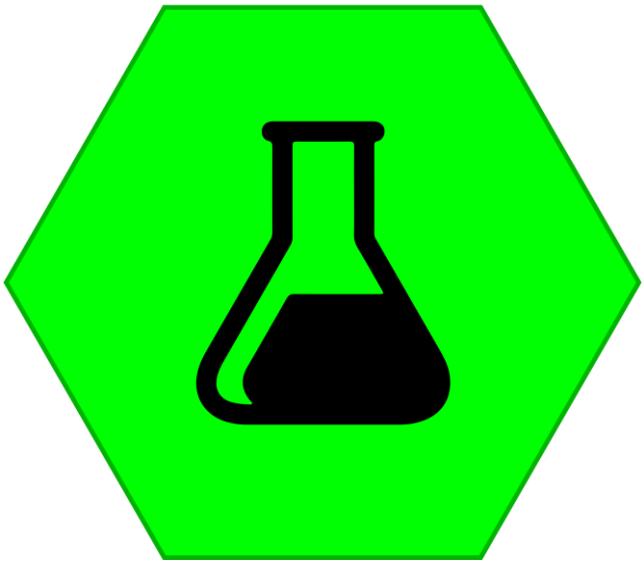
St Mary's Fields Primary School



Science

Science POLICY

Policy Date:	March 2021		**Version:** Summer Term 2021 (1) – Tom Jones – Subject Lead		
Policy Review Date	March 2023		Mrs R Dulieu (Head teacher)	R.L. Dulieu Signature	12/04/21Date
Ratified by Governing Body:					
Name: Raj Gill-Harrison			Signature		Date

1. Curriculum Intent - Science Curriculum Intent:

With a focus on child-led investigative learning, our curriculum gives pupils the scientific knowledge, skills and understanding needed to serve them in the next stage of their education. Learning is guided by the child, building upon a natural curiosity about the environment and the world around them. This curiosity should be nurtured, sustained and facilitated, allowing children to ask their own questions and find their own answers.

The Science Curriculum supports the whole school curriculum intent by delivering a curriculum that:

- Supports the acquisition of new language through the explicit teaching of vocabulary throughout the whole curriculum
- Ensures the children have the opportunity to make links within subjects, across subjects and to prior learning
- Exposes children to a broad range of memorable experiences beyond the classroom, inspiring our pupils to build a wider cultural capital and support their learning of new vocabulary
- Encourages children to know and understand the importance of and have the means to lead a healthy lifestyle that has physical and mental health at the heart of it
- Teaches children to not only have a voice, but to use it in order to enquire, challenge and communicate their ideas and opinions to problem solve and be creative
- Supports children to develop skills of enquiry, creativity, problem-solving and evaluation – EYFS enquiry based learning
- Develops children's subject specific skills in each area of the broader curriculum
- Requires children to develop skills to work collaboratively and independently in order to achieve better outcomes.
- Promotes the development of the child's key characteristics that the school feels are essential for learning and living
- Empowers our children to become independent and resilient in their learning and beyond
- Develops a thirst for knowledge and leaves the children wanting more
- Enables children to be reflective in order to recognise their own, and others, strengths and characteristics to develop
- Motivates children to have high aspirations for their futures in learning, work and in wider life.

2. Organisation and planning - Implementation of the Science

Lessons are designed to ensure full coverage of the expectations set out in the Early Adopters EYFS Curriculum Framework and the National Curriculum and offer the opportunity for both knowledge and skills progression. 'Working scientifically' skills are put at the heart of planning and lesson delivery in science. Where possible, children should 'find out for themselves' through independent or guided investigative work. Links should be highlighted and made, where children increasingly connect skills and *knowledge* through the primary years. Where the planning, recording and evaluation of results are equally as important as practical work in science, students should take pride in their written work and see the value in the writing process. Pupils should have a voice, and where appropriate should increasingly contribute towards the planning and method setting stages of investigations. Scaffolded at first, these stabilisers should be gradually pulled away through the primary years to promote independent thinking.

