

## Commentary on candidate 4 evidence

The evidence for this candidate has achieved the following marks for each section of this course assessment component.

Section	Mark available	Mark awarded	Comments	
1 Aim	1	1	The aim clearly describes the purpose of the investigation.	
2 Underlying biology	3	2	<p>There are at two expanded descriptions/explanations, which are relevant to the aim and at a depth appropriate to National 5 Biology.</p> <ul style="list-style-type: none"> <li>◆ 'Most enzymes... range of an enzyme.' (Description of the working range of enzymes.)</li> <li>◆ 'This leads to... denatured.' (Explanation of the effect of pH on the enzyme.)</li> </ul> <p>The other information given is confused or incorrect eg 'optimum conditions'; 'as temperature or pH increases enzyme activity will also increase'; 'the increase in pH or temperature begins to break apart the enzyme'.</p>	
3 Data collection and handling	6	a	1	The brief description of the experiment is suitable, as there is sufficient detail to allow the nature of the experiment to be visualised.
		b	1	<p>The raw data is sufficient. An appropriate number of values (5 pH's), over a suitable range, has been used for this experiment. Repeated measurements have also been made.</p> <p>The 'Average' column of the table is considered in section 3d.</p>

		c	0	<p>The experimental data is presented in a table but not all of the column headings are clear in their meaning.</p> <p>The 'Height of froth (mm)' heading does not extend over the last column (average), leaving that column with an insufficient heading.</p>	
		d	1	The mean values (averages) from the candidate's experimental data are calculated correctly and are included in the table.	
		e	1	<p>Research data (line graph) that is relevant to the aim and supports the experimental data is included.</p> <p>Although this data is about a different enzyme from the experimental data, it is still relevant to the aim, as the aim does not focus on a particular enzyme.</p>	
		f	1	The source of the research data is referenced as per the instructions for candidates. This is given in sufficient detail for it to be retrieved by a third party.	
4	Graphical presentation	4	a	1	The graph produced is based on the candidate's experimental data. A line graph is selected which is the appropriate format for this data.
			b	1	Both axes have suitable scales.
			c	1	Both axes have suitable labels and units.
			d	0	The point for pH 7 is not plotted accurately (it is outwith the $\frac{1}{2}$ box tolerance).

5	Analysis	1	1	A valid comparison is made between the experimental data and the research data (line graph). A description is given to show that both have similar trends.	
6	Conclusion	1	1	The conclusion given is valid as it relates to the aim and is supported by the data given in the report.	
7	Evaluation	2	0	A factor that could have had a significant effect on the reliability, accuracy or precision of the experiment has not been identified.  There is no explanation as to why the use of a water-soluble pen would make it easier to measure the height of the foam.	
8	Structure	2	a	1	An informative title is given.
			b	1	The report is clear and concise.
<b>Total</b>		<b>20</b>	<b>15</b>		