Advanced Higher Course Specification

Advanced Higher Geography

Course code:	C833 77
Course assessment code:	X833 77
SCQF:	level 7 (32 SCQF credit points)
Valid from:	session 2019–20

This document provides detailed information about the course and course assessment to ensure consistent and transparent assessment year on year. It describes the structure of the course and the course assessment in terms of the skills, knowledge and understanding that are assessed.

This document is for teachers and lecturers and contains all the mandatory information required to deliver the course.

This edition: September 2019 (version 2.0)

Contents

Course overview

This course consists of 32 SCQF credit points, which includes time for preparation for course assessment. The notional length of time for candidates to complete the course is 160 hours.

The course assessment has three components.

Component	Marks	Duration
Component 1: question paper	50	2 hours and 30 minutes
Component 2: project–folio — geographical study	60	see 'Course assessment' section
Component 3: project–folio — geographical issue	40	see 'Course assessment' section

Recommended entry	Progression
Entry to this course is at the discretion of the centre. Candidates should have achieved the Higher Geography course or equivalent qualifications and/or experience prior to starting this course.	♦ Higher National Qualifications or degree courses in social subjects and science or related areas ♦ further study, employment and/or training

Conditions of award

The grade awarded is based on the total marks achieved across all course assessment components.

Course rationale

National Courses reflect Curriculum for Excellence values, purposes and principles. They offer flexibility, provide time for learning, focus on skills and applying learning, and provide scope for personalisation and choice.

Every course provides opportunities for candidates to develop breadth, challenge and application. The focus and balance of assessment is tailored to each subject area.

This course builds on the principles and practices of the social studies and science curriculum areas. Candidates develop important attitudes, including: an open mind and respect for the values, beliefs and cultures of others; openness to new thinking and ideas; and a sense of responsibility and global citizenship.

Through the study of geography, and by gaining geographical analysis techniques, candidates develop an understanding of aspects of the contemporary world. They are challenged to look at the world in new ways, understand more about their sense of identity, and learn about different countries and cultures.

Candidates gain experience of working on their own through the independent study, research, critical thinking, and evaluation skills embedded in the course. Candidates further develop skills and attributes which are highly valued by higher education institutions, transferable and important for their life and work.

Candidates build up a framework of geographical knowledge and understanding with which to understand and respond to geographical issues. They develop an increased understanding of the environment, sustainability and the impact of global issues. They are encouraged to develop a sense of responsible citizenship, and to reflect on the impact of the environment on health and wellbeing. The emphasis on the evaluation of sources, including maps, develops candidates' thinking skills. They develop skills including fieldwork, making decisions, critical evaluation, and the use of geographical methodologies.

Candidates progressively develop skills in literacy by producing extended writing. They develop skills in numeracy through data collection, data processing, and the use of statistical techniques and geographical information systems.

Purpose and aims

The course develops candidates' understanding of our changing world, its human interactions and physical processes. Practical activities, including fieldwork, provide opportunities for candidates to interact with their environment.

The study of geography encourages positive lifelong attitudes of environmental stewardship, sustainability and global citizenship. The course provides candidates with the skills, knowledge and understanding to contribute effectively to their local communities and wider society.

The course helps create informed and active citizens by enabling candidates to develop a greater understanding of the human and physical processes which have an impact on their environment, and by encouraging scientific rigour in data collection and interpretation.

Candidates develop skills which are transferable to other areas of study and which they can use in everyday life. They carry out independent research and take responsibility for their own learning, with support from teachers, lecturers, tutors, or peers, as appropriate.

The course aims to enable candidates to:

- understand the ways in which people and the environment interact in response to physical and human processes
- study spatial relationships to develop a balanced and critical understanding of the changing world
- further acquire a geographical perspective on environmental and social issues and their significance
- further develop skills of independent research, fieldwork, analysis, synthesis, evaluation and presentation
- further develop skills and techniques to collect, extract, analyse and interpret information to explain geographical phenomena using appropriate terminology
- further develop expertise in the use of maps, diagrams, statistical techniques and written accounts

Who is this course for?

The course is designed for a range of candidates, from those who wish to achieve a greater understanding of the environment and their place in it, to those who wish to progress to more specialised training, further education, or entry into a diverse range of occupations and careers.

The specific geographical, research and presentation skills developed in the course, and its general approach to developing skills of independent working, benefits candidates as they progress to higher education, and the world of work.

The transferable skills developed in the course provide preparation for candidates entering occupations and careers such as town and transport planning, chartered surveying, renewable energy, land and water management, environmental consultancy, development, tourism, conservation, demography, housing and social welfare.

Course content

The course covers:

Geographical skills

Candidates develop a wide range of geographical methods and techniques including mapping skills, graphical techniques, and a range of statistical techniques for analysing and interpreting geographical data. Candidates develop a wide range of investigating skills while undertaking independent research such as:

- scoping or identifying appropriate research topics
- how to plan and manage a complex programme of research
- techniques to source, collect and record appropriate and reliable primary and secondary information
- methods of independent fieldwork
- techniques to present findings using appropriate conventions
- how to evaluate research methodology

Geographical issues

Candidates develop critical thinking and the ability to evaluate sources and viewpoints on current complex geographical issues.

Skills, knowledge and understanding

Skills, knowledge and understanding for the course

The following provides a broad overview of the subject skills, knowledge and understanding developed in the course:

- developing and using a wide range of research and mapping skills and techniques in complex geographical contexts
- developing and using a wide range of numerical and graphical skills and techniques in geographical contexts
- developing and using a wide range of statistical techniques
- developing and using knowledge and understanding of geographical terminology, ideas and systems, in conjunction with complex information, to explain and analyse a wide range of geographical phenomena
- developing and applying skills, knowledge and understanding to analyse a wide range of complex geographical evidence

Skills, knowledge and understanding for the course assessment

The following provides details of skills, knowledge and understanding sampled in the course assessment.

Candidates study the following:

- map interpretation
- gathering and processing techniques
- geographical data handling

Map interpretation

Candidates demonstrate mapping skills techniques through their ability to use evidence from maps and other supplementary items.

The question paper uses map extracts from the 1:25,000 scale Ordnance Survey (OS) *Explorer Series* topographical sheets of England and Wales. Although candidates are assessed on their map interpretation skills, they are expected to apply prior knowledge of map reading and interpretation, for example, using scale, drawing to scale, interpretation of relief and surface features. This also includes grid references and reference to features symbolised on the map.

In addition to the OS map, candidates are expected to interpret and use information from supplementary items such as:

- maps or map-based diagrams
- photographs
- sketches
- graphical information
- outline drawings
- drawings based on photographs, data tables and written text about the area

Gathering and processing techniques

Candidates demonstrate their knowledge and understanding of gathering and processing techniques in the context of research and/or fieldwork, and the analysis and/or evaluation of data which might be obtained as a result of using those techniques. Questions **may** use the supplementary items supplied with the question paper.

The question paper samples from the following skills and techniques:

Physical

- beach profile analysis
- micro-climate analysis
- pebble analysis
- slope analysis
- soil analysis

- stream analysis
- vegetation analysis

Human

- environmental quality survey
- interview design and implementation
- pedestrian survey
- perception studies
- questionnaire design and implementation
- rural land use mapping
- traffic survey
- urban land use mapping

Geographical data handling

Candidates interpret and analyse a given set of data, including statistical data, to evaluate any techniques used and their effectiveness in order to explain geographical relationships. Questions use the supplementary items supplied with the question paper.