The knowledge and skills progression maps for Science (Appendix A and B) is organised to ensure it is delivered in the manner it is intended and demonstrates that it considers:

- The 3D curriculum and how the skills and knowledge are designed, delivered and sequenced - statements align as closely as possible to allow a clear view of progression.
- Impact at the planning stage – categories represent key areas of planning that a science teacher will consider when writing a single or unit of science lessons. For example, categories such as 'Setting up enquiries', 'Observing over time' and 'Testing and Gathering data' are directly relatable to elements of a science lesson. Key 'working scientifically' skills can therefore be identified, and attached to appropriate planning.
- How the curriculum suits the local needs – use of schools grounds to enhance investigative and enquiry skills, and enrich children's experiences (evidenced through knowledge organisers).
- That the children have access to high quality resources, tools and well stocked materials to enable effective curriculum delivery.

3. Legislation and guidance

This policy reflects the requirements of the National Curriculum programmes of study, which all maintained schools in England must teach.

It also reflects requirements for inclusion and equality as set out in the Special Educational Needs and Disability Code of Practice 2014 and Equality Act 2010, and refers to curriculum-related expectations of governing boards set out in the Department for Education's Governance Handbook.

In addition, this policy acknowledges the requirements for promoting the learning and development of children set out in the Early Years Foundation Stage 2020 – Early Adopters - framework.

4. Roles and responsibilities

4.1 The governing board

The governing board will monitor the effectiveness of this policy and hold the head teacher to account for its implementation. The governing board will also ensure that:

- A robust framework is in place for setting curriculum priorities and aspirational targets
- Enough teaching time is provided for pupils to cover the National Curriculum and other statutory requirements
- It fulfils its role in processes to disapply pupils from all or part of the National Curriculum, where appropriate, and in any subsequent appeals.

4.2 Head teacher

The head teacher is responsible for ensuring that this policy is adhered to, and that:

- All required elements of the curriculum, and those subjects which the school chooses to offer, have aims and objectives which reflect the aims of the school and indicate how the needs of individual pupils will be met
- The amount of time provided for teaching the required elements of the curriculum is adequate and is reviewed by the governing board
- Where appropriate, the individual needs of some pupils are met by permanent or temporary disapplication from all or part of the National Curriculum
- They manage requests to withdraw children from curriculum subjects, where appropriate
- The school's procedures for assessment meet all legal requirements
- The governing board is fully involved in decision-making processes that relate to the breadth and balance of the curriculum
- The governing board is advised on whole-school targets in order to make informed decisions
- Proper provision is in place for pupils with different abilities and needs, including children with SEN

4.3 Subject Leaders

Subject Leaders will ensure that their curriculum subject is implemented in accordance with this policy.

5. Inclusion

Teachers set high expectations for all pupils. They will use appropriate assessment to set ambitious targets and plan challenging work for all groups, including:

- More able pupils
- Pupils with low prior attainment
- Pupils from disadvantaged backgrounds
- Pupils with SEN
- Pupils with English as an additional language (EAL)

Teachers will plan lessons so that pupils with SEN and/or disabilities can study every National Curriculum subject, wherever possible, and ensure that there are no barriers to every pupil achieving.

Teachers will also take account of the needs of pupils whose first language is not English. Lessons will be planned so that teaching opportunities help pupils to develop their English, and to support pupils to take part in all subjects.

6. Subject Monitoring arrangements

Governors monitor coverage of National Curriculum subjects and compliance with other statutory requirements through:

- Governors monitor whether the school is complying with its funding agreement and teaching a "broad and balanced curriculum" which includes the required subjects, through planned Governor Visits, reading the end of year Governor's Reports and Subject Action Plans and looking at subject data and outcomes.

- Subject Leaders monitor the way their subject is taught throughout the school by: planning scrutiny – looking at Knowledge Organisers – considering the coverage, taught knowledge, skills & vocabulary. Learning walks – which monitor the quality of teaching, ensuring this reflects the intent for the subject. The monitoring of work and outcomes – looking at the impact evidence - through the work in books, through photographs of children working scientifically, etc. Staff & pupil interviews to get the teachers and children's opinions, which support measuring the impact.
- Subject Leaders also have responsibility for monitoring the way in which resources are stored and managed and are responsible for the ordering of new resources and managing the associated budget.
- The Head Teacher and the Subject Leader will review this policy every two years. At every review, the policy will be shared with the governing board.

