scientific vocabulary to answer questions. 	<ul style="list-style-type: none"> • I know the differences between solid, liquids and gases. • I know that some materials can change state. • I know the stages of the water cycle.

<p style="text-align: center;">Autumn 2 Electricity</p>	<ul style="list-style-type: none"> • Circuit • Series circuit • Cell • Wire • Bulbs • Switch • Lamp • Conductors • Insulators • Appliance • Battery 	<ul style="list-style-type: none"> • I can set up a simple practical enquiry. • I can collect results to inform predictions. • I can use scientific vocabulary to explain my results. 	<ul style="list-style-type: none"> • I know the effect electricity has on different appliances. • I know how to construct a simple series electrical circuit. • I know some common electrical conductors and insulators.
<p style="text-align: center;">Spring 2 Animals including Humans</p>	<ul style="list-style-type: none"> • Digestive system • incisor • canine • molar • premolar • saliva • oesophagus • stomach • small intestine • Large intestine • producer • Consumer • predator • prey • herbivore • carnivore 	<ul style="list-style-type: none"> • I can set up a simple test. • I can use diagrams to report my findings. • I can use scientific vocabulary to report my findings. 	<ul style="list-style-type: none"> • I know the different types of teeth and their functions. • I know the parts of the digestive system and their functions.
<p style="text-align: center;">Spring 2 Sound</p>	<ul style="list-style-type: none"> • Vibration • Medium • Pitch • Volume 	<ul style="list-style-type: none"> • I know that sound is made from vibrations. • I know the differences between patterns of vibrations. 	<ul style="list-style-type: none"> • I can use scientific enquiry to answer a question. • I can use a data logger to take measurements. • I can use scientific vocabulary to ask and answer questions.

<p style="text-align: center;">Summer 1 <u>Living things and their habitats</u></p>	<ul style="list-style-type: none"> • Classification key • Environment • Habitat • Vertebrate • Fish • Amphibians • Reptiles • Birds • Mammals • Invertebrates • Snails • Slugs • Worms • Spiders • Insects 	<ul style="list-style-type: none"> • I can create and use classification keys. • I can use scientific vocabulary to report my findings. 	<ul style="list-style-type: none"> • I know the different groups that living things belong to. • I know how different environments change.
<p style="text-align: center;">Year 5: Autumn 2 <u>Properties and Changes of Matter</u></p>	<ul style="list-style-type: none"> • thermal • conductor • insulator • solvent • particles • Suspensions • Solubility • Hardness • Transparency • Dissolve • Solution • Separation • Filtration • Comparative 	<ul style="list-style-type: none"> • I can recognise and control variables where necessary. • I can choose the most appropriate equipment. • I can take measurements, using a range of scientific equipment with increasing accuracy and precision. • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs. • I can report and present findings from enquires, including conclusions, causal relationships and explanations of results (in oral and written forms). • I can use simple models to describe scientific ideas. • I can identify scientific evidence that has been used to support or refute ideas or arguments. <p>I can use their results to identify when further tests and observations might be needed</p>	<ul style="list-style-type: none"> • I know that everyday materials can be grouped together based on their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • I know the uses of everyday materials, including metals, wood and plastic based on evidence from investigations

**Year 5:
Spring 1
Forces**

- Gravity
- Friction
- Air resistance
- Particles
- Upthrust
- Weight
- Newtons (Newton meter)

- I can plan different types of enquiries to answer questions and choose the most appropriate equipment.
- I can recognise and control variables where necessary.
- I can take measurements to collect data, using a range of scientific equipment with increasing accuracy and precision.
- I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.
- I can report and present findings from enquires, including conclusions, causal relationships and explanations of results (in oral and written forms).
- I can use simple models to describe scientific ideas.
- I can use their results to identify when further tests and observations might be needed.

- I know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- I know about the effects of air resistance, water resistance and friction that act between moving surfaces.
- I know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

**Year 5:
Spring 1
Earth in space**

- Earth
- Sun
- Moon
- Solar system
- Planets
- Spherical bodies
- Rotation
- Axis

- I can explain the movement of the earth and other planets.
- I can plan a fair-test; identifying the control variables.
- I can take repeated accurate measurements using a stopwatch.

- I know that the movement of the Earth, and other planets, is relative to the Sun in the solar system.
- I know that the movement of the Moon relative to the Earth.
- I know how the Earth's rotation explains day and night and the apparent movement of the Sun across the sky.

<p>Spring 2 Animals including Humans</p>	<ul style="list-style-type: none"> • Development • Puberty • Embryo • Womb • Gestation • Growth 	<ul style="list-style-type: none"> • I can explain the changes in humans as they develop to an old age. 	<ul style="list-style-type: none"> • I know people change as they age • I know the 6 stages of human development. • I know the differences between mammal, amphibian, insect and bird.
<p>Spring 2 Living things and their habitats</p>	<ul style="list-style-type: none"> • Life-cycle • Mammal • Amphibian • Reproduction 	<ul style="list-style-type: none"> • I can explain the changes that take place during the cycle of the plant. • 	<ul style="list-style-type: none"> • I know the life process of reproduction in some plants.
<p>Year 6: Autumn 2 Electricity</p>	<ul style="list-style-type: none"> • Volts • Resistance • Switch • Symbols • Buzzers 	<ul style="list-style-type: none"> • 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. • I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells in a battery. • I can use recognised symbols when representing a simple circuit diagram. 	<ul style="list-style-type: none"> • I know what the components of the circuit are. • I know the electrical symbol for each component.
<p>Autumn 2 Light</p>	<ul style="list-style-type: none"> • Refraction • Light source • Travel • Spectrum • Phenomena • Rainbow • Colour 	<ul style="list-style-type: none"> • I can use scientific evidence to support or refute an idea. • I can use test results to make predictions to set up further comparative tests. • I can plan a fair test: recognising and controlling variables. 	<ul style="list-style-type: none"> • I know that light appears to travel in straight lines. • I know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • I know that because light travels in straight lines objects are seen because they give out or reflect light into the eye.

<p style="text-align: center;">Spring 1 Animals including Humans</p>	<ul style="list-style-type: none"> • Artery • Vein • Capillary • Atria • Ventricle • Valves • Lifestyle • Substance • Balanced diet 	<p>To be taught through reading and writing lessons.</p> <ul style="list-style-type: none"> • I can explain how the circulatory system works. • I can explain how different factors affect how the body changes 	<ul style="list-style-type: none"> • I know the main parts of the human circulatory system. • I know the functions of the heart, blood vessels and blood. • I know the impact of diet, exercise, drugs and lifestyle on the way bodies function.
<p style="text-align: center;">Summer 1 Living Things</p>	<ul style="list-style-type: none"> • Classification • Micro-organisms • Vertebrate • Invertebrate • Arthropod 	<ul style="list-style-type: none"> • I can make a key to classify plants. 	<ul style="list-style-type: none"> • I know that living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. • I know the reasons for classifying plants and animals based on specific characteristics.
<p style="text-align: center;">Year 6: Spring 1 Evolution and inheritance</p>	<ul style="list-style-type: none"> • Fossils • Offspring • Adaptation • Evolution 	<p>To be taught through reading sessions</p> <ul style="list-style-type: none"> • I can explain how things have changed over time 	<ul style="list-style-type: none"> • I know that living things have changed over time and that fossils provide information about living things that inhabited the earth a million years ago. • I know that living things produce offspring of the same kind but that they may vary and may not be identical to their parents. • I know that animals and plants adapt to suit their environment and that adaptation may lead to evolution. •