Science Progression Map

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Unit 1	**Nature tables**	**Seasons - Autumn**	**Seasonal changes**	**Habitats**	**Rocks**	**Habitats**	**Materials**	**Habitats**
EYFS/ National Curriculum	**Substantive** Investigate and explore their environment.	**Substantive** Explore the natural world around them Understand the effect of changing seasons on the natural world around them. Explore the natural world around them.	**Substantive** Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	**Substantive** 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	**Substantive** 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.	**Substantive** 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	**Substantive** 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. Understand 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	**Substantive** 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.			filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes . Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	
	Disciplinary Observe changes in season. Discuss how seasons impact on our lives.	**Disciplinary** To explore the world around them. To make observations of living things and	**Disciplinary** Asking simple questions and recognising that they can be answered in different ways.	**Disciplinary** Asking simple questions and recognising that they can be answered in different ways.	**Disciplinary** Setting up simple practical enquiries, comparative and fair tests making systematic and careful	**Disciplinary** Gathering, recording, classifying and presenting data in a variety of ways to help in	**Disciplinary** Planning different types of scientific enquiries to answer questions, including recognising and controlling	**Disciplinary** Recording data and results of increasing complexity using scientific diagrams and labels, classification keys,

	To sort daily objects out in relation to seasons.	draw the world around them. To discuss and compare. Respond to questions.	Observing closely, using simple equipment. Performing simple tests. Identifying and classifyig using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	Observing closely, using simple equipment. Using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	answering questions. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	variables where necessary tking 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 Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written	tables, scatter graphs, bar and line graphs. Identifying scientific evidence that has been used to support or refute ideas or arguments.

							forms such as displays and other presentations.	
Key Vocabulary	Hot/cold Summer/winter	Autumn Explore Feel Touch Smell See	Spring Summer Autumn Winter Temperature Thermometer	Habitat Micro habitat Organism Deciduous Evergreen Invertebrates/ Vertebrates	Sedimentary Metamorphic Igneous Permeable /impermeable Erosion Solidify	Environment Migrate Hibernate Human impact Positive Negative	Conductor Insulator Dissolve Soluble/ Insoluble Filtering Reversible/ Irreversible changes	Characteristics Micro-organisms Kingdoms Species Flowering plant Non-flowering plant
Unit 2	**Materials.**	**Once Upon A Time (Bridges, houses and plants)**	**Plants**	**Plants**	**Forces**	**Animals**	**Forces**	**Animals**
EYFS/ National Curriculum	**Substantive** Talk about the differences between materials and changes they notice.	**Substantive** Explore collections of materials with similar and/or different properties. Use all their senses in hands-on exploration of natural materials. Talk about the differences between materials and changes they notice. Plant seeds and care for growing plants.	**Substantive** Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen Identify and describe the basic structure of a variety of common plants including roots, stem/trunk, leaves and flowers.	**Substantive** 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.	**Substantive** 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	**Substantive** 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.	**Substantive** 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	**Substantive** Identify and name the main parts of the human circulatory system, and explain 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.

		Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary.			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, depending on which poles are facing.		force to have a greater effect.	
	Disciplinary Explore materials with different properties. Use a wide range of vocabulary to discuss their findings. Discuss similarities/ differences in materials.	**Disciplinary** Use a range of different tools. Experiment with different materials and colours. Discuss what has been made and explain how it was made. Respond to questions.	**Disciplinary** Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment identifying and classifying.	**Disciplinary** Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment performing simple tests. Using their observations and	**Disciplinary** Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of	**Disciplinary** Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and,	**Disciplinary** Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	**Disciplinary** Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Recording data and results of increasing complexity using scientific diagrams

				ideas to suggest answers to questions gathering and recording data to help in answering questions.	equipment, including thermometers and data loggers. 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. Identifying differences, similarities or changes related to simple scientific ideas and processes.	where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers 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 straightforward scientific evidence to answer questions or to support their findings.		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.
Key Vocabulary	Rough Smooth	Grow Bean Soil Sun	Deciduous Evergreen Roots Leaves	Seeds Bulb Light/sunlight Bulbs	Forces Magnets Magnetic Attract	Digestive System Digestion/ Digestive system Oesophagus	Gravity Friction Resistance Newtons (N)	