The question paper samples from the following skills and techniques:

- handling different data types — nominal, ordinal, interval
- sampling methods — random, regular, stratified
- graphical presentation of data — bipolar analysis, dispersion diagram, kite diagram, logarithmic graph, polar graph, systems diagrams, scattergraph, triangular graph
- map or map-based diagram — annotated overlay, choropleth map, cross section, dot map, flow line map, isoline map, proportional symbols, sphere of influence map, transect
- descriptive statistics:
  - — measures of central tendency — mean, median, mode
  - — measures of dispersion — range, interquartile range, standard deviation, standard error of the mean, coefficient of variation
- inferential statistics: chi squared analysis, linear regression analysis, nearest neighbour analysis, Pearson's product moment correlation coefficient, Spearman's rank correlation coefficient

Note: candidates are expected to be able to use a general atlas, suitable for SCQF level 7. An atlas is a very valuable resource that helps candidates to locate an OS map extract in its broader setting, and provide thematic information.

Skills, knowledge and understanding included in the course are appropriate to the SCQF level of the course. The SCQF level descriptors give further information on characteristics and expected performance at each SCQF level, and are available on the SCQF website.

Skills for learning, skills for life and skills for work

This course helps candidates to develop broad, generic skills. These skills are based on SQA's Skills Framework: Skills for Learning, Skills for Life and Skills for Work and draw from the following main skills areas:

1 Literacy

1.1 Reading

1.2 Writing

2 Numeracy

2.3 Information handling

4 Employability, enterprise and citizenship

4.6 Citizenship

5 Thinking skills

5.3 Applying

5.4 Analysing and evaluating

Teachers and lecturers must build these skills into the course at an appropriate level, where there are suitable opportunities.

Course assessment

Course assessment is based on the information in this course specification.

The course assessment meets the purposes and aims of the course by addressing:

- challenge — requiring greater depth or extension of knowledge and/or skills
- application — requiring application of knowledge and/or skills in practical or theoretical contexts as appropriate

This enables candidates to:

- draw on, extend and apply the skills, knowledge and understanding acquired during the course
- demonstrate depth of knowledge and understanding, and application of skills
- demonstrate challenge and application related to independent research and critical evaluation

Course assessment structure: question paper

Question paper 50 marks

The question paper has a total mark allocation of 50 marks. This is 33% of the overall marks for the course assessment.

The question paper enables candidates to demonstrate the application of their skills and breadth of knowledge and understanding from across the course.

In the question paper candidates have an opportunity to demonstrate:

- knowledge of a wide range of geographical methods and techniques and understanding of the contexts in which they should be used
- applying a wide range of geographical methods and techniques including mapping skills, research and/or fieldwork skills, graphical techniques and statistical techniques for analysing and interpreting geographical data

The questions cover map interpretation, gathering and processing techniques, and geographical data handling, using relevant accompanying supplementary items.

Map interpretation (20 marks)

Questions assess candidates' mapping skills techniques and their ability to use map evidence to support a response. Candidates use a 1:25,000 scale OS map and other supplementary items.

Gathering and processing techniques (10 marks)

Questions assess candidates' knowledge and understanding of gathering and processing techniques in the context of research and/or fieldwork, and their analysis and/or evaluation of data which might be obtained as a result of using those techniques. Questions **may** use the supplementary items supplied with the question paper.

Geographical data handling (20 marks)

Questions assess candidates' interpretation and analysis of a given set of data, including statistical data, to evaluate techniques used and their effectiveness in explaining geographical relationships. Questions use the supplementary items supplied with the question paper.

The question paper contains two or three questions. Candidates attempt all questions.

Questions draw on the skills, knowledge and understanding described in the 'Skills, knowledge and understanding for the course assessment' section and require candidates to integrate their geographical skills in order to explain, analyse and evaluate information. Questions may focus on one particular skill or they may integrate more than one skill area.

In addition to the OS map, supplementary items are provided with the question paper. These are in the form of one or more of the following:

- maps or map-based diagrams
- tracing overlay
- photographs
- sketches
- graphical information
- outline drawings
- drawings based on photographs, data tables and written text about the area

Use of an atlas

Centres must provide an atlas for each candidate to use in the examination. It must be suitable for use at SCQF level 7 and be of a general type (not devoted to one region or purely thematic). Centres must ensure that the atlases candidates use are clean copies and contain no additional material.

Setting, conducting and marking the question paper

SQA sets and marks the question paper. It is conducted in centres under conditions specified for external examinations by SQA.

Candidates have 2 hours and 30 minutes to complete the question paper.

All marking is quality assured by SQA.

Specimen question papers for Advanced Higher courses are published on SQA's website. These illustrate the standard, structure and requirements of the question papers. The specimen papers also include marking instructions.

Course assessment structure: project–folio

Project–folio: geographical study 60 marks

The geographical study has a total mark allocation of 60 marks. This is 40% of the overall marks for the course assessment.

The geographical study enables candidates to demonstrate the application of their skills, knowledge and understanding through undertaking independent research.

Candidates have the opportunity to demonstrate:

- independent research and/or fieldwork
- applying a wide range of geographical methods and techniques
- integrating a wide range of geographical skills

Setting, conducting and marking the geographical study

In order to complete the geographical study, candidates need to:

- justify their choice of a complex geographical topic to research
- plan and carry out detailed research, which could include fieldwork
- evaluate the research techniques and the reliability of data gathered
- demonstrate a detailed knowledge and understanding of the topic being studied from wider reading
- use a wide range of appropriate techniques to process the gathered information
- analyse all the information they have gathered and processed to identify and explain relationships
- reach reasoned conclusions supported by a wide range of evidence

Candidates should demonstrate the ability to undertake detailed research of a geographical nature which uses primary and/or secondary sources, to gather and process data and report findings appropriately.

Teachers and lecturers should provide reasonable guidance on the types of study which will enable candidates to meet all the requirements of this assessment. Teachers and lecturers may also guide candidates as to the likely availability and accessibility of resources for their chosen study.

Candidates will work on their geographical study with minimum support from the teacher or lecturer.

The geographical study is managed by centres within SQA guidelines and is conducted under some supervision and control.

Evidence is submitted to SQA for external marking. All marking is quality assured by SQA.

Project–folio: geographical issue 40 marks

The geographical issue has a total mark allocation of 40 marks. This is 27% of the overall marks for the course assessment.

The geographical issue enables candidates to demonstrate the application of their skills, knowledge and understanding through undertaking independent research.

Candidates have the opportunity to demonstrate:

- critically evaluating a current complex geographical issue using a wide range of sources and viewpoints
- integrating a wide range of geographical skills

Setting, conducting and marking the geographical issue

In order to complete the geographical issue, candidates need to:

- justify their choice of a current complex geographical issue to critically evaluate
- undertake wider background reading from a wide range of sources relating to the geographical issue
- summarise a wide range of viewpoints on the complex geographical issue
- critically evaluate each of the viewpoints
- reach reasoned conclusions supported by a wide range of evidence

Candidates should demonstrate the ability to carry out a critical evaluation of a complex geographical issue by identifying viewpoints from a wide range of sources relating to the issue, and evaluating these viewpoints in a way that allows valid conclusion(s) to be drawn.