7. Links with other policies

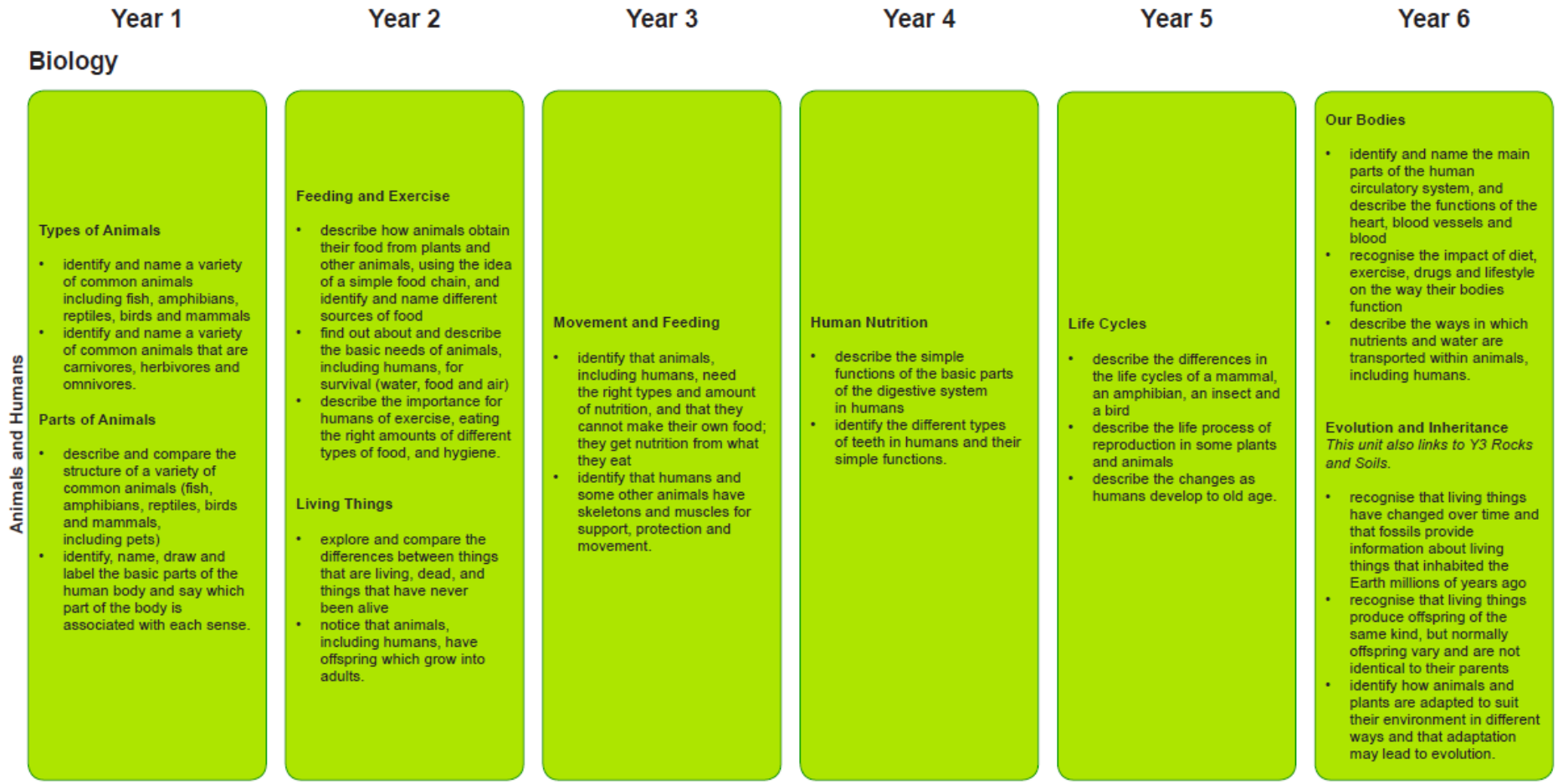
This policy links to the following policies and procedures: The Assessment Policy & the Teaching & Learning Policy.

