



Course report 2025

National 5 Environmental Science

This report provides information on candidates' performance. Teachers, lecturers and assessors may find it useful when preparing candidates for future assessment. The report is intended to be constructive and informative, and to promote better understanding. You should read the report with the published assessment documents and marking instructions.

We compiled the statistics in this report before we completed the 2025 appeals process.

Grade boundary and statistical information

Statistical information: update on courses

Number of resulted entries in 2024: 464

Number of resulted entries in 2025: 350

Statistical information: performance of candidates

Distribution of course awards including minimum mark to achieve each grade

Course award	Number of candidates	Percentage	Cumulative percentage	Minimum mark required
A	23	6.6	6.6	87
B	55	15.7	22.3	72
C	80	22.9	45.1	58
D	97	27.7	72.9	43
No award	95	27.1	100%	Not applicable

We have not applied rounding to these statistics.

You can read the general commentary on grade boundaries in the appendix.

In this report:

- 'most' means greater than or equal to 70%
- 'many' means 50% to 69%
- 'some' means 25% to 49%
- 'a few' means less than 25%

You can find statistical reports on the [statistics and information](#) page of our website.

Section 1: comments on the assessment

Question paper

The question paper generally performed as expected. Feedback indicated that the assessment was received positively and was interesting, fair and accessible for candidates.

Some candidates appeared to have been presented at an inappropriate level, as they did not appear to be able to answer many of the questions.

Questions relating to definitions were not done well, with many candidates giving incorrect definitions and some candidates not attempting to answer these questions.

More candidates attempted to answer the extended-response questions in section 3 of the paper than in previous years. For questions 9A and 9B, most candidates attempted both parts of their chosen option. This was an improvement on previous years, where a few candidates answered just one part of the structured extended-response question they chose.

For questions 9 and 10, similar numbers of candidates selected each option of the question. Candidate responses to question 9B were slightly better than those to question 9A. Candidate responses to question 10B were better than those to question 10A.

Three questions were considered to be more challenging than anticipated — questions 5(c)(ii)(B), 8(b)(i) and 8(c)(ii). Therefore, the C-grade boundary was lowered to take account of these questions.

Assignment

Overall, most candidates had a clear understanding of what was required, particularly in terms of the layout and organisation of their reports. Most candidates studied topics that were suitable for the level. There was a greater range of topics and investigated factors evident in the assignments compared to previous years.

In a number of centres, candidates glued in a data table that included a blank column for averages with a pre-populated heading for the average, which does not meet the assessment conditions. Teachers and lecturers must check that all materials taken into the report stage adhere to the conditions of assessment detailed in the National 5 Coursework Assessment Task document.

Section 2: comments on candidate performance

Areas that candidates performed well in

Question paper

- Question 1(b)(i) Most candidates were able to name a suitable sampling technique, but few were able to describe the technique in sufficient detail.
- Question 1(c)(iii)(A) Many candidates were able to calculate the percentage of woodlice found in dark and damp conditions.
- Question 2(a)(i) Many candidates were able to identify the diagram as being a food web.
- Question 2(a)(ii) Most candidates were able to complete the food web.
- Question 2(b)(i) Most candidates were able to complete one part of the paired statement key, but only some were able to complete both parts.
- Question 2(b)(ii) Most candidates were able to identify a similarity or a difference between the Adélie penguin and the Gentoo penguin, and many were able to identify both.
- Question 3(a) Most candidates were able to describe either an environmental benefit or an economic benefit of holidaying in the UK, but only some were able to describe both.
- Question 5(b) Many candidates were able to draw a line graph to show the income generated each year.

- Question 5(d) Most candidates were able to suggest an economically important species of plant or animal, and name a resource used to make clothes from that plant or animal.
- Question 6(b)(ii) Most candidates were able to explain why the water must be left for 48 hours before use.
- Question 6(b)(iii) Many candidates were able to name a method that can be used to produce clean water in a developing country.

Assignment

1 An aim that describes clearly the purpose of the investigation

Most candidates were able to state an aim that described the purpose of the investigation clearly.

3(b) Sufficient raw data from the candidate's experimental work/fieldwork

Most candidates included sufficient raw data from their experiment or fieldwork.

