Stamford Park Primary School – Progression in Working Scientifically

Asking questions and recognising that they can be answered in different ways						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Question why things happen Ask questions about their familiar environments and the natural world Answer questions about their experiences (how and why)	Ask simple questions following observations and exploration Use simple secondary sources to find answers Begin to recognise the different ways questions can be answered	Ask own simple questions about what they notice from the world around them Use secondary sources to find answers to their own questions Recognise, discuss and suggest ways to answer different questions	Ask relevant questions about the world around them Use observations and experiences to form relevant questions Begin to decide which types of enquiry would be useful to answer questions Be guided towards identifying new questions arising from enquires	Form questions about observations from the world around Decide an enquiry type that would be best to provide answers Use secondary sources to answer questions which cannot be answered through practical enquiry Use findings to raise further questions and suggest ways these could be answered	Use existing knowledge and experience to ask a variety of questions Choose and plan an appropriate enquiry to answer a question Recognise which secondary sources will be most useful to research ideas Begin to separate opinion from fact Use findings to suggest new questions and how these could be answered	Observe and raise a variety of questions to explain both familiar and unfamiliar ideas Choose, plan and report different enquiries, using results to explore further questions Identify useful secondary sources and separate opinion from fact Question scientific ideas and arguments, raising questions to support or refute these

Making observations and taking measurements						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Observe and explore the world around through play and senses Show curiosity around objects, events and people Make simple observations of animals, plants and vehicles Choose resources for an activity Make links and notice patterns in their experiences	Observe and explore the world around Observe closely using simple equipment Guided to observe changes over time Use simple measurements and equipment to gather data Guided to begin noticing patterns and relationships	Observe and explore the world around both natural and human Observe changes over time Use simple measurements and equipment to gather data and carry out simple enquiries Identify patterns and relationships within data	Observe and explore the world around and broaden their scientific view Take accurate measurements in standard units using a range of familiar equipment Begin to look for naturally occurring patterns and relationships	Make systematic and careful observations Help to make decisions about what observations are needed, how long to observe for and what equipment could be used	Observe scientific phenomena and ideas Make decisions about what observations to make Make decisions about which measurements to use and for how long Look for different casual relationships in their data and identify evidence that refutes or supports their ideas	Make observations of scientific functions, relationships and interactions more systematically Take different measurements using a range of scientific equipment with increased accuracy Consider when to take repeated measurements and explain why Identify, discuss different casual relationships in data Identify scientific evidence that has been used to

						support or refute ideas
Plan and set up different types of enquires						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Begin taking risks and engaging in new experiences Learn by trial and error through playing and exploring Begin practical problem solving Begin finding new ways to do things	Begin to notice different ways in which they might answer scientific questions Experience different types of scientific enquires	Suggest ways in which they could find answers to a question Decide on an appropriate enquiry to use	Start to make their own decisions about appropriate type of scientific enquiry Suggest alternatives and give reasons for choices With help, plan and set up an enquiry	Decide the type of enquiry that would be best to answer a question and suggest reasons for their choice Plan and set up a scientific enquiry with some support	Select and plan the most appropriate type of scientific enquiry Plan and set up an enquiry Recognise that there are variables which may or may not be controlled	Identify, plan and set up different scientific enquiries to answer questions Recognise and control variables within an enquiry
Identifying and classifying						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Know about similarities and differences in relation to places, objects, materials and living things Begin to develop ideas of grouping,	Use simple features to compare objects, materials and living things With help, decide how to sort and group	With support, use simple features to identify, compare and contrast objects, materials and living things	Identify and classify objects, materials and living things according to characteristics	Discuss and explain criteria for grouping, sorting and classifying objects, materials and living things based on characteristics	Use classification keys to identify and group objects, materials and living things according to their characteristics	Use and develop keys and other information records to identify, classify and describe living things and materials

sequences and cause and effect		Describe how and why they have grouped them	Talk about the criteria used for grouping With support use and create simple keys	Use simple keys to identify and classify a variety of objects, materials and living things in their environment Suggest different ways in which things could be identified and grouped according to their characteristics or properties	Give reasons for classifying plants and animals based on characteristics Develop simple classification keys Discuss and reason why living things are placed in one group and not another	Explain how keys enable scientists to identify patterns in the natural environment Explore the system of classification of all living things and how broad groupings can be sub-divided
Performing tests						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Choose resources which could be used for a chosen activity	Carry out simple tests, with support, using simple equipment	Carry out simple tests using simple equipment	Perform simple practical enquiries, including comparative and fair test	Set up and perform practical enquires Recognise when a simple fair test is necessary and how to set it up	Recognise when and how to set up and perform practical comparative and fair tests to aid scientific enquiries Set up and perform a range of practical tests	Set up and perform different practical tests with variables and constants Explain which variables need controlling and why

					using suitable equipment Explain and identify the difference between fair and comparative tests	Suggest the most suitable way to perform a test Identify when a test needs to be repeated and give an explanation why
Gathering and recording data						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Create simple representations of events, people and objects Draw pictures with simple labels to record findings	Communicate findings from enquires with guidance Show findings in a variety of ways; drawing, tables, charts, display and short sentence	Record simple data and observations gathered from enquires with increasing accuracy in a variety of ways Begin to suggest ways to record data	Record using simple scientific language, drawing, labelled diagrams, keys, tables and charts Use oral and short written explanation when recording findings	With guidance, make decisions about how to collect and report data Compare recording with similar models and images Record data with increased accuracy and scientific vocabulary	Record data and results of increasing complexity with guidance Use scientific diagrams, labels, classification keys, tables, scatter graphs, bar, line graphs	Look for different causal relationships in their data and identify evidence that refutes or supports their ideas Decide how to record data and results from a choice of familiar approaches Provide reasoned justification for their choices

Use equipment						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Handle tools and equipment effectively and safely	Use simple equipment to carry out simple tests and gather data	Use an increased range of simple equipment to perform and gather data	Learn how to use new equipment to perform a range of tests and gather data Read and use standard units when measuring with equipment	Take accurate measurements using standard units Suggest the most appropriate equipment to use	Choose the most appropriate equipment to use Take accurate measurements Take repeat measurements where appropriate	Use a variety of equipment with precision and accuracy to gather data Read a range of standard units of measure Explain how and why to use different equipment
Reporting, presenting and communicating data						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Develop own narratives and explanations by connecting ideas and events Speaking – build up vocabulary that reflects experiences and understanding	Use their own observations and ideas to suggest answers to questions Begin to use simple scientific language to talk about findings	With some guidance, record and communicate findings in a range of different ways Use simple scientific language	Use relevant simple scientific language to discuss ideas and communicate findings With guidance, present ideas using oral and written	Use mostly accurate and relevant scientific language when communicating findings Present findings in a range of ways	Use relevant scientific language and illustrations to discuss, communicate and justify ideas Use oral and written forms, display and other	Use relevant and accurate scientific language and illustrations when communicating Decide which form of presentation to use when reporting and

Answer how and why questions about their experiences Talk about their observations	With guidance, communicate their ideas and understanding in a variety of ways	Describe practical first-hand experiences and ideas With guidance, ask questions to explore scientific ideas	explanations, displays or presentations of results and conclusions With guidance, identify new questions arising from their data and experiences	Identify new questions and make predictions for new values within or beyond data collected	presentations to report conclusions Report on causal relationships and explanations of degrees of trust in findings Use results to make predictions and identify when further observations, comparative and fair tests might be needed	explain their choice Make key links between topics and reference the work of scientists and scientific research in their communication