Science progression document

EYFS
Birth to 5 matters **Range 3 (18-24 months)** •Is curious and interested to explore new and familiar experiences in nature: grass, mud, puddles, plants, animal life • Explores objects by linking together different approaches: shaking, hitting, looking, feeling, tasting, mouthing, pulling, turning and poking • Remembers where objects belong • Matches parts of objects that fit together, e.g. puts lid on teapot **Range 4 (24-26 months)** • Notices detailed features of objects in their environment • Can talk about some of the things they have observed such as plants, animals, natural and found objects • Enjoys playing with small world reconstructions, building on first-hand experiences, e.g. visiting farms, garages, train tracks, walking by river or lake **Range 5 (36-38 months)** • Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world • Talks about why things happen and how things work • Developing an understanding of growth, decay, and changes over time • Shows care and concern for living things and the environment • Begin to understand the effect their behaviour can have on the environment **Range 6 (48-60 months)** • Looks closely at similarities, differences, patterns and change in nature • Knows about similarities and differences in relation to places, objects, materials and living things • Talks about the features of their own immediate environment and how environments might vary from one another • Makes observations of animals and plants and explains why some things occur, and talks about changes

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cornerstones unit: Exploring Autumn	Cornerstones unit: Winter wonderland	Cornerstones unit: Starry night	Cornerstones unit: Signs of spring	Cornerstones unit: Shadows and reflections	Cornerstones unit: Sunshine and sunflowers
Children learn about the natural changes that happen during the season of autumn, including how the weather changes, why trees	Children learn about the changes that happen during winter, including the types of weather associated with	Children learn about the differences in the world at night compared to during the day. It teaches children about the	Children learn about the changes that happen during the spring, including weather and the festivals that are	Children learn about natural phenomena, including shadows, reflections and echoes. They	This seasonal project provides opportunities for outdoor learning and teaches children how to

lose their leaves and how wild animals prepare for winter.	winter. It also explores places that have snow all year round and the types of animals that live there	importance of a good night's sleep and helps them to discover what is happening in the world while they are sleeping, including finding out about nocturnal animals.	celebrated at this time of year.	explore how shadows are formed and how they can change.	care for the plants and animals in their local environment and how to stay safe in the sun.
Year 1/2 (Cycle A)					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Cornerstones unit: Seasonal changes	Cornerstones unit: Seasonal changes	Cornerstones unit: Human senses	Cornerstones unit: Human survival	Cornerstones unit: Plant parts	Cornerstones unit: Plant survival
Seasonal Change • I know the changes that happen across the four seasons (Spring, Summer, Autumn and Winter). • I know the weather associated with the seasons. I know the day length varies according to the season.	**Seasonal Change** • I know the changes that happen across the four seasons (Spring, Summer, Autumn and Winter). • I know the weather associated with the seasons. I know the day length varies according to the season.	**Animals including humans** •I know the basic parts of the human body Head, neck, shoulders, arms, elbows, hands, fingers, chest stomach, back, legs, knees, ankles, feet, toes and say which part of the body is associated with each sense.	**Animals including human**s • I know that animals, including humans, have offspring which grow into adults • I know 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	**Plants** • I know a variety of common wild and garden plants such as Daisy, dandelion, clover, buttercup, groundsel, speedwell – those growing in our outdoor environment. This includes deciduous and evergreen trees. • I know the basic structure of variety of common flowering plants, including trees.	**Plants** • I know how seeds and bulbs grow into mature plants • I know that plants need water, light and a suitable temperature to grow and stay healthy by looking at the germination of sunflower seeds.
Year 1/2 (Cycle B)					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**

