Questions & Answers

Changes to assessment in National 5 Biology

1 Removal of Units

Are candidates still required to achieve outcome 1 in the National 5 course?

In September 2016 the Deputy First Minister announced that units would be removed from the National 5 Course in session 2017–18. As a result, candidates are no longer required to complete unit assessments (Outcome 1 and Outcome 2) to achieve an overall course award.

Important note: The units that were previously part of the National 5 course will continue to be available as free standing units at SCQF level 5. Candidates doing a free standing SCQF level 5 unit must pass outcome 1 and outcome 2 to achieve the unit.

If candidates are entered for a unit/units only, does that mean they have to pass outcome 1 and outcome 2?

Yes. Candidates doing a SCQF level 5 free standing unit will need to pass outcome 1 and outcome 2.

Will the assessment criteria for free standing units be the same as session 2016–17?

Yes. For outcome 1, the thresholds will still apply. Candidates are not required to show full mastery of the assessment standards to achieve outcome 1. Instead, 5 out of the 6 assessment standards must be met to achieve a pass. Please note that candidates must still be given the opportunity to meet all assessment standards. The threshold has been put in place to reduce the volume of re-assessment.

For outcome 2, Assessment Standards 2.1 and 2.2 are not required to be passed independently.

2 Assignment — general questions

How does the scaling for the 20 to 25 marks for the assignment work?

The assignment has a total of 25 marks. Marks are then scaled by SQA to ensure that the assignment is still 20% of the course assessment.

Will the mark allocation be identical across the sciences at National 5 level?

Yes. The total number of marks is identical across the sciences. Where possible there is also consistency across the sciences; however there are instances of subject-specific nuances in the marking instructions.

Can any form of proforma or template be used to aid any element of the assignment?

It is not permitted at any stage to provide a template or model answers for the assignment.

3 Assignment — research stage

Are teachers and lecturers allowed to ask leading questions that might make candidates reconsider inappropriate or overcomplicated choices of topic and/or aim?

At the start of the research stage, teachers and lecturers must agree the choice of topic and provide advice on the suitability of the aim, taking into consideration health and safety, availability of resources and availability of internet/literature data. Although advice can be provided, candidates must devise the aim themselves.

Do teachers and lecturers have to ensure that all candidates within their centre have completely different aims?

As candidates can work on the same topic they could decide on similar aims. However, as the aim must be written by the candidates themselves, differences in wording are likely. It would therefore be unacceptable for all candidates within a centre to have identical aims.

Is the need for an application of biology being removed?

An application of biology is no longer required.

As outcome 1 is no longer a mandatory requirement to achieve the course, how will candidates generate data for the assignment?

Candidates must complete an experiment/fieldwork to generate data for the report stage.

If candidates do a series of experiments in class (so they can choose one to base their assignment on), they'll construct tables of results and plot graphs. Can teachers and lecturers give candidates any feedback on these?

When an experiment is carried out as part of learning and teaching, it is possible that teachers and lecturers will provide feedback at that time. However, it is not permissible to provide feedback to the candidates on their actual results if these are going to be used in the assignment. Any results tables and graphs that are produced as part of an experiment must not be used in the report stage. Only the raw data can be used.

Would candidates or centres be penalised if the experiment was deemed too simple for groups to share data for replicates?

As teachers and lecturers must agree the topic and provide advice on the suitability of the candidates' aims, this situation should not arise.

Should there be both independent replicates and repetition?

Replicates should be carried out by each group when possible. However, under some circumstances (eg where experiments/fieldwork are labour or time intensive), data could be shared between groups. In such cases, data could be pooled by the candidates but not by teachers and lecturers.

Will it be an infringement if candidates all choose the same variable?

A class could be investigating the same topic. However, within this there would be several variables that candidates could choose to investigate, and it is unlikely that candidates would all choose to investigate the same one. Where candidates do choose to investigate the same variable they can work in a small group (2–4 candidates). However, they must all take an active part in the experiment/fieldwork.

Can both sources of data to be processed and compared come from practical experimentation?

