

	EYFS -----> KS1 -----> Secure			LKS2 -----> Secure		UKS2 -----> Secure ----->		
	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 6+
Patterns	I recognise, create & describe simple patterns (e.g. size)	I recognise, create & describe simple number patterns	I describe simple features & patterns in data & charts	I describe simple patterns in data, charts & graphs	I describe simple patterns, trends & relationships in data	I describe patterns, trends & relationships in data	I describe changing patterns , trends & relationships	I compare changing patterns, trends & relationships
	I begin to use 'more or less', etc to compare observation	I use 'more or less' to compare numbers	I see obvious differences in sets of numbers	I see subtle differences in sets of numbers	I see differences (error) in repeated data	I spot anomalous data that doesn't fit the pattern	I spot anomalous data & explain from the method	I deal with anomalous data to increase reliability
Conclusions	I talk about changes that I observe during activities	I describe the changes that are happening	I describe the changes that have happened	I describe my results by linking cause & effect	I describe trends & begin to use science to explain	I use data in my conclusions & use science to explain	I use 1°/2° data & science ideas in my conclusions	I use a range of data in conclusions & models to explain
	I explore 'what if ..' questions through play	I explore different ways to do things through play	I suggest a different way to do things with help	I suggest improvements to my method	I suggest sensible improvements to my method	I identify strengths & weaknesses & improvements	I suggest limitations (data) & practical improvements	I suggest limitations (use data) & justify improvements

Working Scientifically – word lists

KS1

Axis = reference line drawn on a graph to show the range of data for each variable (shows values)
Block chart = visual tool to show data/counts as bars built up by adding component blocks. Used to compare data visually
Cause = the variable we chose to change in an investigation
Data = a measured or counted outcome for a variable (numbers)
Effect = the variable that changes when we change the cause
Experiment = investigation that looks for a link between variables (fair or comparative test)
Observation = sensed outcome for a variable (described in words)
Pictogram = chart that uses pictures to represent data
Prediction = suggests what might happen based upon prior knowledge or experience (not a guess)
Results table = way of presenting data from an investigation
Risk = dangers when doing an investigation, using equipment or working in an area
Standard units = a quantity of a variable that is used as a standard measure (e.g. litre, meter, gram, etc)
Variable = a factor that can change

LKS2 (plus KS1)

Bar chart/graph = visual tool that uses bars to compare discrete data
Comparative test = fair test comparing discrete differences
Conclusion = the answer you give to a question (based upon data)
Continuous data = values are numbers (result from counting/measuring)
Coordinate = used to plot data (x/y) on a graph
Data interval = numerical gap between data points for a variable
Data point = a coordinate for a variable
Data range = maximum & minimum values for a variable
Discrete data = values are distinct/separate (e.g. male/female; counts)
Fair test = an investigation where only one variable is changed (cause); all others are kept the same and at their best value
Line graph = visual tool that shows a relationship trend between two continuous variables (it is essentially a scatter graph)
Method = ordered sequence of steps taken during an investigation. It can be written or in diagram form
Prediction (correlation/relationship) = describes the expected trend for two variables (cause & effect) that are linked
Prediction (scientific/causal) = suggestion as to what might happen based upon prior knowledge, experience or observation. Links the cause with the predicted effect. Does not have to describe the trend
Spider key = branching classification key where each branch has a yes/no choice (dichotomous key) leading to further choices
Trend = the outcome when two variables (cause & effect) are linked

UKS2 (plus KS1/LKS2)

Anomalous data = data that does not fit a pattern
Controlled variable = variables kept at the same value so they do not influence the dependent variable in a fair test

Making Conclusions

Data set = values for repeated data
Data spread = variation of the data away from a mean (often due to imprecise measuring or when the controlled variable have not been kept the same)
Dependent variable = changed (effect) as a result of changing another. This is observed or measured and demonstrates a relationship in a fair test
Hypothesis = a reasoned prediction based upon theory, experience or direct observation
Independent variable = chosen variable (cause) changed in a fair test.
Mean = 'average' value from a data set
Number key = classification key that is a written, condensed version of a spider key
Precision = how similar your repeated data is (good technique & equipment choice)
Primary data = your experimental data or observations from an investigation
Reliability = if your data can be repeated (i.e. no error). Can be improved through collecting repeated values and calculating a mean
Results table (complex) = Table that contains multiple columns to show repeated data, calculations or a variety of features of a variable
Risk assessment = formal assessment of risk leading to improved safety recommendations or change in practice
Secondary data = researched data or observations. It can also be data gathered from others doing a similar experiment. Used to compare/support
Trend line = line drawn roughly between coordinates to show the trend (does not have to go through all data points)
Valid data = reliable, accurate & no bias or error (we are measuring what is expected)