



Buckingham Park

Church of England Primary School

Excellence, through God who strengthens us

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School Policy Document

Science Policy

1. BACKGROUND

- 1.1. At Buckingham Park Church of England Primary School, it is important that every member of the school community feels valued and respected, and that each person is treated fairly and well. We are a caring community, built on a clear Christian foundation and rooted in Christian values. We aim to provide the highest quality all round education, for each and every child, in partnership with parents, within the context of a Christian community. In short, 'Excellence, through God who strengthens us'.
- 1.2. All school policies are therefore designed to support the way in which all members of the school can live and work together in a supportive way. It aims to promote an environment where everyone feels happy, safe and secure.
- 1.3. The school has a set of values that are based on Jesus' Sermon on the Mount. These are a means of promoting good relationships, so that people can work together with the common purpose of helping everyone to learn. These values are displayed below and permeate everything we do:

We are kind, helpful and polite
We do our best
We are honest
We share
We are peacemakers
We forgive others
We take care of everything, and everyone

2. INTENT

At Buckingham Park we believe that Science provides the foundation for understanding the world around us. We aim for our children to be excellent scientists; providing a science curriculum that is inspiring and exciting. By offering practical investigative opportunities we enable our children to become independent learners and give them the confidence to explore the answers to scientific based questions.

Our children are encouraged to develop and use a range of scientific enquiry skills from making first hand observations to collecting real data; from identifying to investigating similarities and differences, patterns and change; and from recognising a fair test to designing and carrying out a fair test. By understanding the nature, processes and methods of science and by working in partnership with each other, the children at Buckingham Park learn to appreciate the impact of science upon themselves and others both now and in the future.

SEN/ Inclusion

At Buckingham Park School, we value, nurture and celebrate the skills and talents of every child. Our curriculum is aspirational, vibrant, engaging and inclusive. We strive to enable all children to do their best and optimise their potential through quality first teaching, careful planning- in line with developmental stage and interests of cohorts, removal of barriers in accessing the curriculum e.g., writing frames, visual prompts, adapted resources and alternative methods of recording.

The careful planning and learning opportunities are designed to reduce, and ultimately remove, gaps between disadvantaged and vulnerable learners and their peers. Our commitment to engaging, inspiring

and equipping all learners is at the heart of our curriculum intent and fosters the implementation of our curriculum and the development of skills, in both academic and non-academic subjects equally, ensuring equality of opportunity and a broad and balanced provision- for all learners- in a holistic and personalised way.

Careful consideration is afforded to the broad and diverse offer interwoven throughout our curriculum to reflect our multi-cultural multi faith school community and so that quality, first-hand experiences are presented in a multitude of ways enabling full participation and maximum engagement. All educational visits are risk assessed and planned, so that every child may access and enjoy these educational opportunities, capitalising on enriching and memorable experiences.

At Buckingham Park School we endeavour to instil a love of learning, for life.

3. IMPLEMENTATION

3.1 Science coverage and progression

At Buckingham Park, teachers create a medium-term plan for each unit that is taught. This includes a sequence of lessons that carefully plan for the learning of clear scientific skills, vocabulary and knowledge progression. Each unit is introduced with a “Big Question” which acts as a springboard for the discussion of ideas and opinions and is then explored through the topic generating new information to be shared. There are 5 key scientific skill sets: comparative and fair testing, identifying, classifying and grouping, pattern seeking, observing overtime and research using secondary sources.

3.2 Curriculum overviews

3.2.1 Nursery and Reception

In Early Years, we capitalise on children’s fascination and interest in their surroundings through our work in the specific area of Understanding the World in which they live. This involves guiding children to make sense of their physical world and their natural world through opportunities to investigate, observe and discover.

We encourage an appreciation of the natural world and recognising its similarities and differences

We foster a sense of awe and wonder about the world in which they live

We enhance children’s sense of responsibility for the care of their own environment and the impact it has on the whole world.

We talk about the features of their own immediate environment and how environments might vary from one another.

We understand similarities and differences in relation to places, objects, materials and living things.

We talk about past and present events in their own lives and in the lives of family members.

We understand similarities and differences between themselves and others, and among families, communities and traditions.

