Example 17: Geodesic Domes

Assessment

Criterion	A	B	C	D	E (SL)	E (HL)	Total (SL)	Total (HL)
Achievement level awarded	3	1	3	2	4	2	13	11
Maximum possible achievement level	4	3	4	3	6	6	20	20

Student work (PDF)

Annotated student work (PDF)

Comments

Comments

Criterion A: Communication

A3—Not easy to follow at times but clear structure in trying consecutive cases. Brief rationale and clear aim and clearly addresses aim in conclusion. Lacks conciseness – repetitive calculation (|Pp –7).

Criterion B: Mathematical presentation

B1—Defines frequency of geodesic domes. Pi symbol (P 2). Units in formula unnecessary. Uses technology appropriately to display domes but graphs of correlation between type of dome v triangle area are difficult to read. Repeated rounded errors throughout (eg Pp 3–4…). Does not define x on p11.

Criterion C: Personal engagement

C3—TV series sparked interest to explore different types of domes. Relates to physics knowledge. Original approach to using technology to represent domes. Approaches problem using different methods – geometrically, graphically.

Criterion D: Reflection

D2—Reflects on durability of different sizes and shapes and on results in the context of the exploration. Does not reflect on nature of non-integer dome types.

SL Criterion E: Use of mathematics

E4—Limited data used. Basic mathematics (area/perimeter) used at first but necessary to build up exploration. Use of cosine rule and area formula commensurate with SL course and well understood. Reason for choice of functions on Pp8–9 not given so does not demonstrate thorough understanding. Too few data points used for regression analysis.

HL Criterion E: Use of mathematics

E2—Limited data used. Basic mathematics (area/perimeter) used at first but necessary to build up exploration. Use of cosine rule and area formula commensurate with HL course and well understood. Reason for choice of functions on Pp 8–9 not given so does not demonstrate thorough understanding. Too few data points used for regression analysis.

Any Other relevant information

Images referenced on “Sources” page but this citation should be clearer.