

Subject progression: SCIENCE

Year & theme	Vocabulary	Objectives Procedural (I can . . .)	Objectives Declarative (I know . . .)
Nursery: <u>Materials</u> <u>Changing states of matter</u>	<ul style="list-style-type: none">• Material• Solid• Liquid• absorb• properties• dry• wet soggy• waterproof• float• sink• strong• stretchy		
<u>Animals and habitats</u>	<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>		

<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 		
<p><u>Animals and Habitats</u> Seasons</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"> • 	<ul style="list-style-type: none"> •

<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>		
<p style="text-align: center;">Year 1: 3x 2week blocks throughout the 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 use everyday language and begin to use simple scientific words to ask or answer a scientific question. • I can begin to say what might happen in an investigation. • I can observe objects, materials and living things and describe what I see. • I can use simple, nonstandard equipment and measurements in a practical task. • I can follow instructions to complete a simple test individually or in a group. • I can talk about my findings and explain what I have found out. • I can explain, with help, what I think I have found out. • 	<ul style="list-style-type: none"> • I know the changes across the 4 seasons • I know the weather associated with the seasons and how day length varies

Autumn

Materials

- 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

- I can compare and group together a variety of everyday materials on the basis of their simple physical properties
- I can use everyday language and begin to use simple scientific words to ask or answer a scientific question.
- I can begin to say what might happen in an investigation.
- I can observe objects, materials and living things and describe what I see.
- I can sort and group objects and materials, with help, according to simple observational features.
- I can follow instructions to complete a simple test individually or in a group.
- I can talk about my findings and explain what I have found out.
- I can explain, with help, what I think I have found out.
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- I know the difference between an object and the material of which it is made.
- I know the names of a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- I know some simple physical properties of a variety of everyday materials eg. opaque and transparent, waterproof and absorbent
- I know about the work of an influential scientist

<p style="text-align: center;">Autumn/ Spring <u>Animals including humans</u></p>	<ul style="list-style-type: none"> • common animals • senses • omnivores • carnivores • names of body parts 	<ul style="list-style-type: none"> • I can use everyday language and begin to use simple scientific words to ask or answer a scientific question. • I can begin to say what might happen in an investigation. • I can observe objects, materials and living things and describe what I see. • I can sort and group living things, with help, according to simple observational features. • 	<ul style="list-style-type: none"> • I know which part of the body is associated with each sense • I know the names of the basic body parts of the human body. • I know the names of and can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • I know the names of a variety of common animals that are carnivores, herbivores and omnivores • I know about the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • I know about the work of an influential scientist
<p style="text-align: center;">Summer <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 use everyday language and begin to use simple scientific words to ask or answer a scientific question. • I can begin to say what might happen in an investigation. • I can observe objects, materials and living things and describe what I see. • I can use simple, nonstandard equipment and measurements in a practical task. • I can sort and group living things, with help, according to simple observational features. • I can follow instructions to complete a simple test individually or in a group. • I can talk about my findings and explain what I have found out. • I can explain, with help, what I think I have found out. 	<ul style="list-style-type: none"> • I know the names of and can identify a variety of common wild and garden plants, including deciduous and evergreen trees • I know the basic structure of a variety of common flowering plants, including trees • I know about the work of an influential scientist

<p>Year 2:</p> <p>Autumn</p> <p><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 compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • I can suggest ideas, ask simple questions and know that they can be answered, investigated in different ways including simple secondary sources, such as books and video clips. • I can begin to make predictions • I can decide, with help, how to group materials and objects, noticing changes over time and beginning to see patterns. • I can do things in the correct order when performing a simple test and begin to recognise when something is unfair. • I can use simple scientific language to explain what I have found out. • I can identify simple patterns and/or relationships using simple comparative language. 	<ul style="list-style-type: none"> • I know the names of a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • I know about the work of an influential scientist • I know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
<p>Autumn/ Spring</p> <p><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 suggest ideas, ask simple questions and know that they can be answered, investigated in different ways including simple secondary sources, such as books and video clips • I can begin to make predictions • I can decide, with help, how to group living things noticing changes over time and beginning to see patterns. 	<ul style="list-style-type: none"> • I know that animals, including humans, have offspring which grow into adults • I know about and can describe the basic needs of animals, including humans, for survival (water, food and air) • I know the importance for humans of exercise, eating the right amounts of different types of food, and hygiene • I know about the work of an influential scientist