We make observations of animals and plants and explaining why some things occur and change.

The most relevant statements for Science are taken from the following areas of learning:

- Understanding the World
- Communication & Language
- Personal, Social & Emotional Development

An outline of topics and skills is shown here:

People, Culture and Communities	The Natural World
<p>Describes his/her immediate environment using observation, discussion, stories, non-fiction texts or maps</p> <p>Being able to ask questions about the place they live, to understand they live in Aylesbury, Buckinghamshire, United Kingdom</p> <p>To visit places in our local area like the care home, Budgens, the local park</p> <p>To learn about different cultures through our topic work on Celebrations</p>	<p>Describes what he/she can see, hear and feel outside</p> <p>Recognizes some of the environments that are different to the one he/she lives</p> <p>Understands the effect of changing seasons on the natural world around them</p> <p>Explore the natural world around him/her, making observations and drawing pictures of animals and plants (Autumn walks, discussions about seasons)</p> <p>Knows some similarities and differences between the natural world around him/ her and contrasting environments, drawing on his/her experiences and what has been read in class</p> <p>Understands some important processes and changes in the natural world around him/ her, including the seasons and changing states of matter</p> <p>To talk about why things happen and how things work</p> <p>To manipulate materials to achieve a planned effect</p>

3.2.2 KS1 and KS2

In KS1 and KS2, science is taught as part of the national curriculum. See Appendix 1, 2 and 3 for Progression of Skills Document, Progression of Knowledge Document and the Curriculum Overview.

3.3 Science planning

Teachers at Buckingham Park create engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. They use precise questioning in class to test knowledge and skills, and assess pupils regularly to identify those children with gaps in learning or misconceptions, so that all pupils keep up. Tasks and investigations are selected and designed to provide appropriate challenge to all learners.

Our teachers encourage children to use a developing scientific vocabulary as they progress through each year group. Time is spent during lessons introducing and reinforcing age-appropriate scientific vocabulary. Children are given opportunities to consolidate their use of scientific vocabulary as they move through the year groups. They are encouraged to use scientific vocabulary, both written and verbal, to explain their ideas and make sense of their observations and findings

Working scientifically skills are embedded into lessons to ensure that skills are systematically developed throughout the children's time at Buckingham Park with new vocabulary and challenging concepts introduced through direct teaching. Teachers demonstrate how to use scientific equipment to support the learning of these skills and to embed and develop scientific understanding.

Teachers have access to Knowledge Organisers which will help them to see the learning journey for that topic and any key information for them to teach.

3.4 How Science is taught at Buckingham Park

3.4.1 Teaching in Nursery and Reception

In the Early Years the children have opportunities to explore “The Natural World” on a daily basis through child-initiated play and exploration, focussed or adult led tasks and sometimes by trips and visits. Children may take part in science week, planting activities and other science or STEM experiments. There are also opportunities for children to take part in cooking or baking.

The characteristics of effective learning which are developed through science are:

Playing and exploring

- Finding out and exploring
- Using what they know in their play
- Being willing to have a go

Active Learning

- Being involved and concentrating
- Keeping on trying
- Enjoying achieving what they set out to do

Creating and thinking critically

- Having their own ideas
- Using what they already know to learn new things
- Choosing ways to do things and finding new ways

3.4.2 Teaching in KS1 and KS2

In KS1 and KS2, science is usually taught as a weekly lesson although where appropriate may be completed as a block of learning. Each unit begins with a “never heard the word” quiz where the children complete a grid to show what they already know and understand about the topic. This also provides an opportunity to revisit any previous learning and gives the teacher an insight into any areas that may require a particular focus and any misconceptions that need to be addressed.

Never-heard-the-word grid - Uses of Everyday Materials – Year 2			
Key words	Never heard	Heard – not sure of meaning	Know what means – jot down meaning or draw a picture
absorbent			
waterproof			
bent			
flexible			

The topic is “Big

teaching of each centred upon a Question”.

These can be found in the Curriculum Overview (Appendix 3). At Buckingham Park, we believe that this way of teaching science engages all of our children and gives them the opportunity to contribute whether it be by expressing the agreement or disagreement with a question or by using their prior knowledge to

start a discussion. More importantly basing learning on a big question enables children to become involved in their learning and feel that their opinion is valued.