Teachers and lecturers should provide reasonable guidance on the types of issue which will enable candidates to meet all the requirements of this assessment. Teachers and lecturers may also guide candidates as to the likely availability and accessibility of resources for their chosen issue.

Candidates will work on their geographical issue with minimum support from the teacher or lecturer.

The geographical issue is managed by centres within SQA guidelines and is conducted under some supervision and control.

Evidence is submitted to SQA for external marking. All marking is quality assured by SQA.

Assessment conditions

Project–folio (geographical study and geographical issue)

Time

Both parts of the project–folio are carried out over a period of time. Candidates should start at an appropriate point in the course.

Candidates must produce the assessment evidence independently in time to meet a submission date set by SQA.

Supervision, control and authentication

Teachers and lecturers must exercise their professional responsibility to ensure that evidence submitted by a candidate is the candidate's own work.

The project–folio is conducted under some supervision and control. This means that, although candidates may complete part of the work outwith the learning and teaching setting, teachers and lecturers should put in place processes to monitor progress and ensure that the work is the candidate's own, and that plagiarism has not taken place. For example:

- regular checkpoint and/or progress meetings with candidates
- short spot-check personal interviews
- checklists which record activity and/or progress

Group work approaches are acceptable during the research phase of the project–folio. Candidates should acknowledge any group work undertaken. However, the completed project–folio must be the candidate's own work.

Candidates may seek clarification from their teacher or lecturer regarding the wording of a brief or specification, or instructions for the assessment if they find them unclear. In this case, the clarification should normally be given to the whole class.

Teacher and lecturer input and advice is acceptable in order to allow candidates to progress to the next stages of the assessment.

Resources

There are no restrictions on the resources to which candidates may have access.

Reasonable assistance

Centres must ensure that each candidate's evidence for their project–folio is their own work. However, reasonable assistance may be provided. The term 'reasonable assistance' is used to try to balance the need for support with the need to avoid giving too much assistance. If a candidate requires more than what is deemed to be 'reasonable assistance', they may not be ready for assessment, or they may have been entered for the wrong level of qualification.

Reasonable assistance may be given on a generic basis to a class or group of candidates, for example, advice on submission dates. It may also be given on a generic basis to an individual candidate.

When reasonable assistance is given on a one-to-one basis in the context of something the candidate has already produced or demonstrated, there is a danger that it becomes support for assessment. Teachers or lecturers must be aware that this should not go beyond reasonable assistance.

Evidence to be gathered

The following evidence is required for this assessment:

- candidate's completed project–folio which consists of the geographical study and the geographical issue

Volume

Geographical study

The word count for the completed geographical study should be no more than 3,000 words (excluding any text used on front covers, list of contents, annotations to any illustrations, references, bibliography and appendices). Candidates must submit the word count with the completed geographical study.

If the word count exceeds the maximum by more than 10%, a penalty is applied.

Geographical issue

The word count for the completed geographical issue should be no more than 1,800 words (excluding any text used on front covers, list of contents, annotations to any illustrations, references, bibliography and appendices). Candidates must submit the word count with the completed geographical issue.

If the word count exceeds the maximum by more than 10%, a penalty is applied.

Grading

Candidates' overall grades are determined by their performance across the course assessment. The course assessment is graded A–D on the basis of the total mark for all course assessment components.

Grade description for C

For the award of grade C, candidates will typically have demonstrated successful performance in relation to the skills, knowledge and understanding for the course.

Grade description for A

For the award of grade A, candidates will typically have demonstrated a consistently high level of performance in relation to the skills, knowledge and understanding for the course.

Equality and inclusion

This course is designed to be as fair and as accessible as possible with no unnecessary barriers to learning or assessment.

Guidance on assessment arrangements for disabled candidates and/or those with additional support needs is available on the assessment arrangements web page: www.sqa.org.uk/assessmentarrangements.

Further information

- Advanced Higher Geography subject page
- Assessment arrangements web page
- Building the Curriculum 3–5
- Guide to Assessment
- Guidance on conditions of assessment for coursework
- SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work
- Coursework Authenticity: A Guide for Teachers and Lecturers
- Educational Research Reports
- SQA Guidelines on e-assessment for Schools
- SQA e-assessment web page
- SCQF website: framework, level descriptors and SCQF Handbook

Appendix: course support notes

Introduction

These support notes are **not** mandatory. They provide advice and guidance to teachers and lecturers on approaches to delivering the course. Please read these course support notes in conjunction with the course specification and the specimen question paper and/or coursework.

Developing skills, knowledge and understanding

This section provides advice and guidance about skills, knowledge and understanding that teachers and lecturers could include in the course. Teachers and lecturers have considerable flexibility to select contexts that stimulate and challenge candidates, offering both breadth and depth.

The development of subject-specific and generic skills is central to the course. Teachers and lecturers should make candidates aware of the skills they are developing and of the transferability of them. Transferable skills help candidates with further study and to enhance their personal effectiveness.

The following provides an overview of the skills, knowledge and understanding developed in the course:

- developing and using a wide range of research and mapping skills and techniques in complex geographical contexts
- developing and using a wide range of numerical and graphical skills and techniques in geographical contexts
- developing and using a wide range of statistical techniques
- developing and using knowledge and understanding of geographical terminology, ideas and systems, in conjunction with complex information, to explain and analyse a wide range of geographical phenomena
- developing and applying skills, knowledge and understanding to analyse a wide range of complex geographical evidence
- using primary and secondary sources of information and data, including fieldwork where possible

The ‘Approaches to learning and teaching’ section provides suggested activities that teachers and lecturers can use to develop skills, knowledge and understanding.

Teachers and lecturers should refer to the course specification for the skills, knowledge and understanding for the course assessment.

Approaches to learning and teaching

At Advanced Higher level, candidates further develop the ability to work independently. Teachers and lecturers should encourage candidates to use an enquiring, critical and problem-solving approach to their learning. Candidates should also have the opportunity to practise and develop research skills, and evaluation and analytical skills. Some of the approaches to teaching and learning suggested for other levels (in particular Higher) may also apply at Advanced Higher level.

Practice in the skills

Teachers or lecturers could give candidates sources and ask them to identify the main arguments used. Candidates could critically evaluate those lines of argument by highlighting statements which support the argument or undermine it. Candidates could also identify any bias, credibility or information which is missing. Candidates could discuss how reliable the sources are in the text and whether the data is up to date. Teachers or lecturers could ask if the candidate reaches the same conclusions as the writer.

Teachers and lecturers should encourage candidates to engage in a variety of learning activities, including:

- researching information for their subject rather than receiving information from their teacher or lecturer
- undertaking fieldwork
- using active and open-ended learning activities such as research, case studies and presentation tasks
- making accurate and relevant searches for information on the internet and selecting credible websites as sources of information
- engaging in wide-ranging independent reading
- recording, in a systematic way, the results of research and independent investigation from different sources
- presenting findings and conclusions of research and investigation activities to a group
- participating in group work with peers and using collaborative learning opportunities to develop teamwork
- participating in informed debate and discussion with peers where they can demonstrate skills in constructing and sustaining lines of argument to provide challenge and enjoyment, breadth, and depth to learning
- reaching conclusions from a wide range of complex information
- using appropriate written and/or oral communication and presentation skills to present information
- using appropriate technological resources, for example using voice recorders to capture interview responses
- using appropriate media resources, for example video clips
- using real-life contexts and experiences familiar and relevant to candidates to exemplify skills, knowledge and understanding
- participating in field trips and visits

Teachers and lecturers should support candidates by having regular discussions with them and giving regular feedback. Some learning and teaching activities may be carried out in groups and, where this applies, candidates could receive feedback from their peers.