Spring

Habitats

- living
- dead
- never alive
- alive
- habitats
- micro habitats
- food
- food chain
- healthy
- shelter
- Seashore
- woodland
- ocean
- rainforest
- conditions

- I can suggest ideas, ask simple questions and know that they can be answered, investigated in different ways including simple secondary sources, such as books and video clips
- I can begin to make predictions

- I know the life processes that are common to all living things
- I know the differences between things that are living, dead, and things that have never been alive
- 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 the names of a variety of plants and animals in their habitats, including microhabitats
- 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
- I know about the work of an influential scientist

<p style="text-align: center;">Summer Plants</p>	<ul style="list-style-type: none"> • germination • growth • survival • seeds • bulbs • temperature • healthy 	<ul style="list-style-type: none"> • I can suggest ideas, ask simple questions and know that they can be answered, investigated in different ways including simple secondary sources, such as books and video clips • I can begin to make predictions • I can observe something closely and describe changes over time. • I can use simple equipment, such as hand lenses to make observations and carry out simple tests. • I can do things in the correct order when performing a simple test and begin to recognise when something is unfair. • I can gather data, record and talk about their findings, in a range of ways, using simple scientific vocabulary. • I can use simple scientific language to explain what I have found out. • I can identify simple patterns and/or relationships using simple comparative language. 	<ul style="list-style-type: none"> • I know how seeds and bulbs grow into mature plants • I know how plants need water, light and a suitable temperature to grow and stay healthy • I know about the work of an influential scientist
<p style="text-align: center;">Year 3: Autumn Light</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 find patterns in the way that the size of shadows change • I can use ideas to pose questions, independently, about the world around me. • I can make predictions and begin to give a reason • I can make decisions about what to observe during an investigation. • I can take accurate measurements using standard units. • I can discuss enquiry methods and describe a fair test. • I can record my findings using scientific language and present in note form, writing frames, diagrams, tables and charts. • I can draw, with help, a simple conclusion based on evidence from an enquiry or observation. • I can gather, record and use data in a variety of ways to answer a simple question. 	<ul style="list-style-type: none"> • I know that we need light in order to see and I can name a variety of light sources • I know that dark is the absence of light • I know that light is reflected from surfaces • I know that light from the sun can be dangerous and that there are ways to protect their eyes • I know that shadows are formed when the light from a light source is blocked by an opaque object • I know what a sundial is and how it works • I know about the work of an influential scientist

- Surface
- Magnetic forces
- Attract
- Repel
- Magnetic
- Poles
- Push
- Pull

- I can compare how things move on different surfaces
- I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet
- I can predict whether 2 magnets will attract or repel each other, depending on which poles are facing
- I can use ideas to pose questions, independently, about the world around me.
- I can make predictions and begin to give a reason
- I can make decisions about what to observe during an investigation.
- I can take accurate measurements using standard units.
- I can talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships.
- I can discuss enquiry methods and describe a fair test.
- I can record my findings using scientific language and present in note form, writing frames, diagrams, tables and charts
- I can draw, with help, a simple conclusion based on evidence from an enquiry or observation.
- I can gather, record and use data in a variety of ways to answer a simple question.

- I know that some forces need contact between 2 objects, but magnetic forces can act at a distance
- I know how magnets attract or repel each other and attract some materials and not others
- I know some magnetic materials
- I know magnets have 2 poles
- I know about the work of an influential scientist

<p style="text-align: center;">Summer</p> <p style="text-align: center;"><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 together different kinds of rocks on the basis of their appearance and simple physical properties • I can use ideas to pose questions, independently, about the world around me. • I can make predictions and begin to give a reason • I can make decisions about what to observe during an investigation. • I can talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships. • I can discuss enquiry methods and describe a fair test. • I can record my findings using scientific language and present in note form, writing frames, diagrams, tables and charts • I can draw, with help, a simple conclusion based on evidence from an enquiry or observation. • I can gather, record and use data in a variety of ways to answer a simple question. 	<ul style="list-style-type: none"> • I know and can describe in simple terms how fossils are formed when things that have lived are trapped within rock • I know that soils are made from rocks and organic matter • I know about the work of an influential scientist
<p style="text-align: center;">Spring</p> <p style="text-align: center;"><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 ideas to pose questions, independently, about the world around me. • I can make predictions and begin to give a reason • I can talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships. • I can gather, record and use data in a variety of ways to answer a simple question. 	<ul style="list-style-type: none"> • I know 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 • I know that foods can be grouped according to type • I know about the work of an influential scientist • I know that humans and some other animals have skeletons and muscles for support, protection and movement