At the end of each unit, the “never heard the word grid” and the big question are both revisited so that the children recognise how much they have learned and have the chance to further discuss and possibly change their view or opinion following the testing of these through investigation and research.

Learning is matched to the children’s relative starting points and needs with a range of differentiated individual, paired, group and whole class learning opportunities throughout the lesson. Children are challenged with open-ended investigations and encouraged to work interdependently to support each other. There is also the chance to develop and apply skills from other areas of the curriculum including Maths and English.

3.4.3 Science Week

In addition to the learning linked to the national curriculum, the whole school participates in British Science Week. This is a national programme to raise awareness, spark enthusiasm and celebrate science.

At Buckingham Park, this allows all pupils to come off-timetable and experience areas of science that may not form part of the usual school curriculum. It also gives us the opportunity to engage and involve the wider school community in particular parents who can join us to share their scientific knowledge or simply take part in activities alongside their children.

3.5 Resources

At Buckingham Park, we have a wide range of science resources including both topic specific equipment and items of a more general nature. Resources are stored in labelled cupboards in Room 5 and regularly audited and updated by the science subject leader.

3.6 The role of the subject leader

The role of the Science subject leader at Buckingham Park is to support teachers to ensure that science is taught regularly, taught well throughout the school, and that teachers aspire to excellence. This may take the form of staff training during staff meetings, mentoring, team-teaching or peer observations. As subject leader it is important to be enthusiastic about science, model good practice in the subject and to lead by example. This is supported by being a member of the British Science Association and STEM and by attending local Primary Science Network meetings.

4. IMPACT

The Buckingham Park approach to the teaching of science provides engaging, high quality learning for our children giving them the foundations for understanding the world. Our emphasis on exploring the answers to big questions through practical tasks and investigations ensures that our children not only acquire the appropriate age related knowledge linked to the science curriculum, but also the skills to equip them to progress from their starting points, and within their everyday lives.

Our children will:

- contribute to the discussion of “Big Questions” and reflect on what they have learned

- develop a wide variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills
- possess a rich vocabulary which will enable them to articulate their understanding of taught concepts
- understand how to work collaboratively to investigate and experiment
- be able to explain the process they have taken and to be able to reason scientifically

4.1 Marking

Science work is marked in line with the Buckingham Park Marking Policy. Please refer to this document for further information.

4.2 Assessment

There is no formal assessment in science. Teacher assessment is used taking into account discussions that have taken place in response to big questions and an analysis of the children's answers to the "never heard the word grids" both at the beginning and again at the end of a unit of work. Children are assessed according to the following criteria:

All children should be able to: Most children will be able to: Some children will be able to:

4.3 Monitoring

The impact of our science curriculum at Buckingham Park is measured through the school's ongoing monitoring schedule to ensure the best outcomes for our children and give them the opportunity to become excellent scientists. This may include:

- book looks
- learning walks
- discussion with class teachers
- classroom displays/working walls
- pupil voice

Monitoring is used to identify and measure whether:

- our children enjoy science
- there is a clear progression of children's work and teachers' expectations
- children's books show a range of topics and clear evidence of curriculum coverage within these
- scientific skills are taught effectively with children becoming increasingly independent, selecting tools and materials, leading investigations and choosing their own strategies for recording
- teacher feedback impacts on learning
- all children including our most vulnerable are making progress
- there are any gaps in the curriculum that may need to be addressed across the school or within individual year groups or key stages