3(e) Data/information relevant to the aim from an internet/literature source

Most candidates included data from an internet or literature source that was relevant to the aim of their investigation.

3(f) A reference for the source of internet/literature data/information

Most candidates included a reference for their source of internet or literature data that contained sufficient information to allow the retrieval of the data.

4(a) An appropriate format from the options of bar graph, line graph, pie chart or other display method appropriate to environmental science

Most candidates chose an appropriate format for their graph. A few candidates attempted to draw bar charts when a scatter graph or line graph was the appropriate option.

4(b) The axes of the graph have suitable scales

Many candidates produced a graph with suitable scales on the axes.

8(a) An informative title

Most candidates produced a report that had an informative title.

8(b) A clear and concise report

Most candidates produced a clear and concise report that flowed in a logical manner. Candidates had clearly followed the 'Instructions for candidates'. The use of subheadings throughout the reports aided clarity.

Areas that candidates found demanding

Question paper

Question 1(a) Some candidates were able to define the term detritivore.

Question 1(b)(i) Few candidates were able to describe their named sampling technique in sufficient detail.

Question 1(b)(ii) Few candidates were able to explain a potential source of error in their chosen technique in sufficient detail.

Question 1(c)(i) Few candidates were able to name the choice chamber from the diagram. The choice chamber is listed in the 'Apparatus and techniques' section of the course specification, and therefore candidates should be able to identify the apparatus and its application.

Question 1(c)(ii) Few candidates were able to suggest a suitable aim for the investigation.

Question 1(c)(iv) Some candidates were able to suggest how the students could have increased the reliability of their results.

- Question 3(b)(ii) Few candidates were able to state the term used to describe an awareness of the rights and responsibilities of people around the world.
- Question 3(b)(iii) Few candidates were able to name the organisation responsible for the development, adoption and support of the 17 sustainable development goals.
- Question 3(c)(i) Some candidates were able to calculate the mass of plastic not reused or recycled.
- Question 3(c)(ii) Few candidates were able to explain in sufficient detail why the process described in the question may be considered an example of a sustainable development. Candidates did not make the link between how the process meets current needs, without comprising the ability of future generations to meet their needs.
- Question 4(a)(i) Some candidates were able to name the Earth system in which limestone is found.
- Question 4(a)(ii) Few candidates were able to describe the formation of limestone.
- Question 4(b)(i)(A) Few candidates were able to name the acid formed when carbon dioxide reacts with water in the atmosphere.
- Question 4(b)(i)(B) Some candidates were able to identify the type of weathering caused by the acid.
- Question 4(c) Few candidates were able to describe a use of limestone in agriculture.
- Question 4(d) Some candidates were able to state why limestone is described as a carbon sink.
- Question 5(a)(ii) Few candidates were able to explain in sufficient detail why the gases in the question are referred to as greenhouse gases.

- Question 5(b) Although this question was generally well done, some candidates did not achieve the plotting mark. In some cases, this was because they drew a line of best fit (scatter graph) rather than joining the points with straight lines (line graph), when the data required a line graph. Candidates must know the differences between types of graphs.
- Question 5(c)(ii)(A) Some candidates were able to suggest an economic benefit of cutting the stalks as close to the roots as possible.
- Question 5(c)(ii)(B) Few candidates were able to suggest a type of organism that can be used in the retting process, despite the description in the flow chart using the term 'decompose'.
- Question 6(a) Few candidates were able to use the graph and information to identify the times between which solar water disinfection (SODIS) is most effective.
- Question 6(b)(i) Some candidates were able to state what was meant by the term indicator species.
- Question 6(c) Some candidates were able to suggest a difference in the processing and storing of water supplies between developed and developing countries.
- Question 7(a)(iii) Few candidates were able to describe the role of temperature in the formation of the different fractions.
- Question 7(b) Some candidates were able to suggest positive social impact of switching from fossil-fuel powered vehicles to electric vehicles. Many focused on an environmental impact rather than a social impact.
- Question 8(a)(ii) Few candidates were able to suggest a benefit to Sargassum of floating on the surface of the ocean.

