Commentary on candidate 3 evidence

Soil texture

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, with discussion of soil components; weathering of rock into soil particles of varying size due to interaction between the Earth systems; and the influence of particle size on permeability and porosity and how this affects land use.
3. Data collection and handling	5	a	0	Although the overall experimental procedure can be visualised from the description provided, the candidate has not included the measuring equipment used to measure depth.
		b	1	The raw data from the candidate's field work is sufficient. Two composite samples were collected and replicates from each were analysed.
		c	1	The field work data is tabulated correctly, with correct column headings and units. Mean values have been calculated correctly. Rounding issues (sand rounded from 86.6 to 87% and silt from 11.6 to 12%) plus a problematic clay value result in a total of 101% for the field soil sample; however, rounding rules have been correctly applied.
		d	1	Data relevant to the investigation has been obtained from an internet source, in this case the British Geological Survey's soil texture classification for the sample area. (Note that 'data' also encompasses non-numeric information).

Section	Mark available	Mark awarded		Comments
		e	1	Appropriate citations and references to the British Geological Survey app and other sources are provided. Citations are included within the body of the report, and the references at the end.
4. Graphical presentation	4	a	1	A triangular graph grid has been used, which is an unusual but appropriate display method for plotting this type of data.
		b	1	The axes on the graph have suitable scales.
		c	0	The axes on the graph have appropriate units but the labels do not indicate that it is mean values that are being plotted.
		d	1	Plotting of data is accurate on the garden soil graph. Had there been a problem with the garden soil graph, the field soil graph would have been marked; the fact that the three lines do not intersect accurately on the field soil graph could potentially have seen the plotting mark not awarded, but the (rounded) mean data displayed in the table has been correctly plotted and therefore, the mark is awarded.
5. Analysis	2	a	1	The results from the fieldwork investigation are compared against a UK soil texture classification triangle to determine the soil textures present, and then also compared against a mobile app.
		b	1	Standard deviation values are correctly calculated.
6. Conclusion	1	0		The aim of the investigation is to calculate how much sand, silt and clay is present in soil from two differing sites, and then to compare the results with the BGS app information.

Section	Mark available	Mark awarded	Comments
			The conclusion does not refer to the sand, silt or clay values for either site, nor does the BGS app information relate to these.
7. Evaluation	3	3	Three valid evaluative statements are provided: ♦ improving soil collection ♦ issues associated with measuring the clay layers and how this affected calculations ♦ reliability of the BGS app information
8. Structure	1	1	The report is clear and concise with an informative title.
Total	**20**	**17**	