Appendix A = Knowledge Progression Map

Appendix B = Working Scientifically Skills Progression Map

Appendix C = Vocabulary Progression Map

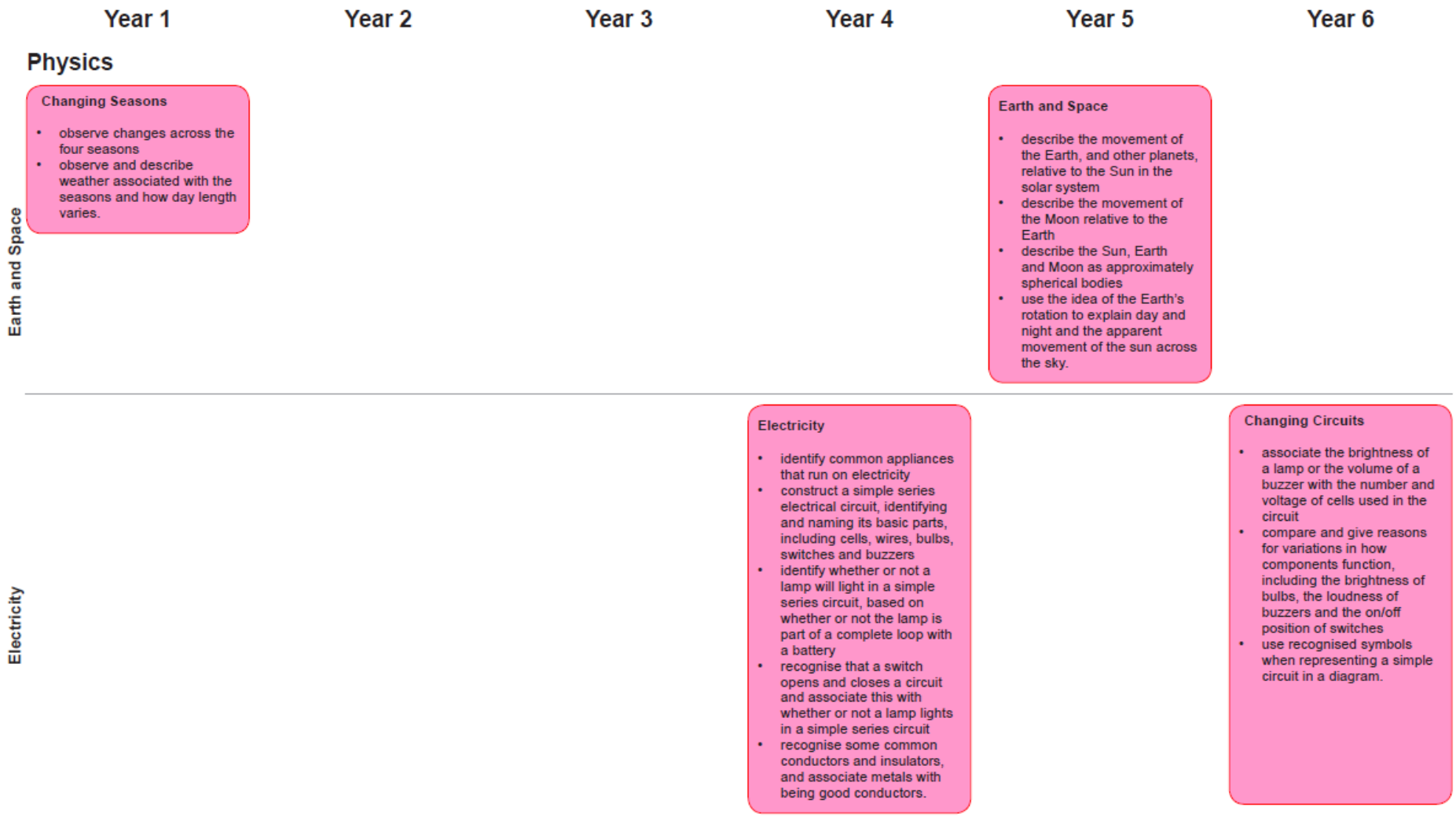
Appendix A – Knowledge Progression Map



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Living Things		**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 • identify and name a variety of plants and animals in their habitats, including micro-habitats.		**Grouping Living Things** • 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. **Dangers to Living Things** • recognise that environments can change and that this can sometimes pose dangers to living things • construct and interpret a variety of food chains, identifying producers, predators and prey.		**Classifying Living Things** • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro–organisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics.
Plants	**Plants** • identify and name a variety of common wild and gardenplants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees.	**Growing 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.	**What Plants Need** • 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. **Parts of Plants** *This unit also links to Y5 Life Cycles.* • identify and describe the functions of different parts of flowering plants: roots, stem/ trunk, leaves and flowers • 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.			

Chemistry

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Materials and Changes of State	**Comparing Materials** • 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. **Identifying 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.	**Changing Shape** • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. **Uses of Materials** • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.		**Changes of State** • 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.	**Separating Mixtures** *Best taught before Y5 Types of Change.* • 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. **Types of Change** • 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. **Materials** • 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 • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	
Rocks and Soils			**Rocks and Soils** *This unit also links to Y6 Evolution and Inheritance.* • 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.			


Year 1
Year 2
Year 3
Year 4
Year 5
Year 6
Physics
Earth and Space
Changing Seasons
observe changes across the four seasons
observe and describe weather associated with the seasons and how day length varies.
Earth and Space
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.
Electricity
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
recognise some common conductors and insulators, and associate metals with being good conductors.
Changing Circuits