		Fater float Sink Strong Waterproof	Flowers Trunk/stem	Temperature Conditions	Repel North/ South poles Magnetic field	Saliva Small intestine Teeth Incisors Canines Premolars Molars	Levers Pulleys	
Unit 3	**Materials**	**Amazing Animals**	**Animals**	**Materials**	**Animals**	**Materials**	**Earth and space**	**Evolution and inheritance**
EYFS/ **National Curriculum**	**Substantive** Explore collections of materials with similar and/or different properties.	**Substantive** Describe what they see, feel and hear while outside. To know match mother and baby animals and say their names. To know the life cycle of a butterfly/chick. Looking at different types of animals, zoo, farm, under the sea, Antarctic. Categorised the animals and look at habitats, . Exploring hot and cold environments (Antarctic and where we live) – explore ice.	**Substantive** Identify and name a variety of common animals that are birds, fish, amphibians, reptiles 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 (birds, fish, amphibians, reptiles and mammals, and including pets). Identify, name, draw and label the	**Substantive** 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.	**Substantive** Identify that animals, including human, 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 animals have skeletons and muscles for support, protection and movement.	**Substantive** 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	**Substantive** 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.	**Substantive** 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

		Animals which hatch from eggs. Changing seasons – Spring (Easter/new life)	basic parts of the human body and say which parts of the body is associated with each sense.			rate of evaporation with temperature.		adaptation may lead to evolution.
	Disciplinary Explore materials with different properties. Use a wide range of vocabulary to discuss their findings. Discuss similarities/ differences in materials.	**Disciplinary** Understand the key features of the life cycle of a plant and an animal. Recognise some environments that are different to the one in which they live.	**Disciplinary** observing closely, using simple equipment. Identifying and classifying. Using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	**Disciplinary** Asking simple questions and recognising that they can be answered in different ways. Performing simple tests. Using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	**Disciplinary** Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including. thermometers and data loggers. Recording findings using simple scientific language, drawings, labelled diagrams, keys,	**Disciplinary** Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple	**Disciplinary** Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. 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.	**Disciplinary** Planning different types of scientific enquiries 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 li - ne graphs.

					bar charts, and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using straightforward scientific evidence to answer questions or to support their findings.	conclusions, make predictions for new values, suggest improvements and raise further questions. Using straightforward scientific evidence to answer questions or to support their findings.		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. Identifying scientific evidence that has been used to support or refute ideas or arguments.
Key Vocabulary	Similarities (same) Differences (different)	Life cycle Hot/cold Hatch Egg Walk Fly Swim Run Crawl Slither	Carnivore Omnivore Herbivore Amphibians Reptiles Mammals Senses Hear Touch Taste Smell Sight	Transparent Translucent Waterproof Properties Solid Flexible	Diet & Nutrition Diet Vitamins/ Minerals Proteins Carbohydrates Skeleton Skeleton Muscles Joints Organs	Oxygen Carbon dioxide Particles State Evaporation Condensation	Orbit Axis Rotate/rotation Solar system Moon phases Spherical/ Sphere	Evolution, Evolve Natural Selection Survival Variation Inheritance Inhabited