Question 8(b)	Few candidates were able to suggest a reason why the Amazon River is nutrient rich.
Question 8(c)(ii)	Few candidates were able to suggest a conflict that may arise between a named stakeholder and the South Atlantic Fishery Management Council.
Question 8(d)(i)	Some candidates were able to state what is meant by the term biofuel.
Question 8(d)(ii)	Few candidates were able to describe the process of fermentation.
Question 8(f)	Many candidates found this question particularly challenging. They did not provide enough detail and explanation in support of their decision.

Assignment

2 An account of environmental science relevant to the aim of the investigation

Most candidates demonstrated at least a limited understanding of the underlying science for their chosen topic. Some candidates were able to demonstrate a reasonable understanding, but few were able to demonstrate a good understanding. Where the topics chosen were at too low a level, candidates struggled to demonstrate understanding at National 5 level.

3(c) Data presented in a correctly produced table

Many candidates did not present data in a table correctly. Common issues included column headings that simply said 'average' and were not covered by an overarching or spanner heading. Some candidates omitted or had incorrect units.

4(c) The axes of the graph have suitable labels and units

Many candidates were not awarded the label mark for their graph. Candidates either did not include units, used incorrect units, or had inappropriate labels for their axes.

4(d) Accurately plotted data points and a line (line graph), clear bar tops (bar graph) or angles (pie chart). Where appropriate, a line of best fit

Many candidates did not plot either points or bars accurately. This was often as a result of poorly chosen scales.

5 A valid comparison of the experimental/fieldwork data with data/information from the internet/literature source

Many candidates were unable to analyse their results by making a valid comparison between their experimental or fieldwork data and the data from their internet or literature source. Some candidates compared features of the second source, such as 'both my graph and the graph in my second source are line graphs', or differences in units or scales on the axes, rather than comparing data or findings.

6 A valid conclusion that relates to the aim and is supported by all the data/information in the report

Most candidates did not state a valid conclusion that was supported by all of the data in their report. Often, candidates did not address all aspects of their aim, and/or did not reflect the data from both their experimental work or fieldwork and the data from their internet or literature source. Some candidates concluded using only their experimental or fieldwork data, and a few concluded using only their secondary-source data. Where the data from the sources conflict, candidates should ensure that their conclusion reflects this.

7 An evaluation of the experimental/fieldwork procedure

Some candidates were able to identify a factor that could be expected to have a significant effect on the reliability, accuracy or precision of the experimental work or fieldwork. However, few candidates were able to explain what could have been done

to minimise the effect of the identified factor, or what was done to minimise the effect of the identified factor, or the evidence supporting the identification of the factor.

Some candidates opted to evaluate their performance, enjoyment and learning of the topic, for example, 'I really enjoyed doing my assignment.' Candidates must explain how a named factor had a significant effect on the reliability, accuracy or precision of the experimental work or fieldwork.

Some candidates stated that they would repeat measurements to improve reliability. However, as candidates are instructed that they must repeat measurements, this is not a valid evaluative statement.

Section 3: preparing candidates for future assessment

Centres are reminded that National 5 Environmental Science is a practical course that requires candidates to develop the knowledge and skills associated with practical work and fieldwork. Candidates **must** be given the opportunity to undertake a wide range of practical work and fieldwork to develop the knowledge and skills detailed in the National 5 Environmental Science course specification.

Question paper

Teachers and lecturers are encouraged to incorporate the command words used in exam questions into teaching at an early stage. It would be particularly important to cover the difference between 'describe' and 'explain'.

Teachers and lecturers should continue to familiarise and expose candidates to the format of the question paper to ensure that candidates understand the requirements of the paper, for example, ensuring that candidates understand that they must select one essay from the first set of essay questions and one essay from the second set.

Definitions and terminology

It is important that candidates learn definitions and can express them accurately, using appropriate scientific terminology. Acceptable definitions are in the National 5 Environmental Science course specification.

Centres must ensure they provide candidates with a copy of the mandatory content tables available in the National 5 Environmental Science Course Specification and encourage them to keep a glossary of terms. These will enable candidates to familiarise themselves with phrasing and terminology used at this level.

Candidates and centres should also note that the term harmful gas alone would not be awarded any marks. The multi-faceted nature of this term does not make clear if the gas is harmful to the environment or to organisms. Candidates are encouraged to use the terms greenhouse gas or toxic/poisonous gas as appropriate.

