Science progression map

Year 1	Autumn		Spring		Summer	
Learning challenge Big Question	***Autumn topic 1*** *Who lives in a home like this?* *(Science driver)*	***Autumn topic 2***	***Spring topic 1*** *Why are humans not like Meercats?* *Why can't a Meercat live in the North Pole?* *(Science and Geography drivers)*	***Spring topic 2***	***Summer topic 1*** *What's happening in the garden now?* *(Science driver)*	***Summer topic 2***
Continuous	*Why does it get darker earlier in winter? Where do the leaves go to in the winter?* Identify seasonal and daily weather patterns in the United Kingdom Observe changes across the four seasons; observe and describe weather associated with the seasons and how day length varies.					
Science Skills/Knowledge	Weather and seasons Distinguish between an object and the materials 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. Identify and name a variety of common, wild and green plants, including		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 human body is associated with each sense.	Distinguish between an object and the materials 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; .	Identify and name a variety of common, wild and green plants, including deciduous and evergreen trees; Identify and describe the basic structure of a variety of common flowering plants, including trees.	
	Ask simple questions and recognise that they can be answered in different ways; Observe carefully, using simple equipment; Identifying and classifying Using their observations and ideas to suggest answers to their questions; Gathering and recording data to help in answering questions.					

Science progression map

Year 2 Curriculum Map	**Autumn**		**Spring**		**Summer**	
Learning Challenge Big Question	**Autumn topic 1** Traction man Which materials would Traction man use to make a super hero costume?	**Autumn topic 2**	**Spring topic 1** How will 5 a day help me to be healthy? (Science driver)	**Spring topic 2**	**Summer topic 1** Why would a Bog Baby not make a good pet? (Science driver)	**Summer topic 2**
ONGOING SCIENCE TOPIC: What is happening to my plant? Ongoing across the year—plant bulbs and seeds in 'allotment' during autumn term and record their growth during the year.						
Science skills and knowledge	<u>Materials</u> 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	<u>Plants</u> 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 use the local environment throughout the year to observe how plants grow.	<u>Animals</u> 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		<u>Habitats</u> 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 microhabitats describe 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	
work scientifically by: observing and recording, with some accuracy use first-hand observation and measurement asking questions identify and discuss ideas find out about people in science						

Science progression map

Year 3

	Autumn			Spring			Summer		
Learning challenge Big Question	What do rocks tell us about how the earth was formed? What makes the earth angry? Geog			How far can you throw your shadow?	Is it magic?		How did that blossom become an apple?	How do our bodies move?	
Science Skills/Knowledge	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			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 size of shadows change	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 everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials, describe magnets as having 2 poles	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	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

	• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests Choose 2 • 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

Year 4 Curriculum Map	**Autumn**	**Spring**		**Summer**	
Learning challenge Big Question	*How could we cope without electricity for one day?(Science driver)*	*Why is water so amazing? (Science driver)*	*Why is the sound that a popular group makes enjoyed by so many? (Science driver)*	*What happens to the food we eat? (Science driver)*	*Which wild animals and plants thrive in London?(Science driver)*

Science progression map

Science Skills/Knowledge	• 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.		• 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.	• 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.	• 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	• 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. • interpret a variety of food chains, identifying producers, predators and prey.
Science Skills/Knowledge	• 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 • gathering, recording, classifying and presenting data in a variety of ways to help in answering 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.					

Science progression map

Year 5 Curriculum Map 2018-19	Autumn		Spring		Summer	
Science Skills/Knowledge	*Can you feel the force? (Science driver)* • 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	*Will we ever send another human to the Moon ? (Science driver)* 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	*When do we use chemical changes in our lives? (Science driver)* 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	*When do we use chemical changes in our lives? (Science driver)* 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 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 change.	*Do all animals and plants start life as an egg? (Science driver)* • 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	*How different will you be when your parents are as old as your grandparents? (Science driver)* describe the changes as humans develop to old age

Working Scientifically

- 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 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 a degree of trust in results, in oral and written forms such as displays and other presentations

Science progression map

Year 6 Curriculum Map	Autumn		Spring		Summer
Learning challenge Big	Autumn 1topic *What makes plants and animals different? (Science)*	Autumn topic 2 *Have we always looked like this? (Science)*	Spring topic 1 *How are humans able to run a marathon? (Science)*	Spring topic 2 *How can you light up your life? (Science)*	Question Summer topic 1 Are you a bright spark? (Science)

Science progression map

Y 6 **Science** **Skills/Knowledge**	**Living things and their inhabitants** 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	**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	**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. their environment in different ways and that adaptation may lead to evolution.	. **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 as the	**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.	
	• 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 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 a 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					

Science progression map