- roots
- branch
- trunk
- stalk
- leaf
- flower
- petal
- seeds
- bulbs,
- twigs
- petal
- stamen
- carpel
- pollination
- fertilisation
- germination

- I can investigate the way in which water is transported within plants.
- I can use ideas to pose questions, independently, about the world around me.
- I can make predictions and begin to give a reason.
- I can make decisions about what to observe during an investigation.
- I can take accurate measurements using standard units.
- I can discuss enquiry methods and describe a fair test.
- I can record my findings using scientific language and present in note form, writing frames, diagrams, tables and charts
- I can draw, with help, a simple conclusion based on evidence from an enquiry or observation.
- I can gather, record and use data in a variety of ways to answer a simple question.

- I know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
- I know about the work of an influential scientist.
- I know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
- I know 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

Year 4:

Autumn

States of matter

- solid
- liquid
- gas
- melting
- condensation
- Evaporation
- solidifying
- freezing
- Water vapour
- steam
- heating

- I can compare and group materials together, according to whether they are solids, liquids or gases.
- I can measure or research the temperature at which materials change state in degrees Celsius (°C)
- I can suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT.
- I can answer questions using straight forward scientific evidence.
- I can make predictions and give a reason using simple scientific vocabulary.
- I can make systematic and careful observations.
- I can take accurate measurements using standard units and a range of equipment, including thermometers
- I can identify similarities/differences/changes when talking about scientific processes.
- I can use and begin to create simple keys when sorting.
- I can make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables.
- I can choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).
- I can use recorded data to make predictions, pose new questions and suggest improvements for further enquiries.
- I can identify, with help, changes, patterns, similarities and differences in data to help form conclusions and use scientific evidence to support my findings.

- I know what a gas, solid and liquid is.
- I know about the work of an influential scientist
- I know that some materials change state when they are heated or cooled.
- I know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

- Circuit
- Series circuit
- Cell
- Wire
- Bulbs
- Switch
- Lamp
- Conductors
- Insulators
- Appliance
- Battery

- I can suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT.
- I can answer questions using straight forward scientific evidence.
- I can make predictions and give a reason using simple scientific vocabulary.
- I can make systematic and careful observations.
- I can identify similarities/differences/changes when talking about scientific processes.
- I can make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables.
- I can choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).
- I can use recorded data to make predictions, pose new questions and suggest improvements for further enquiries.
- I can identify, with help, changes, patterns, similarities and differences in data to help form conclusions and use scientific evidence to support my findings.
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- I know some common appliances that run on electricity
- I know how to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, and switches.
- I know 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.
- I know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- I know some common conductors and insulators, and associate metals with being good conductors.
- I know about the work of an influential scientist.

Spring / summer

Animals including Humans

- Digestive system
- incisor
- canine
- molar
- premolar
- saliva
- oesophagus
- stomach
- small intestine
- Large intestine
- producer
- Consumer
- predator
- prey
- herbivore
- carnivore

- I can suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT.
- I can answer questions using straight forward scientific evidence.
- I can use and begin to create simple keys when sorting.
- I can choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).
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- I know the different types of teeth in humans and their simple functions.
- I know the simple functions of the basic parts of the digestive system in humans.
- I know how to construct and interpret a variety of food chains
- I know and can name some producers, predators and prey.
- I know about the work of an influential scientist

<ul style="list-style-type: none"> • Vibration • Medium • Pitch • Volume 	<ul style="list-style-type: none"> • I can find patterns between the volume of a sound and the strength of the vibrations that produced it • I can find patterns between the pitch of a sound and features of the object that produced it • I can suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. • I can answer questions using straight forward scientific evidence. • I can make predictions and give a reason using simple scientific vocabulary. • I can make systematic and careful observations. • I can take accurate measurements using standard units and a range of equipment, including thermometers • I can take accurate measurements using standard units and a range of equipment, including data loggers • I can identify similarities/differences/changes when talking about scientific processes. • I can make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables. • I can choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations). • I can use recorded data to make predictions, pose new questions and suggest improvements for further enquiries. • I can identify, with help, changes, patterns, similarities and differences in data to help form conclusions and use scientific evidence to support my findings. • 	<ul style="list-style-type: none"> • I know how sounds are made, associating some of them with something vibrating • I know that vibrations from sounds travel through a medium to the ear • I know about the work of an influential scientist • I know that sounds get fainter as the distance from the sound source increases • I know what materials provide a good insulation against sound
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Living things and their habitats