Practical work

Candidates must be given the opportunity to take an active part in a wide range of practical work and fieldwork. This will help them with questions that ask about practical or fieldwork contexts. In particular, this should include the planning and evaluation of the practical or fieldwork setup and procedure.

While demonstration of experiments, videos and computer simulations may be useful additional tools, they cannot replace active practical work or fieldwork and do not develop the knowledge and skills associated with them. Candidates should experience the use of a variety of apparatus and techniques and be aware of the purpose and methodology of each. A list of apparatus and techniques is detailed in the National 5 Environmental Science Course Specification.

Graph work

Candidates should have sufficient opportunity to construct, and read information from, graphs. Marking instructions for graphs and the appropriate graph to use with given data sets, should also be explored. Additionally, candidates should be aware that lines of best fit are only suitable for scatter graphs, whereas in a line graph, candidates should connect plots with a ruler.

Section 2: Decision-making question

Candidates are required to select one option from the given list and give appropriate justification in support of their decision. Marks are only awarded for discussion points supporting their choice.

Candidates are awarded marks for each expanded point. Therefore, a direct lift of information alone from the supplementary booklet or section 2 would not be awarded any marks. For example, a direct lift of 'burning the waste will result in the release of greenhouse gases' would not be awarded a mark. However, 1 mark would be awarded if the candidate wrote 'burning the waste will result in the release of greenhouse gases, which will further contribute to climate change.'

Extended-response questions

Candidates should consider how to structure their responses where there is an allocation of multiple marks. This will help them respond effectively. Teachers and lecturers should support candidates with this by providing opportunities to practise exam techniques throughout the course. Centres should encourage candidates to practise past paper questions. The [past papers and marking instructions](#) on the SQA website are a useful resource to show candidates the expected level and depth of response required to access marks.

Assignment

Candidates must be given the opportunity to take an active part in a wide range of practical work and fieldwork. This will allow them to develop and enhance the skills required for the assignment, including experimental design, analysing, concluding and evaluating.

Centres must ensure that candidates are given a choice of topics to study in the assignment, and that these are appropriate to National 5 level. Centres must minimise the number of candidates in a class investigating the same topic. The maximum number of candidates that can work together to conduct an experiment or fieldwork is four. For example, in a class of 12, with candidates working in three groups of four, each group must investigate a different topic. The teacher or lecturer must ensure that the groups do not choose the same topic.

Centres should use the assignments and commentaries available on the [Understanding Standards](#) website as a teaching and learning aid, to facilitate understanding and expectations of the assignment component. Particular attention should be given to the analysis and evaluation section of the assignment.

Appendix: general commentary on grade boundaries

Our main aim when setting grade boundaries is to be fair to candidates across all subjects and levels and to maintain comparable standards across the years, even as arrangements evolve and change.

For most National Courses, we aim to set examinations and other external assessments and create marking instructions that allow:

- a competent candidate to score a minimum of 50% of the available marks (the notional grade C boundary)
- a well-prepared, very competent candidate to score at least 70% of the available marks (the notional grade A boundary)

It is very challenging to get the standard on target every year, in every subject, at every level. Therefore, we hold a grade boundary meeting for each course to bring together all the information available (statistical and qualitative) and to make final decisions on grade boundaries based on this information. Members of our Executive Management Team normally chair these meetings.

Principal assessors utilise their subject expertise to evaluate the performance of the assessment and propose suitable grade boundaries based on the full range of evidence. We can adjust the grade boundaries as a result of the discussion at these meetings. This allows the pass rate to be unaffected in circumstances where there is evidence that the question paper or other assessment has been more, or less, difficult than usual.

- The grade boundaries can be adjusted downwards if there is evidence that the question paper or other assessment has been more difficult than usual.
- The grade boundaries can be adjusted upwards if there is evidence that the question paper or other assessment has been less difficult than usual.
- Where levels of difficulty are comparable to previous years, similar grade boundaries are maintained.

Every year, we evaluate the performance of our assessments in a fair way, while ensuring standards are maintained so that our qualifications remain credible. To do this, we measure evidence of candidates' knowledge and skills against the national standard.

For full details of the approach, please refer to the [Awarding and Grading for National Courses Policy](#).