Collins Cambridge IGCSE® Environmental Management

Supplementary guidance for answering: AO3 Investigation skills and making judgement questions

The syllabus requires that you should be able to:

1. plan investigations
2. identify limitations of methods and suggest possible improvements
3. present reasoned explanations for phenomena, patterns and relationships
4. make reasoned judgements and reach conclusions based on qualitative and quantitative information

The Student Book contains **AO3** style questions. You can use some of the suggestions here to help plan and complete your investigations:

Section	Suggested content/ideas
Introduction	Your introduction should describe the purpose of your investigation – what you are planning to do and why this investigation is important. You should include some introductory facts and figures that help explain the context or background to your investigation. You should also come up with a research question. This will ensure that your investigation is well focused. Some examples include: *'Is earthquake or tropical cyclone strength the most important factor in determining death toll?'* *'Does age affect the awareness of issues facing the world's oceans?'* *'How does energy consumption vary throughout school?'*
Methods	Once you have established the focus of your investigation you will need to decide how you collect data and the methods you will use. Some investigations will require primary data that you collect yourself. This would include survey data or observations from fieldwork. Other investigations will be based entirely on secondary data – data that you have found from another source. Some investigations will use both. You will need to outline the methods you decided to use to collect data and write a description that shows your approach. You should identify any problems you had and any limitations with your approach. You could also suggest improvements. This could be presented as a table.

Data presentation	In this section you will present your findings graphically. There are many techniques you could use: • bar graphs • line graphs • scatter graphs • pie charts • annotated photos • sketches • annotated maps • diagrams • digital maps such as Google Earth or Google Maps (https://www.google.com/maps) You should ensure that you are accurate in your presentation and should include labelled axes, titles, text boxes, and on the maps, you should include a scale, key and north arrow. It is important to use a range of techniques.
Analysis	Look at and describe any trends in your data presentation. Use figures and refer to graphs/tables/maps. Look for any anomalies in your data presentation and suggest reasons for these. Try to explain any trends or patterns you can see in the data. Ensure that you refer to the data and to your data presentation. Try to relate your findings to the research question.
Conclusion	This section should contain an answer to your research question. It is based upon all of your findings so you should refer to your data. You should not introduce any new data here.