Eastfield Science Progression

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals inc Humans			x	x	x	x	x	x
Living things and their habitats				x		x	x	x
Evolution and inheritance								x
Plants			x	x	x			
Materials			x	x	x	x	x	
Seasonal Changes			x					
Forces					x		x	
Light					x			x
Sound						x		
Electricity						x		x
Earth and Space							x	

Eastfield Science Progression

Working Scientifically is woven throughout the units.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically	**Pupils are taught to:**	**Pupils are taught to:**	**Pupils are taught to:** • 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 their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions	**Pupils are taught to:** • 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 their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • • 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	**Pupils are taught to:** • • 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

Eastfield Science Progression

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals inc Humans	**Pupils are taught to:**	**Pupils are taught to:**	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • describe the changes as humans develop to old age.	**Pupils are taught to:** • 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.
	Key Questions:	**Key Questions:**	**Key Questions:** What do we mean by 'animals'? What are the differences between animals? What do different animals eat? How can I sort different animals? What is my body made up of? What are my senses and how do I use them?	**Key Questions:** How do animals change as they grow? How do humans change as they grow? What do humans need to survive? What do I need to stay healthy? Why is exercise so important? Do we really have to wash our hands?	**Key Questions:** What types of food do animals need to survive? How are food groups different to each other? Why are skeletons so important? What are the names of the bones in my body? Can I explain how our skeletons help us? How do muscles work?	**Key Questions:** Why do we need teeth? How can teeth decay? What is the digestive system? When I eat, what happens to the food? Who did this poo? What are food chains?	**Key Questions:** What does gestation mean? Can I explain how babies grow and develop? What happens during puberty? What happens when we get older? How long do humans live for?	**Key Questions:** How do I sort and classify animals based on similarities and differences? Who was Carl Linnaeus and what impact did he have on classification? Can I identify the characteristics of different animals? What are the different types of microorganism? Can I explore types of microorganisms? Can I classify organisms found in my local area?

Eastfield Science Progression

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Living Things and their Habitats				**Pupils are taught to:** • 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.		**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.
	Key Questions:	**Key Questions:**	**Key Questions:**	**Key Questions:** How do I know whether things were living, dead or never been alive? What is a habitat? What other habitats are there in the world? What is a food chain? How do I design a great bug hotel? How do I build a great bug hotel?	**Key Questions:**	**Key Questions:** What is a living thing? How do I sort and classify vertebrates? Local living things – what are they? Can I create a classification key? Can I recognise positive and negative changes to the local environment? How do living things become endangered?	**Key Questions:** How do flowering plants reproduce? What are the advantages and disadvantages of sexual and asexual reproduction? What is the life cycle of mammals? Can I explore the lifecycles of insects and amphibians? Can I compare lifecycles?	**Key Questions:** How do I sort and classify animals based on similarities and differences? Who was Carl Linnaeus and what impact did he have on classification? Can I identify the characteristics of different animals? What are the different types of microorganism? Can I explore types of microorganisms? Can I classify organisms found in my local area?

Eastfield Science Progression

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evolution and Inheritance								**Pupils are taught to:** • 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.
								Key Questions: What does inheritance mean? What does adaptation mean? Can I explore theories of evolution? Can I explore evolution theories through fossils? Can I explore the evolution of humans? Are there advantages and disadvantages to human intervention?

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	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants			**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.			
			Key Questions: How are beans grown from seeds? What is growing outside? What grows in the wild? What are parts of a flower and what are their functions? How are some trees different? Can I present my understanding of what seeds need to grow?	**Key Questions:** How does a seed grow? What are the different parts of the plant? Why do plants grow when a human didn't plant the seed? Which plants can be eaten?	**Key Questions:** Can I set up a fair test? What do seeds need to grow? Can I identify and locate parts of a flower? Why is water so important to plants? Can I explore more parts of a flower? What is the life cycle of a flower? Can I evaluate an experiment?			

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	Nursery	Reception	Year 1	Year 2	Year 3 Rocks	Year 4 States of Matter	Year 5	Year 6
Materials			**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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.	**Pupils are taught to:** • 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; • 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.	
			Key Questions: What types of materials surround me? What are the similarities and differences between different materials? How do magnets work? How are materials suited to their purpose? Can I design a fair test? Which little pig was most clever?	**Key Questions:** Can I explore the uses of materials? Which material is the best to absorb liquid? What is the best material to build a house? Can I evaluate an experiment? How can materials change shape? Why is recycling important?	**Key Questions:** What are the different types of rock? Can I compare and contrast the properties of different rocks? Can I identify rocks around me? What is a fossil and where can they be found? Can I describe the different soils? How permeable is soil?	**Key Questions:** What's the difference between a solid, liquid and a gas? Do gases weigh anything? How can materials change state? What is evaporation and condensation? What is the Water Cycle?	**Key Questions:** Can I sort and classify materials? How do materials stay warm or keep cool? Which materials conduct electricity? Can I investigate dissolving? Can I separate mixtures? Can all changes be reversed?	

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	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Seasonal Changes			**Pupils are taught to:** • observe changes across the 4 seasons; • observe and describe weather associated with the seasons and how day length varies.					
			Key Questions: What do I already know about the weather? Can I observe and examine data about weather? How do I know when it is autumn? What's the difference between autumn and winter? Can I prove the difference between autumn and winter?					

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	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Forces					**Pupils are taught to:** • 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; • predict whether 2 magnets will attract or repel each other, depending on which poles are facing.		**Pupils are taught to:** • 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.	
					Key Questions What do we mean by 'force'? How and why do things move? What is magnetism? What are magnetic poles? Can I design and make a magnetic game?		**Key Questions** What are forces? What do we mean by 'gravity'? How do parachutes work? What is water resistance? Can I explain how friction acts on an object? How do mechanisms work?	

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	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Light					**Pupils are taught to:** • 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 an opaque object; • find patterns in the way that the size of shadows change.			**Pupils are taught to:** • 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.
					Key Questions What is light? Why do we protect our eyes? What keeps us safe in the dark? Why are mirrors good reflectors? How are shadows formed? How do shadows change?		How do we see? How does light reflect? Can I explain what refraction is? How does light travel through a prism? How do we see colour? How are shadows formed?	**Key Questions** How do we see? How does light travel? How does light reflect? What is refraction? Why do shadows look like they do? Why does my shadow change length over the course of the day?

Eastfield Science Progression

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Sound						**Pupils are taught to:** • 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.		
						Key Questions How is sound made? How does sound travel? How can I change the pitch and volume? How does sound change over a distance? How do we sound proof? Can I design the sound proofing device?		

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	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Electricity						**Pupils are taught to:** • 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.		**Pupils are taught to:** • 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.
					Key Questions Y4 What is electricity?	**Key Questions:** What is electricity? How are appliances around the home powered? Can I create complete and incomplete circuits? What are insulators and conductors? Can I explore switches? Can I create an electrical game?		Key Questions: Can I build a circuit? Can I recognise and draw scientific circuits? What happens when I change voltage?

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	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Earth and Space							**Pupils are taught to:** • 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.	
							Key Questions: Why spheres are important to space? Can I explore the planets in the Solar System? Geocentric Vs Heliocentric? How do night and day work? Can it be sunny everywhere in the world, at the same time? Why does the moon appear to change shape?	