Shirley Schools Science Progression

In our Shirley Schools, we believe that Science is a process of **exploration**, of **finding out more** about the world in which we live and of **making sense** of it in a logical coherent way. Science involves the **development** of **skills, knowledge, concepts** and **attitudes**. The Shirley Schools recognise that children live in an age of fast-moving science and we believe that this area of learning is fundamental to **exploring, understanding** and **influencing** the world in which we live. We offer our children a wealth of **experiences** and develop **ideas** that encourage their **natural curiosity and creativity, inspiring awe and wonder**. Our children gain their scientific knowledge through a mixture of explicit Science sessions and working scientifically across the curriculum. Science in the Shirley Schools supports the development and advances in **technology** and we learn how these lead to new scientific discoveries which shape how we live **safe and healthy lives** in our changing world.

Alongside the subject knowledge, all Shirley scientists will develop a set of scientific enquiry skills and be given many opportunities to independently use them in their scientific explorations. By the time they leave us at the end of Year 6, a Shirley Scientist will be able to:

- ask their own Scientific questions
- analyse their results systematically
- create their own experiments to test their theories, paying close attention to ensuring it is a fair test
- draw conclusions and use evidence to present their results in a suitable format

Skill	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Predicting	say what they think what might happen	think about what might happen before deciding what to do predict what might happen based on personal experiences	make a simple prediction about what will happen in an investigation with a good reason	Make a prediction using because based on what I will be able to observe during the experiment.	Make a prediction using because and accurate scientific evidence learned from the topic.	Make a prediction using because and accurate scientific evidence learned from current and previous topics.	Make a prediction using because and accurate scientific evidence. I will also be able to use my knowledge to predict something that will not happen, supporting it with previously learnt science.
Investigating	make suggestions about what to do carry out given instructions show an awareness of treating things in the same way make own suggestions about how to find the answer talk about how they will find the answer	make their own suggestions about how to find things out suggest how to collect evidence to answer questions and begin to appreciate why this is important talk about what they want to find out talk about how they will find the answer plan what they want to do and record show an awareness of fair testing use simple tests to find	suggest own ideas for an investigation sequence ideas in a sensible order talk about what information they need to gather	undertake an experiment keeping everything the same apart from what I am investigating.	create a control within my experiment to ensure a fair test, whilst testing one thing.	create a fair test and test with more than one variable.	independently create a fair test, explaining which variables need to be controlled and why.

		information recognise hazards					
Recording and reporting	speech drawings labelled pictures lists teacher models recording in a table	talk about what they have seen/done labelled drawings drawings lists pictograms use a 2 column table to record results use measurements in tables with support	make own simple table of results use measurements in tables labelled drawings lists transfer information from a table to a bar chart explanation statements	use standard measurement to observe changes and record it. create simple scientific diagrams with labeling. use a bar graph to record my results.	accurately use standard measurements to record a series of observations. create scientific diagrams with appropriate scientific labeling. record data onto a line graph with given intervals.	take accurate measurements, beginning to repeat them to support with precision. begin to identify anomalies in my results. select appropriate intervals for lines and bar graphs.	take accurate and precise measurements, repeating them when needed. recognise anomalies in my measurements. choose how to best represent my results according to the type of data (e.g continuous or discrete).
Conclusions	describe and show what they did say what happened respond to questions from the adult	make comparisons between their results and observations rank results in order say if their prediction about what might happen was correct compare what did happen with what they thought would happen and give a simple reason suggest how an investigation could be improved with support	explain what they have found out give a cause and effect explanation begin to identity simple patterns explain why their prediction was/wasn't correct compare what did happen with what they thought would happen and give an explanation suggest how the investigation could be improved	explain simple patterns in my results.	use scientific knowledge to explain the patterns.	explain causal relationships from my results. begin to comment on the reliability of my results.	use scientific ideas to explain my results, accounting for any anomalies refute or agree with scientific arguments using evidence.
Evaluating				explain why keeping everything the same has made my results accurate	beginning to describe how accurate my results are, comparing them to the control. can discuss other factors that could be controlled next time.	evaluate the accuracy of my results based on my fair testing. can make practical suggestions about how my working methods can be improved.	evaluate the accuracy of my results. can make reasoned suggestions on how to improve working methods.