Teachers and lecturers should, where possible, provide opportunities to personalise learning, and enable candidates to have choices in approaches to learning and teaching. The flexibility in Advanced Higher courses, and the independence with which candidates carry out the work, enables this. Teachers and lecturers should also create opportunities for, and use, inclusive approaches to learning and teaching. Teachers and lecturers can do this by using a variety of learning and teaching strategies which suit the needs of all candidates.

There is no recommended teaching order for this course.

Project–folio: geographical study

This allows candidates to further develop their range of geographical methods and techniques. These include mapping skills, graphical techniques and a range of statistical techniques for gathering, analysing and interpreting geographical data.

Developing independent geographical research skills

Candidates may need support and guidance to **plan** their choice of topic to ensure it has a sufficient level of demand. Teachers and lecturers should encourage candidates to engage in background reading to support their choice of topic, and support them with appropriate learning and teaching experiences.

- Candidates should identify a topic that has a sufficient level of demand to allow scope for:
  - — wide-ranging research
  - — gathering and using both primary and secondary sources
  - — detailed analysis of data
  - — detailed processing of data
- Candidates should produce a **plan** which must include an appropriate:
  - — location to carry out the research
  - — research methodology, including sampling
  - — fieldwork technique(s) for the chosen topic
  - — timing for the research
- In their **plan** candidates should **identify** appropriate but different processing techniques that could be used to present findings from their research.

Applying a wide range of research methods and fieldwork techniques

Research and fieldwork

The candidate's choice of topic may use either:

- primary fieldwork sources

  or

- secondary sources

  or

- a combination of both

Group fieldwork data is acceptable. An example of this might be data collected as part of a river study. This may be better for safe working and allows a larger set of data to be collected. In their geographical study, candidates must acknowledge any data that they have collected in groups.

Fieldwork is an important part of learning and teaching. It provides candidates with the opportunity to apply appropriate fieldwork techniques and skills in physical and/or human contexts. The timing of fieldwork is important. If not timed appropriately, candidates may not have enough time to complete the course assessment write-up. This should be discussed with candidates to help them understand why time scheduling is so critical. The use of a fieldwork notebook is good practice.

Teachers and lecturers, and candidates, should follow safety guidelines when carrying out any fieldwork to ensure candidates' safety.

Physical gathering techniques

When using physical gathering techniques candidates should be able to:

- identify appropriate physical fieldwork techniques
- explain in detail the sampling technique used, to allow for the collection of valid and reliable data
- describe how the data was collected to provide relevant evidence
- record the data collected — this can be in the processed information, for example graphs, maps, tables, or diagrams and so on
- evaluate the techniques and the data, including next steps

Teachers and lecturers should encourage candidates to use appropriate websites and textbooks on how to apply physical gathering techniques.

Possible physical gathering techniques include:

Beach profile analysis

This technique involves measuring the changes in the gradient of a beach from sea level to the shore top. This may involve recognising the significant features of the beach and developing an understanding of how it may change over time.

Micro-climate analysis
This technique is used to measure:

- wind speed and direction — use an anemometer and a weather vane (use a compass and Beaufort scale if these are unavailable)
- temperature, relative humidity and light level — use a thermometer, hygrometer and light meter
- precipitation — use a rain gauge and recording sheet

Pebble analysis
This technique is used to measure the size, shape and rock type of pebbles within a prescribed area, for example:

- pebble angularity — several samples taken across the width of a river and compared to a pebble size table
- pebble size — use calipers to measure the axis proportions

Slope analysis
This technique is used to investigate the differences in variables along a slope transect, for example:

- humus depth — cut soil profiles into slope transect and record humus depths
- acidity — use pH measuring paper or a digital pH measurer

Soil analysis
These study techniques measure the properties of a soil sample:

- pH — use either an electronic meter or the test tube and indicator solution method, where a soil sample is mixed with barium sulphate, pure water and pH indicator solution, and compared to a pH chart
- temperature and moisture — use temperature and moisture probes. Alternatively, take a soil sample in a sealed plastic bag and find the moisture content by weighing, drying out in an oven, and then re-weighing
- soil profile — dig a section out of the soil so that the different horizons can be seen. Write descriptions of the structure, texture, organic content, colour and depth of each horizon

Stream analysis
These techniques are appropriate to studying how the physical properties of a river and its channel vary along its course, for example:

- river depth — use a meter ruler or ranging pole and take measurements at regular 30cm to 50cm intervals (depending on the channel size). Can be used to build cross section graphs
- river width — stretch a tape measure taut across the river at 90 degrees to the channel. The start and finish points of the tape will depend on whether the river is being investigated at its existing level or in high spate. Measuring at the vegetation line can show this variation

- wetted perimeter — measure the wetted perimeter by stretching a heavy chain, rope or measure tape across the river bed from one bank to the other. Can be used to establish discharge levels from cross section area graphs
- flow rate — either use a flow meter or a floating object such as an orange to record the time taken for the object to travel over a set distance: speed equals distance over time

Vegetation sampling
This technique is used to determine the amount and variety of vegetation in a prescribed area, for example:

- vegetation amount — a quadrat, randomly thrown, and number of species per square, recorded as a percentage of the total
- vegetation type — a camera is useful, or plastic bags to store samples for later identification

Human gathering techniques
When using human gathering techniques candidates should be able to:

- identify appropriate human fieldwork techniques
- explain in detail the sampling technique used, to allow for the collection of valid and reliable data
- describe how the data was collected, to provide relevant evidence
- record the data collected — this can be in the processed information, for example graphs, maps, tables or diagrams
- evaluate the techniques and the data, including next steps

Teachers and lecturers should encourage candidates to use appropriate websites and textbooks on how to apply human gathering techniques.

Possible human gathering techniques include:

- **environmental quality survey**
  - — use a decibel meter to measure noise levels (free apps are available)
  - — use a perception study to record levels of air quality
  - — use a camera to record levels of graffiti, litter and vandalism
- **interview design and implementation**
  - — interviews are more focused and flexible than questionnaires. Candidates can ask open-ended (rather than closed) questions, giving respondents the opportunity to give their opinions without being limited by option boxes. Interviews can pursue more interesting points and can adapt to the conversation
- **pedestrian survey**
  - — use a recording sheet and ‘click’ counter to record pedestrian numbers at selected sites. Consider site selection and time of day

- **perception studies**
  - — use mental maps or perception surveys to examine and compare people's perceptions of, for example, a suburban environment or the limits of their neighbourhood, gathered largely through questionnaires and interviews
- **questionnaire design and implementation**
  - — questionnaires are where the opinions of a group or groups of people are relevant. They can gather information about the people (for example a survey to investigate the characteristics of a group); information about patterns and processes (for example the sphere of influence of services for shoppers or commuters); or information about opinions and behaviour
- **rural land-use mapping**
  - — use Ordnance Survey (OS) maps and land-use records to map land uses for making choropleth maps
  - — interview farmers for details on changes in land use
  - — consult older maps for evidence of change in the landscape
- **urban land-use mapping**
  - — use OS maps and land-use mapping keys (RICEPOTS) to record land use, building height and quality
  - — use recording sheets to record environmental quality surveys, interviews and questionnaires
  - — use decibel meters (readily available as free apps) to measure noise pollution
- **traffic survey**
  - — traffic counts require a timer. Record outbound and inbound traffic, time at standstill, and various vehicle types. Consider location choice and time of day

The table which follows shows possible combinations of gathering techniques. In the geographical study, candidates are expected to link the techniques with the underpinning geography. This is part of the skills, knowledge and understanding for the course assessment, for example comparing with models, relating to literature, and changes over time.