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.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Light			**Light and Shadows** • 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.			**Light and Sight** • 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.
Forces			**Magnets and Forces** • 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.		**Forces** • 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.	

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Sound				**Sound** • 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.		

Appendix B Science Skills Progression Map

Rationale

This document has been produced in conjunction with the National Curriculum (DfE, 2013) and Development Matters in the Early Years Foundation Stage (BAECE, 2012).

Statements have been taken directly from the above documents, and have been categorised to coordinate specifically with the detail in the 'nature, processes and methods of science' section of the science curriculum.

Areas in grey indicate a 'non-statutory' element of the curriculum. Their inclusion allows a coherent, fluid transition between year groups, and thus ensures transparent and coherent progression throughout. Care has been taken to ensure that statements align as closely as possible to allow a clear view of progression. Consideration has been offered towards impact throughout – categories represent key areas of planning that a science teacher will consider when writing a single or unit of science lessons. For example, categories such as 'Setting up enquiries', 'Observing over time' and 'Testing and Gathering data' are directly relatable to elements of a science lesson. Key 'working scientifically' skills can therefore be identified, and attached to appropriate planning.

Where Ofsted (2011) identified ways in which primary schools can improve teaching standards from 'satisfactory' to 'outstanding' in science, it was highlighted that 'the most important focus for schools is to ensure that pupils are engaged and challenged by their work in science, particularly in scientific investigation and how science works'. Where a lack of understanding in 'working scientifically' progression may exist across primary schools in England, this document represents an important tool in raising this understanding, and identifying patterns in progression across the years at St Mary's.

References

Development Matters in the Early Years Foundation Stage (EYFS) (BAECE, 2012). *British Association for Early Childhood Education.* https://www.early-education.org.uk/sites/default/files/Development%20Matters%20in%20the%20Early%20Years%20Foundation%20Stage%20-%20FINAL.pdf
The National Curriculum in England (DfE, 2013)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/425601/PRIMARY_national_curriculum.pdf
Successful science, an evaluation of science education in England 2007-2010 (Ofsted, 2011). https://dera.ioe.ac.uk/2148/1/Successful%20science.pdf