- Classification key
- Environment
- Habitat
- Vertebrate
- Fish
- Amphibians
- Reptiles
- Birds
- Mammals
- Invertebrates
- Snails
- Slugs
- Worms
- Spiders
- Insects

- I can suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT.
- I can answer questions using straight forward scientific evidence.
- I can use and begin to create simple keys when sorting.
- I can choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).
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- I know that living things can be grouped in a variety of ways eg. vertebrate and invertebrate, warm and cold blooded.
- I know and can name some plants(including trees) and animals in my local and wider habitat.
- I know that environments can change and that this can sometimes pose dangers to living things.
- I know about the work of an influential scientist.

Year 5:

Autumn

Properties and Changes of Matter

- thermal
- conductor
- insulator
- solvent
- particles
- Suspensions
- Solubility
- Hardness
- Transparency
- Dissolve
- Solution
- Separation
- Filtration
- Comparative

- 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
- I can investigate factors that affect the rate of dissolving
- I can use my knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- I can observe and compare the changes that take place when baking bread
- I can raise different types of scientific questions, and hypotheses.
- I can make predictions and give a reason using scientific vocabulary.
- I can plan and carry out comparative and fair tests, making systematic and careful observations.
- I can make measurements using a range of scientific equipment with increasing accuracy and precision.
- I can use and develop keys to identify, classify and describe materials.
- I can plan a range of science enquiries, including comparative and fair tests.
- I can record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models.
- I can use a simple mode of communication to justify my conclusions on a hypothesis.
- I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas.

- I know and can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
- I know that some materials will dissolve in liquid to form a solution, and can describe how to recover a substance from a solution.
- I know that dissolving, mixing and changes of state are reversible changes.
- I know 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.
- I know about the work of an influential scientist of chemistry.

<p>Year 5:</p> <p>Spring</p> <p>Forces</p>	<ul style="list-style-type: none"> • Gravity • Friction • Air resistance • Particles • Upthrust • Weight • Newtons (Newton meter) 	<ul style="list-style-type: none"> • I can raise different types of scientific questions, and hypotheses. • I can make predictions and give a reason using scientific vocabulary. • I can plan and carry out comparative and fair tests, making systematic and careful observations. • I can make measurements using a range of scientific equipment with increasing accuracy and precision. • I can plan a range of science enquiries, including comparative and fair tests. • I can record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models. • I can use a simple mode of communication to justify my conclusions on a hypothesis. • I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. 	<ul style="list-style-type: none"> • 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 that an object's weight relates to its gravitational force. • I know 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. • I know about the work of an influential scientist of gravity.
<p>Year 5:</p> <p>Autumn/ Spring</p> <p>Earth in space</p>	<ul style="list-style-type: none"> • Earth • Sun • Moon • Solar system • Planets • Spherical bodies • Rotation • Axis 	<ul style="list-style-type: none"> • I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky • I can raise different types of scientific questions, and hypotheses. • I can make predictions and give a reason using scientific vocabulary. • I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. 	<ul style="list-style-type: none"> • I know that the sun, Earth and moon are approximately spherical bodies. • I know the movement of the Earth and other planets relative to the sun in the solar system. • I know the structure of the Earth. • I know the movement of the moon relative to the Earth. • I know the planets of our solar system. • I know about the work of an influential scientist of physics.

<p style="text-align: center;">Summer</p> <p style="text-align: center;"><u>Animals including Humans</u></p>	<ul style="list-style-type: none"> • Development • Puberty • Embryo • Womb • Gestation • Growth 	<ul style="list-style-type: none"> • I can research the gestation periods of other animals and compare them with humans • I can raise different types of scientific questions, and hypotheses. • I can use and develop keys to identify, classify and describe living things. • I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. 	<ul style="list-style-type: none"> • I know changes that take place as humans develop to old age. • I know the changes experienced in puberty. • I know about the work of an influential scientist of fertility.
<p style="text-align: center;">Summer</p> <p style="text-align: center;"><u>Living things and their habitats</u></p>	<ul style="list-style-type: none"> • Life-cycle • Mammal • Amphibian • Reproduction 	<ul style="list-style-type: none"> • I can raise different types of scientific questions, and hypotheses. • I can use and develop keys to identify, classify and describe living things. • I can record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models. • I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. 	<ul style="list-style-type: none"> • I know about asexual reproduction in plants. • I know the difference between pollination and fertilisation. • I know the life process of reproduction in some plants and animals. • I know the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • I know about the work of an influential scientist