			Possible combinations of contextually-appropriate or complementary gathering techniques									
Skill area	**Skill sub-area**		Slope study	Beach study	River study	Pebble size	Perception study	Urban transect	Vegetation study	Sphere of influence study	Micro-climate study	Land-use change study
Gathering and processing techniques	Physical	Beach analysis		X		X	X		X			
		Micro-climate analysis		X				X	X		X	
		Pebble analysis		X	X	X						
		Slope analysis	X	X		X			X			
		Soil analysis	X	X			X		X			
		Stream analysis			X	X						
		Vegetation analysis	X	X					X			
	Human	Environmental quality survey						x				
		Interview design and implementation										X
		Pedestrian survey						X		X		
		Perception studies						X			X	X
		Questionnaire design and implementation								X		X
		Rural land-use mapping						X	X	X		X
		Urban land-use mapping						X		X	X	X
		Traffic survey						X		X		

Applying an appropriate statistical technique in a geographical context

Processing techniques

Candidates may use statistical techniques in a geographical context if appropriate to the data collected.

Teachers and lecturers should encourage candidates to use appropriate websites and textbooks on how to apply statistical techniques.

Possible statistical techniques include:

Descriptive statistics

- **measures of central tendency**
  - the **mean** is the average where all the values are added up and then divided by the number of values
  - the **median** is the middle value in the list of numbers. For example, to find the median of (13, 20, 11, 16, 15, 9, 25), put them in order (9, 11, 13, 15, 16, 20, 25). The middle number is 15, so the median is 15 (if there are two middle numbers, average them)
  - the **mode** of a set of numbers is the number that occurs most often. For example, in the set (2, 3, 5, 3, 9), the mode is 3 because there are two number 3s and only one of each of the others
- **measures of dispersion**
  - **range** — the difference between the lowest and highest values. In (4, 6, 9, 3, 7) the lowest value is 3, and the highest is 9, so the range is 9 − 3 = 6
  - **interquartile range** — the lower quartile is the median of the lower half of the data set. The upper quartile is the median of the upper half of the data set. The interquartile range is the spread of the middle 50% of the data values. This is useful for adding rigour to statistical analysis
  - **standard deviation** — the standard deviation is a measure of how spread out numbers are. Using the standard deviation is a way of knowing what is normal or typical, and what is at either extreme
  - **standard error of the mean** — this quantifies how accurately the true mean of a population or other data set is known
  - **coefficient of variation** — this is a useful statistic for comparing the degree of variation from one data series to another, even if the means are drastically different from each other
- **inferential statistical testing**
  - **chi squared analysis** — determines whether there is a significant difference between the expected frequencies of a data set and the observed frequencies in one or more data set categories. For example, in observing two different shell types along a dune transect, it can determine whether the observed pattern is significant
  - **linear regression analysis** — observes the change in variable *y* in relation to the magnitude of variable *x*. Good for measuring the strength of a relationship
  - **nearest neighbour analysis** — a method for searching for order in settlement or other patterns in the landscape. Attempts to measure the distributions according to whether they are clustered, random or regular

- **Spearman's rank correlation coefficient** — a simple and effective way to find the strength of a relationship or correlation
- **Pearson's product moment correlation coefficient** — another method of finding the strength of a relationship but is more accurate than Spearman's

Applying an appropriate mapping technique in a geographical context

Mapping techniques

Candidates may use a map or map-based technique in a geographical context if appropriate to the data collected.

Teachers and lecturers should encourage candidates to use appropriate websites and textbooks on how to use map or map-based techniques.

Possible map or map-based techniques include:

- annotated diagram or overlay — a comparative method of displaying information such as changes in household income and house price
- choropleth map — areas are shaded or patterned in proportion to the measurement of the value being shown on the map, for example population density or per-capita income
- cross sections — show a feature such as a meander, sand dune, or mountain in section, as if sliced in two
- dot map — (sometimes referred to as a dot density map) uses a dot(s) to show the presence of a feature(s) or value(s). Dot maps rely on a visual scatter to show spatial pattern
- flow line map — shows movement of objects or systems from one location to another, for example migration numbers or import and export trade balances
- isoline map — shows spatial distributions
- proportional symbols map — uses simple symbols (usually a circle or square) and changes their proportions relative to the data value found at that location
- sphere of influence map — shows the area of influence of a factor such as number of tourist visits or distance commuted relative to a reference point on the map
- transects — a straight line drawn across a photo or map against which values, distributions, patterns, observations and measurements can be shown

Guide to using a data-handling technique

This is a simple guide to the basic steps needed to complete a data-handling technique. Candidates should identify various sources of appropriate and valuable data, and then process and interpret this information in a manner which addresses their hypothesis. This might involve using a variety of data sets, processed techniques and statistical skills to reach reasoned conclusions.			
Skill area	**Skill sub-area**		**Boulder size study** **Hypothesis:** boulder size decreases in size and angularity progressing downstream **Null hypothesis:** there will be no relationship between distance downstream and boulder size
Geographical data handling The form of data handling, presentation and statistical testing are variable factors which will only become apparent as the question is developed.	Handling different data types	Nominal	This data can be assigned a value where the value given is just a label — useful for correlations and therefore Spearman's and Pearson's can easily be applied.
		Ordinal	
		Interval	
	Sampling methods	Random	
		Regular	
		Stratified	Stratified gathering would allow dangerous areas to be avoided, and more selective data sets to be gathered.
	Graphical presentation of data	Systems diagrams	
		Logarithmic graph	
		Kite diagram	This would show how boulder size varies in range against distance downstream.
		Scattergraphs	
		Polar graph	
		Triangular graph	
		Dispersion diagrams	
		Bipolar analysis	
		Map or map-based diagram, for example: ♦ annotated overlay ♦ choropleth map ♦ cross section ♦ dot map	A transect map allows representation, using a variety of graphic techniques, of how boulder size and angularity vary along the profile of a stream.

		♦ flow line map ♦ proportional symbols ♦ sphere of influence ♦ isoline map ♦ transect	
	Descriptive statistics	Measures of central tendency	
		♦ mean	
		♦ median	
		♦ mode	
		Measures of dispersion	
		♦ range	
		♦ interquartile range	This would allow assessment, in further detail, of the dispersal of boulders as shown on a kite diagram and could be used in combination with standard deviation.
		♦ standard deviation ♦ standard error of the mean ♦ coefficient of variation	
	Inferential statistical testing	Chi squared	If two pebble types were identified as typical to the bedload then their populations could be easily compared for their statistical dispersal downstream using this statistical technique.
		Linear regression	
		Nearest neighbour	
		Spearman's rank correlation coefficient	This can be used to assess the correlation between boulder size and variables such as distance of stream velocity.
		Pearson's product moment correlation coefficient	As with Spearman's — though with greater accuracy as it takes advantage of larger data sets — regular sampling done earlier in the investigation may suit this more.

