

The six stages of the enquiry process

The enquiry process forms the framework for application of the fieldwork and geographical skills. Knowledge and understanding of the six stages will be developed overall through the fieldwork and each of the days undertaken may focus on some of the aspects of the six stages; all of the geographical skills involved in the enquiry process need not be undertaken on the fieldwork days. The aim should be to build by the end of the fieldwork a holistic understanding of the six stages.

Sequence and enquiry questions	Geographical skills
1. Context and planning – what is the geographical enquiry process?	Prepare to investigate a geographical question in the field; make and justify decisions on the task including data collection methods and how to use them; define and refine the research question(s) that underpin the context of the field investigation; risk and ethical issues
2. Data collection – how is data and information (evidence) collected?	Acquire field data (primary) and relevant literature (secondary data / information) pertinent to the research question; implement chosen methodologies to observe and record in the field using quantitative and qualitative methods and field (primary) and secondary data / information; understand the theory / context for the research question. Justify practical approaches taken in the field, (including frequency/timing of observation, sampling, and data collection approaches)
3. Presentation and display – how is the collected data and information presented?	Process a range of field and any relevant secondary data / information using quantitative and qualitative methods in order to lead to appropriate analysis
4. Analysis and interpretation of findings – how can the evidence be analysed?	Interrogate (interpret and analyse) data / information from field (primary) data, and, as relevant, secondary data / information; describe patterns, trends, relationships; apply knowledge and understanding of geographical knowledge, concepts and processes and theory to specific evidence collected to understand field observations
5. Conclusion – what conclusions can be drawn and how do these relate to the initial aim of the enquiry?	Synthesise findings to draw conclusions based on evidence and theoretical research
6. Evaluation of the whole investigation – what evaluative techniques should be applied to the enquiry process?	Critically reflect on every stage of the whole investigation in order to appreciate the strengths and limitations of the primary and secondary data, links to original question; note strengths and limitations (accuracy, validity and reliability) and anomalies and / or errors or misuse of data; evaluate the methodology including, if relevant, sampling techniques; suggest improvements for further research

To prepare for each of their fieldwork activities, learners should be given opportunities to:

- pose geographical questions
- consider appropriate data collection methodologies
- design survey strategies before they go on field visits.

In considering and collecting appropriate raw data / information collected in the field (primary data / information), learners should be guided to observe and record by:

- taking measurements and surveys, including questionnaires, observations and interviews
- making images, including field sketches and photographs
- obtaining raw census material
- obtaining information from GIS.

Learners should also be guided towards sampling techniques, coding, timing and frequency as appropriate. In order to understand the theoretical or comparative context of their research question(s) learners also need to be guided to collect secondary information as appropriate. This is data that has already been processed in published materials.

Data collected in the field is often referred to as primary data and involves such quantitative skills as measurements and qualitative skills as observations and interviews.

After their various fieldwork activities, learners should be given opportunities to:

- consider appropriate methods of data / information presentation
- reflect on their fieldwork findings by processing data
- analyse patterns and trends and draw conclusions
- evaluate techniques and the various fieldwork activities.

At **AS Level**, this exercise of collecting and analysing field data and reflecting on the fieldwork provides the preparation necessary for the assessment of the learner's own physical and human geography fieldwork through the exam. The writing up of the physical and human geography fieldwork will help learners' understanding of the stages undertaken.

At **A Level**, the exercise of collecting and analysing field data and reflecting on the fieldwork as a whole provides the preparation necessary for the completion of the final sections in the written independent investigation in Component 4.

The place of geographical skills in the specification

Geographical skills should be addressed in all components, not as a separate theme or topic. Learners must be introduced to a roughly equal balance of quantitative and qualitative skills across the specification as a whole, although the balance between the two will vary depending on the theme.

Learners are required to:

- understand the nature and use of different types of geographical information, including qualitative and quantitative, primary and secondary, images, factual text and discursive/creative material, digital data, numerical and spatial data and innovative forms of data, including crowd-sourced and 'big data'
- collect, analyse and interpret such information, and demonstrate the ability to understand and apply suitable analytical approaches for the different information types
- undertake informed and critical questioning of data sources, analytical methodologies, data reporting and presentation, including the ability to identify sources of error in data and to identify the misuse of data.
- For qualitative data, learners must demonstrate the following skills:
- use and understand a mixture of methodological approaches, including using interviews
- interpret and evaluate a range of source material including textual and visual sources
- understand the opportunities and limitations of qualitative techniques such as coding and sampling, and appreciate how they actively create particular geographical representations
- understand the ethical and socio-political implications of collecting, studying and representing geographical data about human communities.

For quantitative data, learners must demonstrate the following skills:

- understand what makes data geographical and the geospatial technologies (e.g. GIS) that are used to collect, analyse and present geographical data
- demonstrate an ability to collect and to use digital, geo-located data, and to understand a range of approaches to the use and analysis of such data
- understand the purposes and difference between the following and be able to use them in appropriate contexts: descriptive statistics of central tendency and dispersion
- descriptive measures of difference and association, inferential statistics and the foundations of relational statistics, including (but not limited to) measures of correlation and lines of best fit on a scatter plot
- measurement, measurement errors, and sampling.