Appendix 1 – Progression of knowledge

Progression of knowledge in science

EYFS	Year 1	Year 2
<p>Plants:</p> <ul style="list-style-type: none"> • Make observations of plants • Know some names of plants, trees and flowers • May be able to name and describe different trees, flowers and plants • Show some care for their world around them <p>Animals including Humans:</p> <ul style="list-style-type: none"> • Identify different parts of the body • Have some understanding of healthy food and the need for variety in their diets • Be able to show care and concern for living things • Know the effects exercise has on their bodies • Have some understanding of growth and change • Can talk about things they have observed including animals <p>Living Things and their Habitats:</p> <ul style="list-style-type: none"> • Comment on and ask questions about the place they live or the natural world • Show care and concern for living things in their environment • Talk about things they have observed such as plants and animals • Notice features of objects in their environment • Comment on and ask questions about their familiar world <p>Electricity:</p> <ul style="list-style-type: none"> • May have some understanding that objects need electricity to work • May understand that a switch will turn something on or off <p>Forces:</p> <ul style="list-style-type: none"> • Know about similarities and differences in relation to places, objects, materials and living things • Talk about the features of their own immediate environment and how environments might vary from one another • Make observations of animals and plants, explain why some things occur, and talk about changes <p>Seasons:</p> <ul style="list-style-type: none"> • Developing an understanding of change • Observe and explain why certain things may occur (e.g. leaves falling off trees) • Look closely at similarities and differences, patterns and change • Comments on and ask questions about the place they live or the natural world <p>Materials:</p> <ul style="list-style-type: none"> • Be able to ask questions about the place they live • Talk about why things happen and how things work • Discuss the things they have observed such as natural and found objects • Manipulate materials to achieve a planned effect 	<p>Animals Including Humans</p> <ul style="list-style-type: none"> • 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 basic parts of the human body and say which parts of the body is associated with each sense. <p>Plants</p> <ul style="list-style-type: none"> • 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. <p>Everyday Materials</p> <ul style="list-style-type: none"> • Distinguish between and 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. <p>Seasonal Changes</p> <ul style="list-style-type: none"> • Observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies. 	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> • 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 plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. <p>Plants</p> <ul style="list-style-type: none"> • 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. <p>Animals Including Humans</p> <ul style="list-style-type: none"> • 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. <p>Uses of Everyday Materials</p> <ul style="list-style-type: none"> • 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.

Year 3	Year 4	Year 5	Year 6
<p>Rocks</p> <ul style="list-style-type: none"> • 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. <p>Light</p> <ul style="list-style-type: none"> • Recognise that they need light in order to see things and that dark is the absence of light • Notice that light is reflected from surfaces • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes • Recognise that shadows are formed when the light from a light source is blocked by a solid object • Find patterns in the way that the sizes of shadows change. <p>Forces and Magnets</p> <ul style="list-style-type: none"> • Compare how things move on different surfaces • Notice that some forces need contact between two objects, but magnetic forces can act at a distance • Observe how magnets attract or repel each other and attract some materials and not others • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Describe magnets as having two poles • Predict whether two magnets will attract or repel each other, depending on which poles are facing. <p>Animals Including Humans</p> <ul style="list-style-type: none"> • 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 	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> • 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 <p>Animals Including Humans</p> <ul style="list-style-type: none"> • 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. <p>States of Matter</p> <ul style="list-style-type: none"> • 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. <p>Sound</p> <ul style="list-style-type: none"> • 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. <p>Electricity</p> <ul style="list-style-type: none"> • Identify common appliances that run on electricity 	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird <p>Describe the life process of reproduction in some plants and animals.</p> <p>Animals Including Humans</p> <ul style="list-style-type: none"> • Describe the changes as humans develop from birth to old age. <p>Properties and Changes of Materials</p> <ul style="list-style-type: none"> • 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 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. <p>Everyday Materials</p> <ul style="list-style-type: none"> • 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. 	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> • 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 <p>Animals Including Humans</p> <ul style="list-style-type: none"> • 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. <p>Evolution and Inheritance</p> <ul style="list-style-type: none"> • 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. <p>Light</p> <ul style="list-style-type: none"> • 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

<ul style="list-style-type: none"> Identify that humans and some animals have skeletons and muscles for support, protection and movement. <p>Plants</p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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. 	<p>Earth and Space</p> <ul style="list-style-type: none"> 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 	<p>Electricity</p> <ul style="list-style-type: none"> 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.
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Appendix 2 – Progression of Skills