How topic choice might affect choice of suitable techniques

Topics for research	Physical or human gathering technique	Sampling to gather valid and reliable data	Explanation of how technique will provide valid and reliable data	Detailed description of the application of the techniques and/or gathering process	Appropriate statistical techniques to process data and/or information	Appropriate mapping techniques to process data
River study	Stream analysis focusing on boulder size analysis	Boulder size	Will provide accurate mean boulder sizes and angularity along river transect length	At regular intervals boulders can be sampled across the width of the stream, using calipers for exact results	Chi squared would be able to compare populations of angular and sub-angular samples, or pebbles of different types. Pearson's product moment correlation coefficient can establish a correlation between distance downstream and pebble size.	Stream ordering Transect cross sections Scatter plots to show correlations

Project–folio: geographical issue

This allows candidates to develop critical thinking, and the ability to critically evaluate viewpoints using evidence from a wide range of sources relating to complex, current geographical issues.

Teachers and lecturers should encourage candidates to engage in background reading to support their work, and should support them with appropriate learning and teaching experiences.

Suitable issues to critically evaluate

The critical evaluation is based on viewpoints expressed in the sources and requires candidates to reach a conclusion. It is therefore practical to base the issue on a question or opinion.

- Candidates must choose their own topic to evaluate and choose relevant and appropriate sources.
- Candidates need to identify and select sources.
- Centres should note that there is no requirement to base the issue on any particular content, although it should have a clear geographical link, be current, and of a suitably complex nature.
- Issues of a local nature are useful as candidates may have a knowledge of the issue, but they should take care not to be influenced by personal opinion, as this can distract from the critical nature of the evaluation.

Suitable sources for critical evaluation

There is no specified length required for a source; however candidates should be careful not to select sources that are too short or are overly complex or lengthy. Information could be interpreted from different sources including visual, graphical and numerical. While the audience for which the sources are intended is important in relation to the evaluation of the source, it should be of a suitably complex nature.

Candidates should check the department, school, local library and websites for relevant journals, reference magazines and newspaper articles which could provide sources or background reading. While the sources should be up to date, their exact length or duration will depend on the issue being investigated, and candidates may refer to this in their critical evaluation if appropriate. Journals would normally be peer-reviewed but centres and candidates should not be under pressure to subscribe to or buy articles to fit with an issue. The term ‘expert’ does not rely solely on academic qualifications, and other sources of information will be as valid as peer-reviewed content; candidates can comment on this in their evaluation.

A large amount of suitably complex information which is of reasonable length can be located though the Open University website.

How to summarise sources

The geographical issue must include summaries of the main viewpoints from at least three sources.

Sources should:

- be relevant to the topic
- contain sufficient detail and be of sufficient length to allow for summary
- give a range of viewpoints

The viewpoints could come to the same conclusion but the arguments may be based on very different criteria. These need not be 'for' or 'against' but should have sufficient controversy to allow candidates to evaluate them and to reach a conclusion.

Candidates should ensure that their summaries:

- stay relevant to the topic
- cover the three viewpoints
- are of sufficient detail and length to show a good understanding of the individual viewpoints

How to evaluate sources

In evaluating each of the viewpoints on the issue, candidates should ensure their response refers to:

- the degree of balance within the source
- the credibility of the content within the source
- the degree of credibility of the author or the publisher

Reaching a conclusion on the issue

In reaching a conclusion on the issue, candidates:

- should use relevant evidence from all three sources and viewpoints
- may identify arguments:
  - for the issue
  - against the issue
  - from a selection of responses 'for' and 'against'

The conclusion need not be original, nor represent the candidate's own personal view.

Preparing for course assessment

The course assessment focuses on breadth, challenge and application. Candidates draw on and extend the skills they have learned during the course. These are assessed through the project–folio, and through one question paper which covers map interpretation, gathering and processing techniques, and data handling.

In preparation for the course assessment, candidates should have the opportunity to:

- consolidate their knowledge and understanding of geographical content and processes
- apply knowledge and understanding to new areas, topics and contexts
- select and apply appropriate OS mapping skills
- apply geographical skills to new areas, topics and contexts
- practise interpreting data, graphs and processed information
- identify the command words and key words in questions

The question paper assesses a sample of knowledge and skills developed in the course and provides opportunities to apply skills and knowledge in a wide range of contexts, which may be new to candidates. Prior to the course assessment, candidates may benefit from responding to past paper questions.

The project–folio allows candidates to apply the skills they have developed in the course to a real-life situation which interests them.

In addition to the course specification, the following documents provide further information on course assessment:

- specimen question paper and marking instructions
- project–folio assessment task

These materials are available on SQA's website, and should be referred to when planning for course assessment.

Supporting candidates to research a topic for the geographical study and/or geographical issue

This section helps support candidates to further develop a wide range of independent research skills.

It allows candidates to develop independent research skills by providing guidance in:

- identifying an appropriate, complex topic for the study and/or issue to research
- planning a programme of research
- researching, collecting and recording information
- analysing, evaluating and synthesising information or evidence
- understanding approaches to organising, presenting and referencing findings in an appropriate geographical style

The following guidance relates to each of these skills and processes. This advice is intended as general guidance only, and teachers, lecturers, and candidates should refer to the Advanced Higher Geography course specification for subject-specific information.

Identifying an appropriate, complex topic to research for the geographical study and geographical issue

A complex topic for the geographical study or issue requires analysis of data or information and making judgements, rather than undertaking a simply descriptive approach. The topic identified might be worded as a question, statement, or a description of the area of study, and should be complex enough to challenge candidates to provide a convincing overall conclusion(s) to the questions raised in the area of research.

An appropriate complex topic allows candidates to investigate different perspectives, opinions or points of view. For some topics this may mean significant differences of opinion — including major differences in the interpretation of data, issues, events or developments.

It is likely that a complex topic will give rise to a number of additional questions or related issues, which will need to be considered in order to reach an overall conclusion. These might develop as the candidate reads more widely about their chosen topic. Providing good synthesis of research materials and well-developed analysis of information to reach an appropriate judgement(s) is an important feature of a well-developed piece of research.

Candidates might approach topics which involve analysis, evaluation and synthesis by posing one or more of the following questions, although these approaches are not the only ways to do this, and this is not an exhaustive list:

- What is the current relevance or importance of the topic?
- What data or information do I need to collect?
- How important is some data or information?
- To what extent does …?
- How far does or should …?
- How justified is this view?

- How important a part …?
- Which (pieces of information) better explain …?

Candidates can generate evidence of how they approached the task of identifying their topic. For example, they could produce a checklist, indicating the chosen topic and describing the process of choosing it. They could provide a short explanation to justify the topic selected.

