St. George's Junior School			
By the end of Year 3	**By the end of Year 4**	**By the end of Year 5**	**By the end of Year 6**
Questioning, Enquiring and Planning			
Ask some relevant questions and use different types of scientific enquiries to answer them. Begin to explore everyday phenomena and the relationships between living things and familiar environments. Begin to develop their ideas about functions, relationships and interactions. Begin to raise their own questions about the world around them. Begin to make some decisions about which types of enquiry will be the best way of answering questions	Ask relevant questions and use different types of scientific enquiries to answer them. Explore everyday phenomena and the relationships between living things and familiar environments. Develop their ideas about functions, relationships and interactions. Raise their own questions about the world around them. Make some decisions about which types of enquiry will be the best way of answering questions.	Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Begin to explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically. Begin to recognise some more abstract ideas and begin to recognise how these ideas help them to understand how the world operates. Begin to recognise scientific ideas change and scientific ideas change and develop over time. Begin to select the most appropriate ways to answer science questions using different types of scientific enquiry	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically. Recognise some more abstract ideas and begin to recognise how these ideas help them to understand how the world operates Begin to recognise scientific ideas change and develop over time. Select the most appropriate ways to answer science questions using different types of scientific enquiry.
Investigating, recording, reporting findings, drawing conclusions			
Begin to recognise when a simple fair test is necessary and help to decide to set up some simple practical enquiries, comparative and fair tests, identifying at least one variable. Gather, record, classify and present data in a variety of ways to help in answering questions, using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.	Recognise when a simple fair test is necessary and set up simple practical enquiries, comparative and fair tests, including more than one variable. Use notes, simple tables and standard units and help to decide how to record and analyse their data and record results in tables, bar charts and line graphs.	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 record data and results of increasing complexity using scientific diagrams and labels simple models, classification keys, tables and bar and line graphs. Begin to suggest improvements to my method and give reasons.	Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Record data and results of increasing complexity using scientific diagrams and labels, models, classification keys, tables and bar graphs and pie charts Suggest improvements to my method and give reasons.

Begin to look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. Begin to report findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Begin to use straightforward scientific evidence to answer questions or to support their findings. Begin to say what I found out, linking cause and effect. Begin to identify new questions arising from the data, make new predictions and find ways of improving what they have already done. Begin to answer factual questions from what I have found out.	Look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use straightforward scientific evidence to answer questions or to support their findings. Say what I found out, linking cause and effect. Identify new questions arising from the data, make new predictions and find ways of improving what they have already done. Answer factual questions from what I have found out.	Begin to use test results to make predictions to set up further comparative and fair tests. Begin to report and present 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. Begin to identify scientific evidence that has been used to support or refute ideas or arguments. Begin to draw conclusions based on their data and observations, use evidence to justify their ideas, use scientific knowledge and understanding to explain their findings. Begin to look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Begin to use test results to make predictions to set up further comparatives and fair tests. Begin to separate opinion from fact.	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 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. Draw conclusions based on their data and observations, use evidence to justify their ideas, use scientific knowledge and understanding to explain their findings. 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 are needed. Separate opinion from fact.
Identifying, grouping and classifying			
Begin to identify differences, similarities or changes related to simple scientific ideas and processes. Begin to talk about criteria for grouping, sorting and classifying. Begin to compare and group according to behaviour or properties, based on testing.	Identify differences, similarities or changes related to simple scientific ideas and processes. Talk about criteria for grouping, sorting and classifying and use simple keys. Compare and group according to behaviour or properties, based on testing.	Begin to use and develop keys and other information records to identify, classify and describe living things and materials.	Use and develop Linneaus keys and other information records to identify, classify and describe living things and materials.

Observing, measuring and pattern seeking			
Begin to make systematic and careful observations and, where appropriate, take accurate measurements using standard units (cm, ml, pH), using a range of equipment, including, rulers, measuring cylinders and pH paper Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. 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. Learn to use some new equipment appropriately and choose which to use. Begin to see a pattern in my results. Begin to observe and measure accurately using standard units including length and capacity in centimetres and millilitres	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units (degrees Celsius, ml, dB), using a range of equipment, including thermometers, a rainfall gauge and decibel meters Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. 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. Learn to use new equipment appropriately and precisely and choose which to use. See a pattern in my results. Observe and measure accurately using standard units including temperature in degrees Celsius	Begin to take measurements (degrees Celsius, ml, seconds), using a range of scientific equipment (thermometer, measuring cylinder, stopwatch), with increasing accuracy and precision, taking repeat readings where appropriate. Begin to identify patterns that might be found in the natural environment. Begin to 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. Choose the most appropriate equipment and explain how to use it accurately. Begin to interpret data and find patterns. Make a set of observations and say what the interval and range are. Begin to take accurate and precise measurements – mm, cm, mins, seconds Graphs – line	Take measurements (Newtons, seconds, area, cm, bpm), using a range of scientific equipment (Newton meters, stopwatch, rulers), with increasing accuracy and precision, taking repeat readings where appropriate. Identify patterns that might be found in the natural environment. 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. Choose the most appropriate equipment and explain how to use it accurately. Interpret data and find patterns. Make a set of observations and say what the interval and range are. Make accurate and precise measurements – N, g, mm, cm, mins, seconds, cm^2 Graphs – pie, bar
Research			
Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations	Begin to recognise when and how secondary sources might help 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 my ideas.
Vocabulary			
Enquiry (fair test, pattern seeking, observing over time, research, classifying) variables prediction results data		accuracy and precision mean average bar graph line graph pie chart	

table	causal relationship
chart	degree of trust
bar chart	anomaly
standard units	dependent variable
accurate	independent variable
key	control
primary sources	justify
secondary sources	refute
classify	Linnaeus
conclusion	
diagram	
evaluate	
evidence	
explanation	
observations	
questioning	
models	