

AQA ELC Science TDA – marking guide

Skill area A – Experimental design

Entry Level 1	Entry Level 2	Entry Level 3
1 mark	2 marks	3 marks
State how a problem can be investigated and identify techniques or equipment that can be used.. e.g. by identifying the relevant variables or by selecting equipment from a list.	Level 1 plus Describe the way in which techniques or equipment will be used to produce results. e.g. by completing a flow chart for the method.	Level 2 plus Make a prediction about the outcome. e.g. by a statement such as 'I think that... will happen because...'

kettles		Joule meter		laboratory stand and clamp	
beaker		thermometer		ammeter	
balance		marker pen		Bunsen burner	
power pack		heating gauze		stop watch	
tripod		connecting leads		boiling tube	
wooden splint		spatula		measuring cylinder	

Skill area B – Working safely and making measurements or observations

Entry Level 1	Entry Level 2	Entry Level 3
1 mark	2 marks	3 marks
Handle equipment and materials safely. e.g. by wearing safety goggles when appropriate.	Level 1 plus Use equipment to make simple measurements or observations. e.g. by using a microscope to draw a cell, or by correctly reading the display on a meter.	Level 2 plus Show recognition of the need for results to be meaningful. e.g. by checking results, or by carrying out repeats or calculating a mean, or by reference to control variables.

Skill area C – Recording data

Entry Level 1	Entry Level 2	Entry Level 3
1 mark	2 marks	3 marks
Record the results of the experiment. e.g. by writing down the results.	Level 1 plus Use a table the teacher has given you	Level 2 plus Use your own table e.g. by drawing your own table with correct heading and units

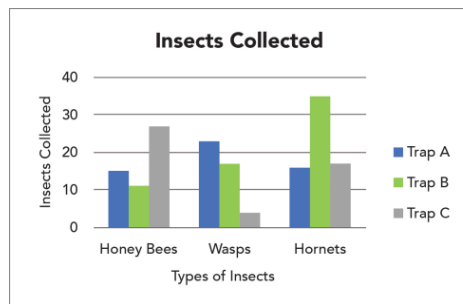
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Skill area D – Presenting data

Entry Level 1	Entry Level 2	Entry Level 3
1 mark	2 marks	3 marks
Select an appropriate method of displaying the data, e.g. a bar chart, pie chart or line graph.	Level 1 plus Plot the data correctly when provided with a blank graph in which the axes have been scaled and labelled for you.	Independently select the correct form of display, and decide on suitable scales and labels for the axes of a graph or bar chart, and then correctly plot the data

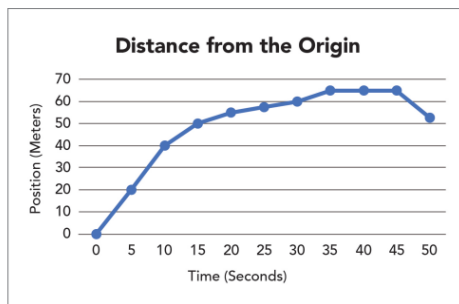
Bar Graph

Used for categorical data; good for comparing groups



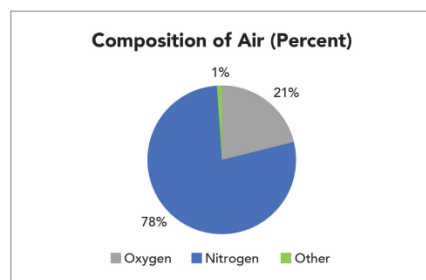
Line Graph

Used for continuous data; good for looking at data over time



Pie Chart

Used to compare parts of a whole; does not have axes like graphs



Skill area E – Identifying patterns and relationships

Entry Level 1	Entry Level 2	Entry Level 3
1 mark	2 marks	3 marks
State simply what you found out in the experiment. eg tea cools faster in a metal cup than it does in a plastic cup.	Level 1 plus Describe a simple relationship in the results or draw a simple conclusion. eg noticing that tea cools faster in a metal cup than it does in a plastic cup, leading to the conclusion that plastic is a better insulator than metal.	Level 2 plus Make a relevant comment about the success or otherwise of the experiment. eg by referring to any anomalous results, or by stating that any repeats always gave the same value.

An anomaly is an unusual result that does not fit the pattern formed by the rest of the results

Independent Variable (Unit)	Dependent Variable (Unit)			
	Test 1	Test 2	Test 3	Average
0.0	0.0	0.0	0.0	0.0
1.0	0.7	0.5	0.5	0.6
2.0	1.6	1.1	1.1	1.3
3.0	1.7	1.8	1.9	1.8
4.0	2.5	2.5	2.3	2.4
5.0	3.1	3.1	2.9	3.0