Planning a programme of research

Once the topic has been agreed, the candidates should begin planning a programme of research. This could include a variety of steps, such as:

- developing wider knowledge of any content, context or information, through wider background reading or web-based information, relevant to the chosen topic
- making decisions about the way(s) in which the chosen topic will be researched
- identifying a suitable range of resources for the topic
- planning timescales for each part of the researching process
- agreeing key deadline dates for the completion of the different stages involved in researching the topic

Developing further knowledge of contexts relevant to the chosen topic

This involves wider background reading, for example a textbook, online resources, newspaper articles, chapters or articles from journals, or other similar sources. Teachers or lecturers can help candidates identify suitable background reading at this early stage, as well as helping them plan a timescale for completing the research.

Making decisions about the way in which the chosen topic will be researched

Candidates should consider a sensible range of data, information, factors, views, or outcomes. If candidates concentrate on a narrow set of data, information, factors, views, or outcomes, they should make sure they do not exclude alternative data or information.

Candidates may find it helpful to construct a mind map or other diagram of possible questions or issues at this stage. Alternatively, they could discuss the chosen topic with peers or through a brainstorming session during which they might contribute possible alternative approaches or interpretations, or ideas. These approaches can prove useful in suggesting how questions or issues relate to each other and to the overall topic chosen.

To ensure that the approach taken is sufficiently in-depth, it may be useful for candidates to plan how many questions or issues, or headings are in the final plan. Teachers or lecturers can give candidates advice about which information to include or reject, and help with critical thinking skills. Teachers and lecturers can discuss with candidates why they are using or rejecting particular points or information.

Good planning is essential to researching the chosen topic as it provides a structure for collecting information. However, once candidates start their research, changes to the plan may be necessary, for example if new evidence or information emerges or they wish to change the focus of their research. This should be seen as an important part of planning a

programme of research, and candidates should recognise that this need to amend elements of any original plan is a valid aspect of almost all independent research.

Sources of information often refer to the views or evidence cited or referred to by other sources or authors. Noting references to these may help candidates understand more about different interpretations of information, and help them develop a good analysis and conclusion at a later stage.

Checks on progress could take the form of a discussion between candidates and teachers or lecturers, or individual presentations to the group of candidates. In any discussion of progress made, it may be helpful to make sure that candidates are using evidence analytically and that a good structure is emerging.

Possible ways of generating evidence

Candidates can generate evidence of how they approached planning in a variety of ways. Candidates could use a copy of their notes as evidence of researching, collecting and recording information. Recording a detailed list of sources consulted may also help candidates provide evidence for this stage of the process.

Researching, collecting and recording information

Candidates might find it helpful to focus research on one aspect of their chosen topic at a time, rather than attempting to research, collect and record information relating to the whole topic at the same time.

For example, where the chosen topic involves reference to a particular data set or a range of factors, candidates may choose to start with research focused on this aspect of the topic. Researching one aspect at a time can help to break the task up into more manageable sections and helps them to review their progress. Candidates could keep a progress record to help them support this process.

Once they have identified a starting point, candidates should decide how best to record the information they have gathered. Typed or handwritten notes are the most straightforward way of doing this. Although candidates may have had some previous experience of collecting and recording information, teachers and lecturers should emphasise that it is good practice to:

- use the list of contents or index in any textbooks to identify sections relevant to the topic being studied
- carry out initial reading or web-based research to identify the most important and relevant material(s)
- be aware that many writers (particularly in academic journals) summarise their arguments at the end of a section or chapter — alternatively, their views may be outlined in the introduction or in the conclusion to the book or article
- be aware that many writers cross reference their work with other writers

Candidates could complete a simple task by following the steps outlined in the list below to become familiar with different sources of information and how sources are recorded or listed

(bibliographies). Teachers or lecturers could provide candidates with a short guide about conducting research and observing ethical standards in research to help them understand the importance of acknowledging sources and/or using sensitive information.

There is no single way of collecting and recording information but candidates may find the following advice useful:

- Note the author and title of the book or article being consulted. If it is a published work, record the date of publication.
- If the information is from a web-based source, note the URL and the date of access.
- Summarise relevant factual evidence briefly, noting page references. By summarising, rather than quoting directly, candidates save time and avoid unintended plagiarism. Similarly, there is no need to write in sentences — abbreviations can speed up the note-making process.
- Record statements of the author's views by using phrases such as:

  'According to Singer, 2012 "…".'
- Limit the recording of **brief**, direct quotations to a few words or phrases. Lengthy quotations are unhelpful. Note the page references or the location of web-based sources for views or quotations to help referencing at a later stage.
- Writers for academic sources often refer to the views or evidence cited by other academic sources. Noting references to these may help candidates understand more about different academic or scientific interpretations, and help them to develop a convincing explanation or analysis at a later stage in their research.

Possible ways of generating evidence

Candidates can generate evidence of how they approached researching, collecting and recording information in a variety of ways, such as noting how they used background reading or web-based sources. This is a potential way to develop the skills of critical analysis, evaluation and synthesis. Keeping a literature review table or record can help candidates group together resources which address the same topic. The issues and themes emerging from the literature can be recorded and act as a framework for their research.

Analysing, evaluating and synthesising evidence for a topic

Analysis, evaluation and synthesis involves candidates considering a range of information to identify patterns, trends, exceptions, and so on. Pictures, maps, tables of statistics and written sources may all be relevant, and candidates should look closely at these to pick out what is relevant to the chosen topic.

It is important that, having analysed the information and identified the relevance of viewpoints presented in the sources, candidates make a critical evaluation of the details they have collected. This includes evaluating the validity of the information presented and making a judgement on how to interpret the viewpoint(s) in the sources.

When using and reviewing sources it may be helpful for candidates to take the following points into account:

Identifying a suitable range of resources

- Researching an appropriate topic at Advanced Higher level should involve a wide range of academic and other reading, and it is therefore important that candidates plan ahead to ensure that the resources needed are available when they need them. The starting point is likely to be resources held within the geography department, but school, college and public libraries may also be able to help candidates to access resources. Some university libraries also provide reference facilities to Advanced Higher candidates.
- Sources might include print or web-based journals or newspapers, press articles or press releases and blogs.
- For some topics there are many published works and candidates may need teacher or lecturer guidance to help them select appropriate reading. Candidates may also need help or advice to distinguish between school textbooks (or books written for the general reader) and those written by academics with specialist knowledge of the topic. Candidates should consult a wide range of academic work. They should be able to recognise that different approaches and perspectives on topics may involve slightly different interpretations of contexts or ideas, requiring careful reading.
- Researchers and authors use a wide variety of research methods to create new information and candidates should be aware of some of these differences, for example the differences between qualitative and quantitative data. Research methodology also shapes thinking, so candidates should try to ‘think like’ or ‘think within’ this particular piece of research. This allows candidates to become critical users of specific pieces of information.

Possible ways of generating evidence

Evidence of analysis, evaluation, and synthesis can be generated in a variety of ways. Candidates should try to keep a log or other record as they go through the process of analysis, evaluation and synthesis. Evidence of this process will vary depending on the topic candidates have chosen, and they may need some teacher or lecturer guidance to help them decide on the best method(s) for this. They should record sources they use in the process, including the author, page references, publisher and publication date.

Understanding approaches to organising, presenting and referencing findings, in an appropriate geographical way or style

A critical skill is to understand how findings should be presented in order to be clear, reliable, and reflect a relevant geographical style. There is no single way to achieve this and candidates should consider different possible approaches to organising and referencing their work.

