



Course Report 2017

Subject	Environmental Science
Level	National 5

The statistics used in this report have been compiled before the completion of any Post Results Services.

This report provides information on the performance of candidates which it is hoped will be useful to teachers, lecturers and assessors in their preparation of candidates for future assessment. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published assessment documents and marking instructions.

Section 1: Comments on the Assessment

Summary of the course assessment

Component 1 — question paper

The paper contained a balance of both challenging and more accessible questions. The vast majority of questions performed as expected, and as a result, there was no need to alter grade boundaries.

The vast majority of candidates were able to access all of the paper, and very few questions were missed out.

A minority of candidates did not attempt two essay questions.

Component 2 — assignment

As with last year, performance continues to be on an upward trend compared to previous years.

Centres had prepared candidates well for this component. Many centres were presenting for the first time this year, so it was encouraging to see that the standard of this component had improved from the previous year.

Overall, most candidates had a clear understanding of what was required, particularly in terms of layout and organisation of their reports. More candidates are presenting their report using headings and had structured their report in a logical manner.

In a number of centres, candidates had studied identical topics, which is acceptable as long as each candidate has clearly produced work that is unique. However, there was evidence that a small minority of candidates seemed to have been over-directed in the guidance that they had received.

A significant number of candidates were unable to access all the marks available because of their ability to express their thoughts in writing. Literacy levels proved to be a barrier to accessing some marks, particularly where an extended explanation was required — for example, describing application, effect and underlying environmental science.

Section 2: Comments on candidate performance

Areas in which candidates performed well

Component 1 — question paper

Q1 (a) – Q1 (b) (i)	These opening questions are designed to allow the candidates to settle. Most candidates were able to access these marks.
Q2 (a), Q2 (b) (i), Q2 (b) (ii) and Q2 (d) (i)	These questions covered economically important crops, abiotic factors and interpretation of the temperature and humidity table.
Q3 (c) (i) and Q3 (d)	These questions involved describing the trend of oil and gas reserves and using the information provided to ascertain the order of fractional distillation. It had been anticipated that these questions would be accessible to the majority of candidates.
Q8 (c) (ii)	This question, which involved providing an example of a renewable energy resource, was the one with the most correct responses in the question paper.

Component 2 — assignment

- ◆ Most candidates stated an appropriate aim.
- ◆ Most candidates stated an application and effect, although markers reported that the application and effect weren't always clearly expressed or differentiated.
- ◆ Most candidates demonstrated knowledge of underlying environmental science, although for some it did not meet the depth of detail required at National 5.
- ◆ Most candidates could select relevant information.
- ◆ Most candidates could present their selected data in alternative and appropriate formats.
- ◆ The majority of candidates provided references in sufficient detail.

Areas which candidates found demanding

Component 1 — question paper

Q1 (b) (ii), 6 (a)	In general, where questions required recall of definitions, candidate performance was poor.
Q1 (d) (i), Q3 (c) (ii), Q9 (c)	Calculation of percentages or percentage change proved to be challenging for a significant number of candidates. Some candidates avoided these types of questions.
Q7 (c)	Questions requiring recall about environmental legislation again proved to be very challenging.
Q1 (c)	Candidates struggled with the role of detritivore.
Q2 (b) (ii)	Candidates knew the instrument, but did not clearly describe the procedure, and very few were able to provide an answer for reliability.
Q3 (b) (ii)	There was little description of porosity. The concept was only fully comprehended by a minority of candidates.
Q4 (a)	' Enhanced greenhouse effect' was required to gain the mark. A significant number of candidates responded with 'greenhouse effect'.

For the extended response questions, although some candidates prepared thoroughly, others wrote superficial answers scoring minimum marks.

Component 2 — assignment

- ◆ Some candidates selected topics that, whilst appropriate, did not always allow them to easily identify the application — for example, invasive species.
- ◆ Some candidates selected data that did not directly address the aim.
- ◆ Some candidates had difficulty in applying the terms relevance and reliability appropriately.
- ◆ Some candidates had difficulty in processing their chosen data accurately. This was sometimes due to the complexity of the data, or the degree of accuracy required reading and/or plotting graphs and compiling tables from data plotted on graph paper of an inappropriate scale.
- ◆ Some candidates had difficulty in making a suitable comparison between their chosen pieces of data/information, or failed to state that no comparison was possible as they referred to different aspects of the topic.

Section 3: Advice for the preparation of future candidates

Component 1 — question paper

Candidates should be aware that they will be asked to provide definitions of terms contained in the mandatory knowledge of the course, and should be sufficiently prepared to do so.

Calculations, particularly those involving percentages, should be practised regularly. These will always be part of the question paper, so candidates should feel confident about doing them.

Candidates should be given the opportunity to practise past paper questions or exam style questions to allow them to develop essential exam skills such as reading questions with accuracy. They need to be able to respond in an appropriate manner to commands such as 'describe', 'state' and 'explain'.

Candidates should be encouraged to show the working of their calculations — especially where the question concerned has two marks.

It was apparent that a significant minority of candidates did not have the level of ability expected of a National 5 candidate and would have been more appropriately presented at National 4 level.

Component 2 — assignment

Candidates should not be over-directed in their responses. If resource packs are provided they should include a variety of resources/data which allow candidates to demonstrate that they have independently selected and processed relevant data/information.

Teachers should not proof-read completed reports and return them to candidates for re-drafting.

Where candidates submit reports that have been electronically produced, centres must ensure that internet access is disabled during the report writing phase.

Candidates should use information gathered in the research phase to produce their report. The report should be expressed in their own words. Candidates will not be credited for information copied directly from their research materials.

Candidates should be provided with graph paper of an appropriate scale to allow markers to check the accuracy of plots.

Conclusions must relate to the aim and must be backed up by evidence in the report. If multiple aims are stated, the conclusion must address all of them.

References should be given in sufficient detail to allow them to be retrieved and checked by markers.

Whilst it was pleasing to see that the conditions of assessment for coursework were adhered to in the majority of centres, there were a small number of examples where this may not have been the case. Following feedback from teachers, we have strengthened the conditions of assessment criteria for National 5 subjects and will do so for Higher and Advanced Higher. The criteria are published clearly on our website and in course materials and must be adhered to. SQA takes very seriously its obligation to ensure fairness and equity for all candidates in all qualifications through consistent application of assessment conditions and investigates all cases alerted to us where conditions may not have been met.

Grade Boundary and Statistical information:

Statistical information: update on Courses

Number of resulted entries in 2016	194
------------------------------------	-----

Number of resulted entries in 2017	290
------------------------------------	-----

Statistical information: Performance of candidates

Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark -				
A	16.6%	16.6%	48	70
B	18.6%	35.2%	54	60
C	22.4%	57.6%	65	50
D	12.4%	70.0%	36	45
No award	30.0%	-	87	-

General commentary on grade boundaries

- ◆ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- ◆ Each year, SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- ◆ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.
- ◆ An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in, say, Higher Chemistry, this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related, as they do not contain identical questions.
- ◆ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.