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Questioning	Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world.	Ask simple questions about the world around us. Begin to recognise that they can be answered in different ways.	Ask questions about the world around us. Recognise that they can be answered in different ways	Ask some relevant questions and use different types of scientific enquiries to answer them.	Ask relevant questions and use different types of scientific enquiries to answer them.	Begin to explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically	Explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically.
Setting up enquiries	Selects appropriate resources and adapts work where necessary.	Begin to recognise ways in which they might answer scientific questions	Begin to recognise ways in which they might answer scientific questions	Begin to set up simple practical enquiries, comparative and fair tests Begin to make some decisions about which types of enquiry will be the best way of answering questions Begin to recognise when a simple fair test is necessary and help to decide how to set it up Begin to help make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used	Set up simple practical enquiries, comparative and fair tests Make some decisions about which types of enquiry will be the best way of answering questions. Recognise when a simple fair test is necessary and help to decide how to set it up Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used	Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why Begin to make their own decisions about what observations to make, what measurements to use and how long to make them for,	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why Make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them;

						and whether to repeat them; choose the most appropriate equipment to make measurements and explain how to use it accurately.	choose the most appropriate equipment to make measurements and explain how to use it accurately.
Observing over time	Talk about some of the things they have observed such as plants, animals, natural and found objects Make observations of animals and plants	Begin to observe closely, using simple equipment.	Observe closely, using simple equipment.	Begin to make systematic and careful observations	Make systematic and careful observations	Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.
Pattern Seeking	Look closely at similarities, differences, patterns and change	With guidance, begin to notice patterns and relationships	With guidance, begin to notice patterns and relationships	Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them	Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them	Begin to identify patterns that might be found in the natural environment.	Identify patterns that might be found in the natural environment.
Identifying, classifying and grouping	Know about similarities and differences in relation to places, objects, materials and living things	Identify and classify with some support To begin to observe and identify, compare and describe.	Identify and classify Observe and identify, compare and describe. Use simple features to	Begin to identify differences, similarities or changes related to simple scientific ideas and processes. Begin to talk about	Identify differences, similarities or changes related to simple scientific ideas and processes. Talk about criteria	Begin to use and develop keys and other information records to identify, classify and describe living things and materials	Use and develop keys and other information records to identify, classify and describe living things and materials

		Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them	compare objects, materials and living things and, with help, decide how to sort and group them	criteria for grouping, sorting and classifying; and use simple keys	for grouping, sorting and classifying; and use simple keys		
Researching using secondary sources	Selects appropriate resources and adapts work where necessary.	To begin to use simple secondary sources to find answers	Use simple secondary sources to find answers.	Begin to recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations	Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations	Begin to recognise which secondary sources will be most useful to research their ideas	Recognise which secondary sources will be most useful to research their ideas
Testing and Gathering Data	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Perform simple tests with support. Gather and record data with some adult support, to help in answering questions Experience different types of scientific enquiries, including practical activities Use simple measurements and equipment (for example, hand lenses, egg timers) to gather data,	Perform simple tests. Gather and record data to help in answering questions Experience different types of scientific enquiries, including practical activities Use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, carry out simple	Begin to take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Participate in a range of scientific experiences to enable them to raise their own questions about the world around them Learn how to use new equipment,	Take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Participate in a range of scientific experiences to enable them to raise their own questions about the world around them Learn how to use new equipment, such as data	Take measurements, using an increasing range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Begin to decide how to record data from a choice of familiar approaches	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Decide how to record data from a choice of familiar approaches

		carry out simple tests	tests	such as data loggers, appropriately	loggers, appropriately		
Analysing and Presenting Data	Talk about why things happen and how things work. Explain why some things occur, and talk about changes.	Begin to use their observations and ideas to suggest answers to questions Talk about what they have found out and how they found it out. With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.	Use their observations and ideas to suggest answers to questions Talk about what they have found out and how they found it out. With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.	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	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	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 a 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	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 a 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

				straightforward scientific evidence to answer questions or to support their findings. Collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have	straightforward scientific evidence to answer questions or to support their findings. Collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have	Look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Use their results to identify when further tests and observations might be needed	Look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Use their results to identify when further tests and observations might be needed

				collected, and finding ways of improving what they have already done.	collected, and finding ways of improving what they have already done.		
Vocabulary	Use talk to organise, sequence and clarify thinking, ideas, feelings and events	Begin to use simple scientific language Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.	Begin to use simple scientific language Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.	Begin to use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences Read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.	Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences Read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time Read, spell and pronounce scientific vocabulary correctly	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time Read, spell and pronounce scientific vocabulary correctly