Year 6:

Autumn

Electricity

- Volts
- Resistance
- Switch
- Symbols
- Buzzers

- I can use diagrams to predict if a circuit will work.
- I can systematically identify the effect of changing one component at a time in a circuit.
- I can pose/select the most appropriate line of enquiry to investigate scientific questions.
- I can make predictions and give a reason using scientific vocabulary.
- I can base my predictions on findings from previous investigations.
- I can make my own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.
- I can choose the most appropriate equipment in order to take measurements, explaining how to use it accurately.
- I can decide how long to take measurements for, checking results with additional readings
- I can select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests.
- I can choose the most effective approach to record and report results, linking to mathematical knowledge.
- I can identify validity of conclusions and the required improvement to methodology used.
- I can identify and explain causal relationships in data and identify evidence that supports or refutes my findings, selecting fact from opinion.

- I know the recognised symbols when representing a simple circuit in a diagram
- I know about the work of an influential scientist of electricity.
- I know that the brightness of a bulb is associated with the number and voltage of cells used in the circuit.
- I know and can give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.

- Refraction
- Light source
- Travel
- Spectrum
- Phenomena
- Rainbow
- Colour

- I can make shadows from light sources, objects and shadows by using shadow puppets.
- I can pose/select the most appropriate line of enquiry to investigate scientific questions.
- I can make predictions and give a reason using scientific vocabulary.
- I can base my predictions on findings from previous investigations.
- I can make my own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.
- I can choose the most appropriate equipment in order to take measurements, explaining how to use it accurately.
- I can decide how long to take measurements for, checking results with additional readings
- I can select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests.
- I can choose the most effective approach to record and report results, linking to mathematical knowledge.
- I can identify validity of conclusions and the required improvement to methodology used.
- I can identify and explain causal relationships in data and identify evidence that supports or refutes my findings, selecting fact from opinion.

- I know that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
- 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 objects are seen because they give out or reflect light into the eye.
- I know that white light is a combination of seven colours known as the visible spectrum.
- I know that refraction is the bending of light.
- I know about the work of an influential scientist of light.

<p style="text-align: center;">Spring</p> <p style="text-align: center;"><u>Animals including Humans</u></p>	<ul style="list-style-type: none"> • Artery • Vein • Capillary • Atria • Ventricle • Valves • Lifestyle • Substance • Balanced diet 	<ul style="list-style-type: none"> • I can pose/select the most appropriate line of enquiry to investigate scientific questions. • I can make predictions and give a reason using scientific vocabulary. • I can base my predictions on findings from previous investigations. • I can make my own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests. • I can identify and explain causal relationships in data and identify evidence that supports or refutes my findings, selecting fact from opinion. 	<ul style="list-style-type: none"> • I know the main parts of the human circulatory system, and can describe the functions of the heart, blood vessels and blood. • I know the impact of diet, exercise, drugs and lifestyle on the way my body functions. • I know the ways in which nutrients and water are transported within animals, including humans. • I know about the work of an influential scientist of the human body. • I know how some drugs and other substances can be harmful to the human body.
<p style="text-align: center;">Spring/ Summer</p> <p style="text-align: center;"><u>Living Things</u></p>	<ul style="list-style-type: none"> • Classification • Micro-organisms • Vertebrate • Invertebrate • Arthropod 	<ul style="list-style-type: none"> • I can use the Linnean classification system • I can use classification systems and keys to identify some animals and plants in the immediate environment. • I can research unfamiliar animals and plants from a broad range of other habitats and place them in a classification system. • I can pose/select the most appropriate line of enquiry to investigate scientific questions. • I can identify and explain patterns seen in the natural environment. 	<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. • I know about the work of an influential scientist of the classification system. • I know what fungi is.

- Fossils
- Offspring
- Adaptation
- Evolution

- I can analyse the advantages and disadvantages of specific adaptations
- I can pose/select the most appropriate line of enquiry to investigate scientific questions.
- I can make predictions and give a reason using scientific vocabulary.
- I can base my predictions on findings from previous investigations.
- I can make my own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.

- I know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
- I know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
- I know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
- I know about the work of an influential scientist of evolution.
- I know that variation in offspring over time can make animals more or less able to survive in particular environments.
- I know how Darwin's theories of evolution contradict religion.