Unit 4	Forces	Into the woods (materials, change of state, hibernation and shadows)	Materials	Animals	Plants	Sound	Habitats	Electricity
EYFS/ **National Curriculum**	**Substantive** Explore and talk about different forces they feel.	**Substantive** Introduce the 5 senses – Touch/ Taste – Goldilocks porridge – before and after cooking. Changing seasons - observing the tree in church grounds, season tree poster. (Leaf Man) Habitats and climate of different bears. Ice – freezing and melting (We're going on a bear hunt) Hibernation – animals (Gruffalo) Dark and light sources Shadows Man – made and natural materials (Non – fiction texts	**Substantive** Distinguish between object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, 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 physical properties.	**Substantive** 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.	**Substantive** Identify and describe the functions of different parts of plants; roots, stem, 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 ways in which water is transported within plants. Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	**Substantive** Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from a sound 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.	**Substantive** Describe the life process of reproduction in some plants and animals. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	**Substantive** 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**.**
	Disciplinary Explore how things work.	**Disciplinary**	**Disciplinary** Asking simple questions and recognising that	**Disciplinary** Observing closely, using simple equipment.	**Disciplinary** Setting up simple practical enquiries,	**Disciplinary** Asking relevant questions and using different	**Disciplinary** Planning different types of scientific	**Disciplinary** Planning different types of scientific enquiries to

	To discuss what they feel (push and pull). Explore magnets.	Explore the natural world around them. Describe what they see, hear and feel whilst outside. Recognise some environments that are different to the one in which they live. Understand the effect of changing seasons on the natural world around them.	they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	Performing simple tests using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	comparative and fair tests 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 in answering questions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Using straightforward scientific evidence to answer questions or to support their findings.	types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Identifying differences, similarities or changes related to simple scientific	enquiries to answer questions, including recognising and controlling variables where necessary. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	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. Using test results to make predictions to set up further comparative and fair tests. 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

						ideas and processes.		displays and other presentations.
Key Vocabulary	Push Pull Magnet	Hibernation Shadows Light Dark Freezing Liquid Melting Habitats	Plastic Metal Glass Wood Rough Smooth	Offspring Growth Life cycles Nutrition Respiration Hygiene	Pollination Photosynthesis Dispersal Function Requirements Nutrients	Vibrations Sounds Noise Pitch Source Decibels	Metamorphosis Carpel Pollination Fertilisation Germination Reproduction	Voltage Components Volts Series circuit Symbols Variation
Unit 5	**Life cycles**	**Imagine That! - Dinosaurs/Space**			**Light**	**Electricity**	**Animals**	**Light**
EYFS/ **National Curriculum**	**Substantive** Understand the key features of the life of a plant and animal. Plant seeds and care for growing plants. Respect and care for a natural environment and all living things.	**Substantive** Look at Space and talk about the planets, materials. (Astro Girl Story) Experiment – bubbling planets – changing state of materials. (Neil Armstrong) Sorting and naming fruit and vegetables. (Supertato) Sorting dinosaurs into different criteria. Carnivores and Herbivores Explore and make fossils. (Non – Fiction Dinosaurs, Mary Anning)			**Substantive** 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	**Substantive** 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	**Substantive** Describe the changes as humans develop from birth to old age.	**Substantive** 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

		Explorers – David Attenborough Zoo Trip – Looking at the dinosaur section. Seasonal Change – Summer Observe the tree in the church ground			sizes of shadows change**.**	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.		straight lines to explain why shadows have the same shape as the objects that cast them.
	Disciplinary To explore the world around them and make observations. Use vocabulary to describe what they see.	**Disciplinary** Explore the natural world around them. Describe what they see, hear and feel whilst outside. Recognise some environments that are different to the one in which they live. Understand the effect of changing seasons on the natural world around them. **ELG** Know some similarities and differences between the			**Disciplinary** Asking relevant questions and using different types of scientific enquiries to answer them. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	**Disciplinary** Setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	**Disciplinary** Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. 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,	**Disciplinary** Different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of

		natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Explore the natural world around them, making observations and drawing pictures of animals and plants. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter				Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions **.**	causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments.	trust in results, in oral and written forms such as displays and other presentations.
Key Vocabulary	Life cycle Beginning (start) Growth	Space Carnivore Herbivore Planets Sun Moon Stars			Reflection Shadow Light source Opaque Transparent Translucent	Appliances Electricity Conductors Insulators Circuit Cell	Gestation Fetus Fertilisation Species Adolescent Puberty	Reflection Refraction Light rays Transparent Opaque Translucent