SHERINGDALE

Sequencing and Progression of Learning

Subject: Science

	Rec	Y1	Y2	Y3	Y4	Y5	Y6
Working Scientifically	Understand 'why questions. Make comments about what they have heard and ask questions to clarify their understanding. Ask questions to find out more and to check what has been said to them.	Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment Performing simple tests Identifying and classifying. Using observations and ideas to suggest answers to questions. Gather and recording data to help answer questions.		Asking relevant questions and using different types of scientific enquires to answer them. Simple practical enquires to compare and fair test Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help answer questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings.		Planning different types of scientific enquires to answer questions, including recognising and controlling variables where necessary. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Reporting and presenting 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 Using test results to make predictions to set up further comparative and fair tests. Identifying scientific evidence that has been used to support or refute ideas or arguments.	
Plants	Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant.	**Plants** 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.	**Plants** 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.	**Plants** 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.	**Plants *(living things and their habitats)*** Using and making simple guides or keys to explore and identify local plants and animals; making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.	**Plants *(Living things and their habitats)*** observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs.	**Plants *(Evolution and Inheritance)*** Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 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.

Greater Depth in Plants	Talk at length about the life cycle of a plant and compare to other life cycles.	Identify and notice similarities between various local plants and their structure.	Identify the functions of different parts of a flowering plant.	Compare the requirements of different plants.			
Animals, including humans	Understand the key features of the life cycle of an animal. Know and talk about the different factors that support their overall health and wellbeing: physical activity, healthy eating, toothbrushing, screen time, good sleep routine, being a safe pedestrian. Making observations and drawing pictures of animals and plants. Making own basic hygiene and personal needs.	**Animal, including humans** 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.	**Animals, including humans** 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.	**Animals, including humans** 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.	**Animals, including humans** 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.	**Animals, including humans** Describe the changes as humans develop to old age.	**Animals, including humans** 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.
Greater Depth in Animals, including humans	Talk at length about human and other animal life cycles and show a deep understanding.	Identify common features of vertebrates and invertebrates.	Understand and identify growth differences in humans	Identify and compare exoskeletons and endoskeletons.	Understand what happens in a food chain if the population of an organism changes.	Understand the gestation periods of humans and animals.	Understand the mechanisms of breathing to move air in and out of the lungs.
Living things and their habitats	Begin to understand the need to respect and care for the natural environment and all living things. Recognise that some environments are different to the one in which they live.		**Living things and their habitats** 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 micro-habitats Describe how animals obtain their food from		**Living things in their habitats** 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.	**Living things and their habitats** 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.	**Living things in their habitats** 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.

			plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.				
Greater Depth in Living things and their habitats			Identify a range of living things and suggest why they may be found in that habitat.		Describe how living things adapt to an environment.	Understand sexual and asexual reproduction.	Identify differences between species, and explain the reasons why
Rocks				**Rocks** 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.			**Evolution and inheritance** 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.
Greater Depth in Rocks				Explain the importance of studying rocks.			Understand how homologous structures found in fossils provide evidence of evolution
Materials	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about the differences between materials and changes they notice. Understand some of the important processes and changes in the natural world around them, including changing states of matter.	**Everyday materials** 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.	**Uses of everyday materials** 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.	**Materials *(Forces and Magnets)*** 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.	**States of matter - materials** 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.	**Properties and changes of materials** 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	**Everyday materials** 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.

						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.	
Greater Depth	Experiment with different materials in their play and give reasons for their choices.	Identify uses of different materials from their properties	Use the properties of materials to identify the suitability for a particular purpose.	Understand how gravity and friction affect everyday materials.	Understand and identify the arrangement of particles in solids, liquids and gases.	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.	
Light and Sound	Describe what they see, hear and feel while they are outside.			**Light** 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 a solid object Find patterns in the way that the sizes of shadows change.	**Sound** 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.		**Light** 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.
Greater Depth	Talk at length about the changing seasons, what they wear, what happens to the weather and trees.			Understand that light travels in a straight line.	Explain how sound travels using examples.		Understand how refraction works.

Electricity					**Electricity** 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.		**Electricity** 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.
Greater Depth					Understand the differences between complete and incomplete circuits.		Explain how a circuit operates to achieve particular operations.
Forces	Explore and talk about the different forces they can feel.			**Forces and magnets** Compare how things move on different surfaces Notice that some forces need contact between two 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 two poles Predict whether two magnets will attract or repel each other,		**Forces** 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.	

				depending on which poles are facing.			
Greater Depth	Talk about forces and the effects they feel openly in their play.					Understand how forces are affected by environmental conditions.	
Earth and Space	Explore the natural world around them. Understand the effect of changing seasons on the natural world around them. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their own experiences and what has been read in class. Understand some of the important processes and changes in the natural world around them, including the seasons.	**Seasonal change** Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies.				**Earth and space** 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.	
Greater Depth	Name the four seasons and talk about how hot and cold places have different weather patterns across the year.	Recognise changes within seasons as well as between seasons.				Identify the orbit of a plane.t is dependent on its distance from the sun.	