Appendix C Vocabulary Progression Map

Science Curriculum Key Vocabulary Progression Chart

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically question, answer, observe, observing, equipment, identify, sort, group, compare, differences, similarities, describe, measurements, test, results, secondary sources **record** – diagram, chart		Working Scientifically oral and written explanations, conclusion, predictions, criteria, classify, changes, data, contrast, evidence, improve, secondary sources, guides, keys, construct, interpret **research** – relevant question **equipment** – thermometer, **data** – gather, standard units, record, classify, present **record** – drawings, labelled diagrams, keys, bar charts, tables		Working Scientifically plan, variables, measurements, accuracy, precision, repeat readings, predictions, further comparative and fair test, identify, classify and describe, patterns, systematic, quantitative measurements **report data** – scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph and line graphs **report and present** – conclusions, casual relationships, explanations, degree of trust, oral and written display and presentation **evidence** – support, refute, ideas or arguments biology, physics, chemistry	
Animals including humans amphibians, fish, reptiles, mammals, birds (+ 1 example of each) herbivore, omnivore, carnivore head, nose, ear, neck, shoulder, arm, elbow, wrist, hand, back, chest, hip, leg, knee, ankle, foot wing, beak, tail, fin sight, smell, touch, taste, hearing	Animals including humans survival, water, air, food reproduce, adult, baby, offspring, kitten, calf, puppy food chain, prey, predator, camouflage, protection exercise, hygiene, balanced diet	Animals including humans skeleton, skull, bones, muscles, movement, support, protection, nutrition	Animals including humans mouth, tongue, teeth, oseophagus, stomach, small intestine, large intestine, nutrients, absorb, canine, incisor, molar producer, consumer, apex predator	Animals including humans womb, foetus, embryo, gestation, baby, toddler, teenager, elderly growth, development, puberty	Animals including humans function, circulatory system, heart, valve, blood vessel, vein, artery transport, oxygenated, deoxygenated lifestyle, drug
Plants deciduous, evergreen, tree, leaf, flower (blossom), petals, fruit, bulb, seed, roots, stem, trunk, branches	Plants growth, germinate, light, temperature reproduce, lifecycle	Plants air, water, transportation, nutrients, soil, reproduction, seed formation, seed dispersal, pollination	Living things & their habitats vertebrates, invertebrates (+ 1 example of each) environment, habitat, classification key	Living things & their habitats life process, reproduction, offspring,	Living things & their habitats characteristic, classification, organism, micro-organism
Everyday materials wood, plastic, glass, paper, metal, rock	Everyday materials and their uses brick, fabric, elastic, foil	Rocks soils, organic matter, fossil, crystal	States of matter solid, liquid, gas, evaporation, condensation, particle,	Properties and changes to materials	Evolution & Inheritance adaptation, evolution, characteristic,

hard, soft, rough, smooth, shiny, dull, bendy, stiff	property, solid, waterproof, absorbent, opaque, transparent, squash, bend, flexible, twist, stretch push, pull, roll, slide, bounce	sandstone, granite, marble, pumice absorbent, crumble sedimentary, layer, sediment igneous, magma, lava, gas bubbles (tiny holes/spaces) metamorphic, change, squeeze, pressure	temperature, freezing, heating	hardness, transparency, conductivity (electrical, thermal) solubility, solution dissolve, filter, evaporate, sieve, reversible, irreversible	reproduction, genetics, survival
Seasonal change season, spring, summer, autumn, winter, month, year, day, night, sun, moon, light, dark	Living things & their habitats living, dead, habitat, microhabitat, woodland, meadow, hedgerow, pond	Light light source, mirror, reflect, reflective, reflection shadow, blocked transparent, translucent, opaque	Sound vibration, wave, volume, pitch, tone, insulation	Earth & Space Earth, sun, moon, solar system, axis of rotation, day, night, phases of the moon, star, constellation	Light refraction, reflection, spectrum, rainbow
		Forces & magnets force, contact, surface, magnetic, attract, repel, poles	Electricity appliance, battery power, main power, circuit, series, cell, battery, wire, bulb, switch, break in circuit conductor, insulator	Forces air resistance, water resistance, friction, gravity lever, gear, pulley, Newtons	Electricity circuit - series, parallel voltage, volts, amps