Year 6 Working scientifically

Prior and future learning

Prior Knowledge…	What's next?
• With support, can answer questions using evidence gathered from different types of scientific enquiry. • With prompting, identifies and manages variables. • Following discussion of alternatives, selects appropriate equipment. • Take measurements that are precise as well as accurate. • Know how to process repeat readings. • Start to use labelled diagrams to show more complex outcomes. • With prompting, use various ways to record complex evidence. • Use a line graph to record basic data. • With prompting, write a conclusion using evidence and identifying causal links. • With support, display and present key findings from enquiries orally and in writing. • With support, indicate why some results may not be entirely trustworthy, e.g. when timing falling objects. • Show how evidence supports a conclusion. • Suggest further relevant comparative or fair tests.	• Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience. • Understand that scientific methods and theories develop as earlier explanations are changed to take account of new evidence and ideas, together with the importance of publishing results and peer review. • Select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate. • Make predictions using scientific knowledge and understanding. • Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety. • Evaluate the reliability of methods and suggest possible improvements. • Evaluate risks. • Apply mathematical concepts and calculate results. • Make and record observations and measurements using a range of methods for different investigations. • Present observations and data using appropriate methods, including tables and graphs. • Interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions. • Evaluate data, showing awareness of potential sources of error.

Track your learning

Skill	How I will show what I've learned	☹	😐	☺
Plan	I can answer questions using evidence gathered from different types of scientific enquiry.			
	I can identify and manages variables.			
Do	I can select appropriate equipment.			
	I can consider how by modifying instrument or technique, measurements can be improved.			
	I can identify situations in which taking repeat readings will improve the quality of evidence.			
Record	I can use labelled diagrams to show more complex outcomes.			
	I can use various ways to record complex evidence.			
	I can use a line graph to record complex data.			
Report	I can write a conclusion using evidence and identifying causal links.			
	I can display and present key findings from enquiries orally and in writing.			
	I can indicate why some results may not be entirely trustworthy.			
Review	I can identify how an idea is supported or refuted by evidence.			
	I can use evidence to suggest further comparative or fair tests that would develop the investigation.			

CAPTAIN PEEKO — Spotting patterns everywhere!

Pattern seeking

BILLY BOOKHEAD — He's got all the facts!

Research using secondary sources

SUPERGIRL — Making sure all's fair and right!

Comparative and fair testing

SPY MAGNUS — Watching near and far!

Observing over time

COMMANDER CLASSIFY

Identifying, classifying and grouping

Vocabulary	
Classify	To arrange things in categories according to shared characteristics or properties.
Research	To investigate to discover facts about a topic.
Conclusion	To summarize the main points of an experiment.
Identify	To establish what something is.
Compare	To draw an analogy between one thing and (another) for the purposes of explanation or clarification.
Contrast	To show how something is different in a science experiment.
Biology	The study of living organisms.
Chemistry	The study of chemicals and substances and what they're made up of.
Physics	The study of properties of matter and energy.
Prediction	To have an educated guess as to what may happen in an experiment.
Interpret	To understand something in a specified way.
Data	A collection of information.
Evidence	A sign that shows something is true.
Fair test	A test which controls all but one variable.
Systematic	To use a system or regular orderly method.
Construct	To create something e.g. a graph
Accurate	Free from error as a result of taking care.
Variables	Something that is changed in an experiment.
Line graphs	A graph which is used to show changes over time and consists of a line.
Factor	Something that contributes to a result.
Scatter graph	A graph of plotted points that show the relationship between two sets of data.