No. One set of data must be generated by the candidates carrying out an experiment/fieldwork; the other must come from the candidates' research.

Can teachers and lecturers help with the interpretation of scientific articles during the research stage?

It would be acceptable to help candidates with the interpretation of a scientific article at this stage.

If an internet search for back-up data reveals a similar experiment from another centre's website, would this be an acceptable source?

It is highly unlikely that data sets from experiments carried out in centres would be published on the internet. If this was the case the candidate would need to consider the reliability of the data.

Can questions from SQA past papers be used as sources of literature data?

In some instances it may be appropriate to use data from an SQA Biology past paper. However, where the basis of a question is about the reliability of the data (eg flawed experimental procedure or incorrect processing), it would not be appropriate to use data from SQA past papers as a comparative source. Candidates may find it difficult to decide whether a piece of data in SQA past papers is suitable and should not use them for this purpose.

Where teachers and lecturers decide to include an SQA past paper in the wide range of books and/or journals they are providing during the research stage, the entire past paper would need to be included, not just a selection of photocopied questions.

Is there a set number of books/journals/full printed websites that can be provided to candidates?

Yes. A 'wide list' of URLs and/or a wide range of books and/or journals is specified as providing a minimum of six sources. Where internet access is an issue, it is permissible to make a printed copy of all the content of all URLs in the list. Where a wide list is provided, candidates must have a sufficient range of sources to make decisions about which data/information is relevant.

If a pack is generated to include information, how can plagiarism and collaboration be prevented outside the class?

During the research stage candidates can work in small groups to gather data/information. Each candidate must take an active part in this and choose their own sources of data/information. During the report stage however, interaction with other candidates must not occur. Teachers and lecturers must exercise their professional responsibility to ensure that the report submitted is the candidates' own work. Candidates must sign a declaration confirming that the coursework submitted is their own work.

4 Assignment — report stage

How will the new 1 hour 30 minute time limit be imposed across schools?

The 1 hour and 30 minutes for the report stage can be a single sitting or it can be split over a number of successive subject lessons. It is the responsibility of the centre to ensure that the assessment conditions are met, and that candidates are given no more than the maximum time to complete the report. If the report is produced over a number of lessons, then the teacher or lecturer must retain candidates' work and store it securely between lessons.

Could centres make it a requirement that the report stage is carried out in an exam hall just like the prelims and final exams?

This is a possibility. Ultimately, it is for centres to decide the most appropriate arrangements for carrying out the report. The assessment conditions for each stage of the assignment are clearly detailed in the instructions for teachers and lecturers within the Coursework assessment task. It is the responsibility of the centre to ensure that these conditions are met.

Are teachers and lecturers allowed to go over the marking instructions breakdown beforehand?

It is acceptable to share the success criteria with candidates during the research stage. However, candidates must not have access to the assignment marking instructions during the report stage.

Are candidates allowed to have a checklist with them during the report stage?

The instructions for candidates section of the Coursework assessment task contains a summary for candidates to use during the report stage, to check that they have covered all sections in the report. Any other form of checklist or summary is not permitted.

A mark is awarded for describing the experiment and SQA has stated that candidates can bring in a description of the procedure. How do centres ensure this is not a draft? Surely the method would count as a draft for this one mark?

This mark will only be awarded where candidates demonstrate the ability to summarise the method. If a full procedure is provided, the mark will not be awarded. It is the responsibility of teachers and lecturers to check that the materials to be used by candidates in the report stage are not previously prepared drafts.

Do candidates need to include the whole experimental write up or just the title/aim and results?

Only a brief description of the approach used to collect the experimental/fieldwork data is required, along with the raw data.

Are candidates allowed to bring in a textbook for the underlying biology at the report stage?

No. However, textbooks can be used during the research stage to gather information on the underlying biology.

What would candidates be allowed to take in for the underlying biology?

Key headings and/or brief notes made during the research stage would be appropriate. Candidates must not have access to a previously prepared draft of the underlying biology.

Why is the marking of the underlying biology section different from the other sciences?

