Bumblebees – Science KCV – Working Scientifically

Key skills to do:

• Know how to choose appropriate variables to test a hypothesis (e.g. plant height as a dependent variable when measuring effect of light on plant growth)
• Know how to identify conditions that were imperfectly controlled and can explain how these might affect results
• Know how to accurately use further measuring devices, including digital and analogue scales, measuring cylinders and beakers, recognizing the relative accuracy of each device
• Know how and when to repeat measurements, how to find an average of a set of measurements and how to recognize and remove outliers from a set of data, justifying the removal as a potential mis-measurement
• Know how to independently write a simple scientific enquiry write-up including an introduction, a list of equipment, a numbered method, a detailing of results and a conclusion
• Know how to present brief oral findings from an enquiry, speaking clearly and with confidence and using notes where necessary
• Know examples of instances where scientific evidence has been used to support or refute ideas or arguments (e.g. fossil records as evidence of natural selection)

Words to know and spell (Tier 2 Vocabulary)

Opinion	Scatter graph	Outlier
Fact	Line graph	Refute
Variable	Relationship	
Precision	Systematic	
classification	Casual	

Words to understand and spell (Tier 3 Vocabulary)

Independent variable	A variable that is unchanged.
Dependent variable	The variable that is being measure or observed.
Controlled variable	A variable that you keep the same to avoid the results being invalidated.
Hypothesis	A prediction based on scientific theory.
Pattern seeking	Making measurements and observations and identifying any patterns found.

Concept check questions. Test yourself:

How could I test this theory?
What do your results show?
Why do you think you found that pattern?

Opportunities for Investigation: A child-led project to be developed over the half term, ideally to cover a 'Pattern Seeking' line of enquiry.
Suggestions:
Is there a pattern to how light/bright it is in school over the day? And, if there is a pattern, is it the same in every classroom?
Is there a pattern between what we eat for breakfast and how fast we can run?