Organising

A key issue in communicating the ideas candidates have analysed, evaluated, and synthesised from their research is to be able to structure their findings appropriately. This normally involves laying out issues relevant to the question(s) posed in their geographical

study and issue in a logical manner, developing a clear line of argument, leading to a conclusion, supported by the evidence they have gathered. This might include:

- matters of detail raised by the geographical study or issue
- alternative interpretations that have been produced by different viewpoints
- detailed analysis of particular pieces of evidence, data or information that have a substantial bearing on the geographical study or issue
- a wide-ranging consideration of all aspects of the geographical study or issue

Presentation and layout

Candidates should consult teachers or lecturers for information about the specific ways of presenting information, appropriate to the subject in question. Candidates should refer to any relevant subject-specific information on the topic of research given in the Advanced Higher Geography course specification.

In presenting their geographical study and geographical issue, candidates should consider the following guidance:

- writing should be presented on A4 single-sided pages
- a consistent referencing system should be used throughout
- main text should use a standard font
- font size for the main text should be 12pt; titles or headings may be larger
- text contained in diagrams may be smaller or larger, but must be legible
- line spacing should be 1.5 cm
- left and right margins should be 2.5 cm
- direct quotes from the literature or primary sources can be indented, single-spaced, and separated from the main text with a small gap
- consistent formatting for headings and subheadings should be used, for example same font, bold, italics
- page numbers should be inserted on each page

Word count

Both parts of the project–folio have defined word limits. The geographical study should have no more than 3,000 words and the geographical issue should have no more than 1,800 words. However, candidates might consider that a well-produced study would not normally exceed 25 A4 pages, and a well-produced issue would not normally exceed 12 A4 pages.

If a study and/or issue is judged to be over the word limit, it will be referred to the principal assessor. If the word count exceeds the maximum by more than 10%, a penalty is applied.

References

- Candidates should understand how to use an appropriate referencing system or convention.
- Candidates should be accurate in their references.

- All quotations should be referenced.
- Specific facts such as statistics should usually be referenced unless they are commonly used in all books on the subject.
- If a paragraph is based in its entirety on one book, then that should be referenced, even if there is no direct quotation.

The style of referencing can be the straightforward one of: author, date, *title*, page number, publisher, for example:

- Gillespie, R. (2011) *Critical Navigation Skills*, p93, Hodder Education

Candidates may use the conventional *ibid* and *op cit* as appropriate.

Candidates should ensure that their research findings are accompanied by a bibliography. As with references, learning how to construct and present a proper bibliography is part of a candidate's development. The bibliography should be a genuine note of all sources used. It is important that the author's name and the title are entered correctly. The date and publisher should also be included.

Most university websites have advice on setting out a bibliography. Some well-known standard formats include Harvard, MLA and APA. Candidates should use a standard referencing system that is appropriate to their subject area and topic, and be consistent in the format they use.

Websites should be recorded in the bibliography. Web pages should be listed, with the dates on which they were accessed. This is important because websites are frequently updated.

Agreeing key deadline dates for the completion of the different stages involved in researching the study and issue

Candidates may find the process of researching independently a challenging task. Therefore it may be helpful for teachers, lecturers and candidates to agree dates at which progress can be reviewed.

Key dates might include:

- selection of a topic for the geographical study and geographical issue
- completion of a plan for researching the study and issue
- review or discussion of the evidence collected and recorded

Question paper

Format of the question paper

Question papers have two or three questions.

The following three skill areas are always included in the question paper:

- map interpretation (20 marks)

- gathering and processing techniques (10 marks)
- data handling (20 marks)

The mark allocations for these are always as stated in the course specification. However, questions within the paper may focus on one particular skill area, or they may integrate more than one skill area, so over time the format of the paper will vary.

The following table illustrates possible models for the structure of the paper:

Model 1	Q1: map interpretation (20 marks)	Q2: gathering and processing techniques (10 marks)	Q3: geographical data handling (20 marks)
Model 2	Q1: map interpretation (20 marks)	Q2: gathering and processing techniques and geographical data handling (30 marks)	
Model 3	Q1: map interpretation and gathering and processing techniques (30 marks)		Q2: geographical data handling (20 marks)
Model 4	Q1: map interpretation and gathering and processing techniques (25 marks)	Q2: gathering and processing techniques and geographical data handling (25 marks)	

Developing skills for learning, skills for life and skills for work

Teachers and lecturers should identify opportunities throughout the course for candidates to develop skills for learning, skills for life and skills for work.

Candidates should be aware of the skills they are developing and teachers and lecturers can provide advice on opportunities to practise and improve them.

SQA does not formally assess skills for learning, skills for life and skills for work.

There may also be opportunities to develop additional skills depending on the approach centres use to deliver the course. This is for individual teachers and lecturers to manage.

1 Literacy

1.1 Reading

Throughout the course, and while undertaking the project–folio, candidates have the opportunity to develop reading skills. They may read a variety of texts, including academic journals, newspaper reports, and online articles. This helps candidates develop their skills to read critically; evaluate the ideas contained in written sources; draw conclusions with justification; construct arguments in a balanced and structured way; and express reasoned views about the texts they study. This, in turn, further develops their ability to understand and use a wide range of evidence on contemporary issues.

Candidates may also have the opportunity to develop listening and talking skills, for example through the use of debating, discussion groups or visits from subject experts.

1.2 Writing

The course provides considerable opportunities to develop writing skills. Teachers and lecturers should encourage candidates to undertake extended writing wherever appropriate. For example, the requirements to apply knowledge and understanding about a range of geographical issues and being able to adopt a comparative approach provides an ideal opportunity for candidates to develop the skill of extended writing.

2 Numeracy

2.3 Information handling

Throughout the course, and while undertaking the project–folio, candidates have the opportunity to develop numeracy and information-handling skills. They are required to use a wide range of numerical geographical data about a variety of topics, for example population, woodland coverage and river velocity. Candidates interpret and construct detailed graphs and maps.

Candidates interpret and analyse a given set of data, including statistical data, to evaluate any techniques used and their effectiveness, in order to explain geographical relationships.

4 Employability, enterprise and citizenship

4.6 Citizenship

Candidates develop citizenship through deepening their understanding of issues facing contemporary society. They have to apply their knowledge and understanding of factual elements of social, economic and geographical issues and topics. They have to link these with underlying theoretical or abstract ideas which requires a greater depth and detail of understanding.

5 Thinking skills

5.3 Applying

5.4 Analysing and evaluating

Candidates apply their knowledge and understanding of factual elements of economic, social and geographical issues and questions. They are required to link these with underlying theoretical or abstract ideas which require a greater depth and detail of understanding. This enables candidates to explore challenging abstract ideas by engaging with a wide range of source material, and both evaluating and synthesising information. This depth of study enables them to engage fully with the subject matter.

This course allows candidates to use different sources of information, including academic literature, scientific sources, print or online articles and blogs. Teachers and lecturers should direct more able candidates to more complex, and potentially richer, sources of information.

Administrative information

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History of changes

Version	Description of change	Date
2.0	Course support notes added as appendix.	September 2019

Note: please check SQA's website to ensure you are using the most up-to-date version of this document.