Progression of skills in science

EYFS	Year 1	Year 2	Year 3
<ul style="list-style-type: none"> Talking about the features of their own immediate environment and how environments might vary from one another. Understanding similarities and differences in relation to places, objects, materials and living things. Talking about past and present events in their own lives and in the lives of family members. Understanding similarities and differences between themselves and others, and among families, communities and traditions. Making observations of animals and plants and explaining why some things occur and change. 	<ul style="list-style-type: none"> Asking simple questions and recognising that they can be answered in different ways Observing closely, using simple equipment and measurement Performing simple tests Identifying and classifying Using their observations and ideas to suggest answers to questions Gathering, recording and communicating data and findings to help in answering questions. Using scientific language and read and spell age-appropriate scientific vocabulary Beginning to notice patterns and relationships. 	<ul style="list-style-type: none"> Asking simple questions and recognising that they can be answered in different ways Observing closely, using simple equipment and measurement Performing simple tests Identifying and classifying Using their observations and ideas to suggest answers to questions Gathering, recording and communicating data and findings to help in answering questions. Using scientific language and read and spell age-appropriate scientific vocabulary Beginning to notice patterns and relationships. 	<ul style="list-style-type: none"> Making decisions, 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 using notes and simple tables 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, using relevant scientific language, 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, patterns, similarities or changes related to simple scientific ideas and processes Using straightforward scientific evidence to answer questions or to support their findings. Beginning to look for naturally occurring patterns and relationships Recognising when and how secondary sources might help them to answer questions that cannot be answered through practical investigations

Year 4	Year 5	Year 6
<ul style="list-style-type: none"> ● Making decisions, 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 using notes and simple tables ● 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, using relevant scientific language, 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, patterns, similarities or changes related to simple scientific ideas and processes ● Using straightforward scientific evidence to answer questions or to support their findings. ● Begin to look for naturally occurring patterns and relationships ● Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. 	<ul style="list-style-type: none"> ● Making decisions, 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 using notes and simple tables ● 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, using relevant scientific language, 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, patterns, similarities or changes related to simple scientific ideas and processes ● Using straightforward scientific evidence to answer questions or to support their findings. ● Beginning to look for naturally occurring patterns and relationships ● Recognising when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. 	<ul style="list-style-type: none"> ● 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 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. ● Exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. ● Recognising that scientific ideas change and develop over time. ● Drawing conclusions based on their data and observations, using evidence to justify their ideas, as well as their scientific knowledge and understanding to explain their findings. ● Pupils should read, spell and pronounce scientific vocabulary correctly.

Appendix 3 – Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Children in EYFS work based on the Early Years Framework. Of the 7 areas in the EYFS, the most relevant for our science teaching are: understanding the world; communication and language; and personal, social and emotional development. Children focus on discovery and their curiosity about the world looking to understand everything around them. We offer continuous provision for science in EYFS, allowing the children to access many resources daily. Furthermore, we offer enhanced provision where we encourage more specific science based, child led exploration with more selective resources.					
Year 1	Seasonal Changes What makes the weather change?					
Year 2	Plants What is a plant?	Materials What are things made of?	Animals Including Humans How do the needs of humans and animals change as they grow up?	Living Things and their Habitats How do we know that something is alive?	Animals Including Humans Are all animals the same?	Plants Is a plant alive? How do you know?
Year 3	Uses of Everyday Materials How do we choose the best material?	Magnets and Forces What forces are at work in our world?	Animals Including Humans What would happen if humans didn't have skeleton?	Animals Including Humans How can humans eat to be healthy?	Plants How are plants built to survive?	Plants How are plants built to survive?
Year 4	Rocks What are rocks and how are they created?	Electricity How does electricity work?	States of Matter Does matter, matter?	Sound Are vibrations necessary?	Living Things and their Habitats How do we groups living things?	Living Things and their Habitats How do we groups living things?
Year 5	Animals Including Humans What happens to your food when you eat it?	Earth and Space Can anybody survive in space?	Forces Are forces everywhere?	Living Things and their Habitats What happens if life cycles stop?	Animals Including Humans Does everybody get old?	Animals Including Humans Does everybody get old?
Year 6	Properties and Changes of Materials How can we properties and materials change?	Evolution and Inheritance Is the theory of evolution credible?	Electricity Does electricity play an essential role in modern life?	Light How does light travel?	Light How does light travel?	Light How does light travel?
	Living Things and their Habitats Can all animals be easily classified?	Animals Including Humans Is the circulatory system vital for the body to function?				