Cornerstones unit: Everyday materials	Cornerstones unit: Uses of everyday materials	Cornerstones unit: Animal parts	Cornerstones unit: Animal survival	Cornerstones unit: Habitats	Cornerstones unit: Habitats
Everyday materials • I know the difference between an object and the materials from which it is made • I know and can name a variety of everyday materials, including wood, plastic, glass, metal, water and rock • I know the simple physical properties of everyday materials The properties investigated hard/soft, stretchy/not stretchy, shiny/dull, rough/smooth, bendy/not bendy, transparent/not transparent (opaque), Sticky/not sticky. • I can compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Uses of everyday materials** • I know the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • I know how the shapes of solid objects made from some materials including playdough and clay can be changed by squashing, bending, twisting and stretching.	**Animals including humans** • I know and can name a variety of common animals including fish, amphibians, reptiles, mammals and birds • I know a variety of common animals that are carnivores, herbivores and omnivores	**Animals including humans** • 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 that animals, including humans, have offspring which grow into adults. •I know the basic needs of animals, including humans, for survival (water, food and air).	**Living things and their habitats** • 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 can identify and name animals in their habitats, including micro-habitats • 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.	**Living things and their habitats** • 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 can identify and name animals in their habitats, including micro-habitats • 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.
Year 3					

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cornerstones unit: Forces and magnets	Cornerstones unit: Forces and magnets	Cornerstones unit: Animal nutrition and the skeletal system	Cornerstones unit: Plant nutrition and reproduction	Cornerstones unit: Rocks, relics and rumbles	Cornerstones unit: Light and shadows
Forces and magnets • I can compare how things move on different surfaces including those that are rough, smooth or shiny. • I know that some forces need contact between two 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 can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials including metallic and non-metallic objects. • I know magnets have two poles I can	**Forces and magnets** • I can compare how things move on different surfaces including those that are rough, smooth or shiny. • I know that some forces need contact between two 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 can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials including metallic and non-metallic objects. • I know magnets have two poles I can	**Animals including humans** • 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 humans and some other animals including mammals and invertebrates have skeletons and muscles for support, protection and movement	**Plants** •I know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers and can describe them • 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 by comparing the germination condition for cress and runner beans • I know the way in which water is transported within plants by looking at the transportation of coloured water through a celery/carnation stem • I know the part that flowers play in the life cycle of flowering	**Rocks** • I know how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • I know in simple terms how fossils are formed when things that have lived are trapped within rock • I know soils are made from rocks and organic matter	**Light** • I know we need light in order to see things and that dark is the absence of light • I know that light is reflected from surfaces • I know light from the sun can be dangerous and that there are ways to protect our eyes • I know shadows are formed when the light from a light source is blocked by an opaque object • I know that there are patterns in the way that the size of shadows change

predict whether two magnets will attract or repel each other, depending on which poles are facing	predict whether two magnets will attract or repel each other, depending on which poles are facing		plants, including pollination, seed formation and seed dispersal.		
Year 4					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Cornerstones unit: States of matter	Cornerstones unit: Grouping and classifying	Cornerstones unit: Food and the digestive system	Cornerstones unit: Sound	Cornerstones unit: Electrical circuits and conductors	Cornerstones unit: Electrical circuits and conductors

States of matter • I know how to compare and group materials together, according to whether they are solids, liquids or gases • I know 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) • I know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	**Living Things and their Habitats** • I know living things can be grouped in a variety of ways including physical characteristics • I know how to use classification keys to help group, identify and name a variety of living things in their local and wider environment • I know that environments can change and that this can sometimes pose dangers to living things.	**Animals including humans** • I know the simple functions of the basic parts of the digestive system including the mouth, oesphagus, stomach and intestines in humans • I know the different types of teeth in humans and their simple functions • I know how to construct and interpret a variety of food chains, identifying producers, predators and prey	**Sound** • I know how sounds are made, associating some of them with something vibrating • I know vibrations from sounds travel through a medium to the ear • I know how to find patterns between the pitch of a sound and features of the object that produced it • I know that there are patterns between the volume of a sound and the strength of the vibrations that produced it • I know sounds get fainter as the distance from the sound source increases	**Electricity** • I know common household 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, switches and buzzers • 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 if a switch is open or closed in a circuit and associate this with whether or not a lamp lights in a simple series circuit Sound	**Electricity** • I know common household 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, switches and buzzers • 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 if a switch is open or closed in a circuit and associate this with whether or not a lamp lights in a simple series circuit Sound
Year 5					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Cornerstones unit: Properties and changes of materials	Cornerstones unit: Properties and changes of materials	Cornerstones unit: Forces and mechanisms	Cornerstones unit: Human reproduction and aging	Cornerstones unit: Earth and space	Cornerstones unit: Earth and space
Properties and changes of materials	**Properties and changes of materials**	**Forces** • I know that unsupported objects	**Living Things and their Habitats**	**Earth and space** • I know the movement of the	**Earth and space** • I know the movement of the