The marking of the extended response questions in the exam is different across the sciences. This has been carried through to the assignment. In Biology, a mark is awarded for each expanded description/explanation, whereas the other sciences mark this section holistically.

Do candidates have to show average calculations in the report?

The calculations, ie the working, for average values do not need to be shown. However, where there are repeated measurements, average values must be calculated and included in the report. If the experimental/fieldwork results are used to determine further values, at least one sample calculation must be shown.

Do results of mean calculations need to be included in the results table?

It would be appropriate to include these in the table of results although it is not essential.

Can candidates have a table with raw data, with the average column left blank, to calculate during the report stage?

No. Candidates should only have access to their raw experimental/fieldwork data during the report stage.

Is it acceptable for candidates to use a table with raw data and averages already calculated if they are processing the averages into a graph?

No. As candidates are required to calculate average and/or derived values correctly they must not have access to a specimen calculation or set of calculations for average or derived values.

Can candidates practise drawing graphs of their results in the research stage as long as they don't take them into the report stage?

Yes, this is acceptable in the research stage only. Candidates cannot bring this information into the report stage.

The third bullet point on page 19 of the April 2017 course specification suggests that the internet can be used in the report stage, while half way down p18 there is a bullet point that states: 'There is no access to email, the internet or mobile phones.' Can you clarify?

The bullet point on page 19 is part of a list of the materials which can be used in the report stage. It states that the internet or literature data/information (including a record of the source of the data/information) gathered by candidates during the research stage can be used during the report stage. This does not contradict the conditions of assessment which clearly state that candidates must not have access to e-mail, internet or mobile phones during the report stage.

Can candidates add to materials they brought in for the first session of the report stage at a later session?

No. If the report is produced over a number of sessions, then the teacher or lecturer must retain candidates' work and materials and store these securely between sessions.

When comparing data, is it still compulsory to use the term 'perspective'?

No. There are no compulsory terms.

Can candidates plot line their graphs by joining the dots with a ruler?

Yes. Many biological data deviate from simple straight line relationships. By convention, straight lines joining the points are used to indicate the uncertainty of the intermediate values.

Is it acceptable to use Excel for the graphical presentation?

Yes, Excel can be used for this. Please note that major and minor gridlines, and the appropriate axes labels and scale, must be included.

If the candidate chooses a graph for their second piece of data, do the rules on gridlines still apply if they are not processing this data?

No. Candidates are not required to process this data.

Is there no longer a requirement to present the researched data in a different format?

That is correct. This is no longer a requirement.

Will exemplars of completed assignments be produced?

Two exemplar assignments with associated commentaries have been published on SQA's Understanding Standards website at www.understandingstandards.org.uk.

Are teachers and lecturers allowed to show exemplars to candidates?

Yes. These could be used by teachers and lecturers to ensure candidates understand the requirements of the task. However, it is not permitted at any stage to provide model answers.

Will a list of suggested assignment topics/experiments be published?

No, however suggestions for practical activities are included in the *course support notes*, which are contained within the Course Specification as an appendix. Candidates should choose topics for investigation in consultation with their teachers and lecturers.

Will any additional resources be produced?

The Scottish Schools Education Research Centre (SSERC), in partnership with SQA, has produced two packs which contain practical activities to support the assignment. They each contain a candidate guide with protocols, and a teacher/technician guide that provides background information and links to resources which could be used as sources for secondary data/information. Links to these packs are published on SSERCs website: National 5 Biology Assignment Resources.

Should the quality of the data collected be taken into account?

Yes. The availability of suitable literature/internet data/information should be taken into account when the candidates formulate their aim.

Will candidates be eligible for extra time for the report stage if they have an assessment arrangement?

Yes, these candidates will be allowed extra time as specified in their assessment arrangements.

5 Question paper

Will exemplars of the scientific literacy question be available?

The specimen question paper will include a scientific literacy question. The specimen question paper will be published in September 2017.

Will the scientific literacy question be a short passage (like close reading) or will it include data to be analysed (reminiscent of an Advanced Higher data handling question)?

This type of question is a short passage based on contemporary research. Questions could include any of the skills outlined in the course specification.