Broadwood Primary School
Science - Progression map

EYFS

Understanding the world

3 and 4 year olds will be learning to:

- Use all senses in hands-on exploration of natural materials
- Explore collections of materials with similar and/or different materials
- Talk about what they see using a wide vocabulary
- Explore how things work
- Plant seeds and care for growing plants
- Understand the key features of the life cycle of a plant or an animal
- Begin to understand the need to care for the environment and living things
- Explore and talk about forces they can feel
- Talk about the differences between materials and changes they notice

Reception 4 to 5 year olds will be learning to:

- Explore the natural world around them
- Describe what they see, hear and feel whilst outside
- Recognise some environment's that are different to the one in which they live
- Understand the effect of changing seasons on the world around them

Children will begin to make sense of their physical world and their community. They will listen to a broad selection of stories, non-fiction, rhymes and poems to foster their understanding of our world. Children will explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

National Curriculum statements in red are from other linked topics.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	Become familiar with common names of flowers and plant structures including seeds Identify and describe the basic structure	Observe and describe how seeds and bulbs into mature plants Find out and describe how plants need water, light and a suitable temperature	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	**Y4 - Living things and their habitats** Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify	**Y5 - Living things and their habitats** Describe the life process of reproduction in some plants and animals.	**Y6 - Living things and their habitats** Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including

	of a variety of common flowering plants, including trees Become familiar with common names of flowers and plant structures. Identify and name a variety of common wild and garden plants. Identify and name a variety of deciduous and evergreen trees. Understand how plants change over time. Observe the growth of planted flowers Become familiar with plant structures Keep records of how plants change over time **Skills** Observe closely, using simple equipment Perform simple tests Identify and classify	to grow and stay healthy Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Understand the requirements of plants for germination, growth and survival, as well as, the processes of reproduction and growth in 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. **Skills** Observe closely, using simple equipment Perform simple tests	(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 **Skills** Ask relevant questions and using different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests	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.		micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.

	Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions.	Gather and record data to help in answering questions. Identifying and classifying				
Animals 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 **Skills** Observe closely, using simple equipment Identify and classify	<u>Lifecycles</u> Notice that animals, including humans, have offspring which grow into adults Recognise the stages of the human lifecycle. Identify the offspring and parent of an animal. Explore the lifecycle of a chicken, butterfly and frog. <u>Health and Survival</u> 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	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 **Skills** Ask relevant questions and using different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Set up simple practical enquiries, comparative and fair tests	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 **Skills** Set up simple practical enquiries, comparative and fair tests Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams,	Describe the changes as humans develop to old age **Skills** 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	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 **Skills** Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

	Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions.	of different types of food, and hygiene **Skills** Observe closely, using simple equipment Asking simple questions and recognise that they can be answered in different ways Perform simple tests Identify and classify Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions.	Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes	keys, bar charts, and tables		Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Report and present findings Identify scientific evidence that has been used to support or refute ideas or arguments.
Living things and their habitats	**Y1 – 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. **Y1 - Animals including humans** Identify and name a variety of common animals	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	**Y3 - Plants** Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	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	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 **Skills** Plan different types of scientific enquiries to answer questions, including recognising	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 **Skills**

	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). **Y1 - Seasonal changes** Observe changes across the four seasons.	habitats, including microhabitats Explore and compare the differences between things that are living, dead, and things that have never been alive Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals using the idea of a simple food chain Identify and name different sources of food **Skills** Observe closely, using simple equipment Perform simple tests Identify and classify Use their observations and ideas to suggest answers to questions		dangers to living things **Skills** Make systematic and careful observations and, where appropriate, taking accurate measurements. Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings	and controlling variables where necessary 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	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests

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 **Skills** Observe closely, using simple equipment Asking simple questions and recognise that they can be answered in different ways Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions	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 **Skills** Observe closely, using simple equipment Perform simple tests Identify and classify Gather and record data to help in answering questions.	***Y3 - Rocks*** *Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties* *recognise that soils are made from rocks and organic matter*	***Y4 – Space Incl States of matter*** *compare and group materials together, according to whether they are solids, liquids or gases*	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 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	***Y6 - 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.*

					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 **Skills** Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Report and present findings Identify scientific evidence that has been used to support or refute ideas or arguments.	
Earth and Space (incl States of matter)	***Y1 - Seasonal changes*** *Observe changes across the four seasons.* *Observe and describe weather associated with the seasons and how day length varies.*			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	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	

				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 **Skills** Ask relevant questions and using different types of scientific enquiries to answer Set up simple practical enquiries Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, Report on findings from enquiries, Record data and results of increasing complexity	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 **Skills** Take measurements, using a range of scientific equipment, with increasing accuracy and precision Use test results to make predictions to set up further comparative and fair tests 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	
Light	**Y1 - Animals, including humans** Identify, name, draw and label the basic		Recognise that they need light in order to see things and that			Recognise that light appears to travel in straight lines

	parts of the human body and say which part of the body is associated with each sense.		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 an opaque object Find patterns in the way that the size of shadows change **Skills** Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Use straightforward scientific evidence to answer questions or to support their findings			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 **Skills** Plan different types of scientific enquiries to answer questions, including recognising and controlling variables Take measurements, using a range of scientific equipment, with increasing accuracy and precision, Use test results to make predictions to set up further comparative and fair tests Identify scientific evidence that has been

						used to support or refute ideas or arguments.
Forces and Magnets		**Y2 - Uses of everyday materials** Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Compare how things move on different surfaces Notice that some forces need contact between 2 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 Compare how things move on different surfaces Notice that some forces need contact between 2 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 how things move on different surfaces Notice that some forces need contact between 2 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 allow a smaller force to have a greater effect **Skills** Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	

			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 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing **Skills** Set up simple practical enquiries Make systematic and careful observations, taking accurate measurements using standard units, using a range of equipment Gather, record, classify and present data in a variety of ways to help in answering questions Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions		Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests 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 Identify scientific evidence that has been used to support or refute ideas or arguments.	

			Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings			
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		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 **Skills** Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and

				Recognise some common conductors and insulators, and associate metals with being good conductor **Skills** Ask relevant questions and using different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Report on findings from enquiries Identify differences, similarities or changes related to simple scientific ideas and processes		precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs 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 Identify scientific evidence that has been used to support or refute ideas or arguments.
Sound	***Y1 - Animals, including humans*** *Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.*			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 **Skills** Ask relevant questions and using different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Identify differences, similarities or changes related to simple		

				scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings		
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 **Skills** Set up simple practical enquiries, comparative and fair tests Gather, record, classify and present data in a variety of ways Record findings using simple scientific language, drawings, labelled diagrams, keys etc			

			Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions			
Evolution and inheritance		***Y2 - Living things and their habitats*** *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.*	***Y3 - Rocks*** *Describe in simple terms how fossils are formed when things that have lived are trapped within rock.*	***Y4 - Living things and their habitats*** *Recognise that environments can change and that this can sometimes pose dangers to living things.*		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 **Skills** Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Identify scientific evidence that has been

						used to support or refute ideas or arguments.
Seasonal Changes	Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies **Skills** Perform simple tests Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions.		***Y3 - Light*** *Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.*		***Y5 - Earth and space*** *Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.*	
Looking After the Environment						Further develop working scientific skills. Explore: the core concepts – 'so what the climate is, how it changes, the difference between a man-made and natural environment and where different types of animals live'. Challenge children to recall the knowledge and skills they have covered in the previous lesson(s). *During year 3 children completed a unit on Scientific Enquiry.*
Scientific Enquiry	**Year 3** - Identify and learn the scientific skills they will need to apply during each unit of learning during key stage 2. Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, and use a range of equipment, including thermometers and					

	data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings.