

Candidate 3 – The heat energy released from biofuels

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 environmental science	3	3	A good understanding of relevant environmental science is demonstrated, at a depth appropriate to National 5.	
3. Data collection and handling	6	a	1	The description of the methodology is provided in sufficient detail to be able to visualise the nature of the experiment.
		b	1	The raw data from the experiment is sufficient, with each of the three biofuels assessed three times.
		c	0	Experimental data are presented in a table which has mostly appropriate headings and units of measurement. The mark has not been awarded as the calculated average values lack units. Units must be indicated in the heading of the columns or given after every data entry.
		d	1	The mean values (averages) for the experimental data are correctly calculated, and are included in the table of results which is acceptable.
		e	1	A table of secondary data relevant to the aim is included. This data was obtained from an internet source.
		f	1	A reference for the second source of data is included, provided in sufficient detail to allow it to be retrieved by a third party.

4. Graphical presentation	4	a	1	The graph is based on the candidate's experimental data. A bar graph is selected, which is the correct format for this type of data.
		b	1	The y-axis scale is linear and the range is suitable for plotting the candidate's experimental data. Bar labels have been used on the x-axis in place of a scale, which is appropriate.
		c	1	The y-axis label is suitable and includes the correct units.
		d	0	It is not possible to check accuracy of data plotting. This could be improved by rounding the values to one fewer significant place or changing the scale. (4b refers to range, not scale).
5. Analysis	1	1	1	Comparison of the experimental data with the internet source of data is valid.
6. Conclusion	1	1	1	The conclusion relates to the aim and is supported by the data/information in the report.
7. Evaluation	2	0	0	The candidate has not identified a factor which could be expected to have a significant effect on the reliability, accuracy or precision of the experiment, nor explained what could have been done to minimise the effect of this factor. There is significant variation between the repeated values which would merit wider discussion, including increasing repetitions.
8. Structure	2	a	1	The title is informative.
		b	1	The report is clear and concise, and flows in a logical manner.
Total	20	16	16	