• I know how to group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • I know how to use my knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	• I know how to group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • I know how to use my knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	fall towards the Earth because of the force of gravity acting between the Earth and the falling object • 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 the differences in the life cycles of a mammal, an amphibian, an insect and a bird • I can describe the life process of reproduction in some plants and animals Animals including humans. • I know the changes the occur as humans develop to old age	Earth, and other planets, relative to the Sun in the solar system • I know the movement of the Moon relative to the Earth • I know the Sun, Earth and Moon as approximately spherical bodies • 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.	Earth, and other planets, relative to the Sun in the solar system • I know the movement of the Moon relative to the Earth • I know the Sun, Earth and Moon as approximately spherical bodies • 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.
Year 6					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Cornerstones unit: Evolution and inheritance	Cornerstones unit: Evolution and inheritance	Cornerstones unit: Electrical circuits and components	Cornerstones unit: Circulatory system	Cornerstones unit: Light theory	Cornerstones unit: Light theory
Living Things and their Habitats	**Living Things and their Habitats**	**Electricity** • I know the brightness of a lamp	**Animals including humans**	**Light**	**Light**

• I know how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals • I know reasons for classifying plants and animals based on specific characteristics. **Evolution** • I know 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 living things have changed over time and that fossils provide information	• I know how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals • I know reasons for classifying plants and animals based on specific characteristics. **Evolution** • I know 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 living things have changed over time and that fossils provide information	or the volume of a buzzer is associated with the number and voltage of cells used in the circuit • I know variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • I know that there are recognised symbols to represent wires, bulb, battery, and switch when representing a simple circuit in a diagram	• I know the main parts of the human circulatory system such as heart, blood vessels and blood and describe the functions of these. • I know the impact of diet, exercise, drugs and lifestyle on the way bodies function • I can describe the ways in which nutrients and water are transported within animals, including humans.	• I know light appears to travel in straight lines • I know that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • 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 light travels in straight lines and can use this to explain why shadows have the same shape as the objects that cast them.	• I know light appears to travel in straight lines • I know that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • 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 light travels in straight lines and can use this to explain why shadows have the same shape as the objects that cast them.

about living things that inhabited the Earth millions of years ago	about living things that inhabited the Earth millions of years ago				

Working Scientifically (Ongoing throughout year)					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Asking Questions • I can ask simple questions and recognise that they can be answered in different ways		**Asking Questions** • I can ask relevant questions and use different types of scientific enquiries to answer them • I can set up simple practical enquiries, comparative and fair test		**Asking Questions** • I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	
Measuring and Recording • I can observe closely, using simple equipment • I can perform simple tests • I can gather and record data to help in answering questions		**Measuring and Recording** • I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • I can gather, record, classify and present data in a variety of ways to help in answering questions		**Measuring and Recording** • I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	
Concluding • I can identify and classify • I can use their observations and ideas to suggest answers to questions		**Concluding** • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		**Concluding** • I can identify scientific evidence that has been used to support or refute ideas or arguments • I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	

	• I can use straightforward scientific evidence to answer questions or to support their finding	
	Evaluating • I can use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. •I can identify differences, similarities or changes related to simple scientific ideas and processes.	**Evaluating** • I can use test results to make predictions to set up further comparative and fair tests