

# Route map through assessment

**Course: Science**

**Level: National 4**

This document is intended to assist teachers in planning and delivering the overall vision for Curriculum for Excellence.

The vision for the new national qualifications is to create assessment opportunities that follow and support learning and teaching. This follows the principles laid out in *Building the Curriculum 5* and makes assessment a natural part of learning and teaching.

This route map aims to signpost all of the relevant material that is available to support your subject. Your professional judgement is vital and the documents listed below are intended to support you in deciding the most appropriate ways to generate evidence and assess candidates.

Education Scotland has produced a professional focus paper for science, and this is a good starting point as it provides support to help develop learning and teaching approaches that take forward the purposes and principles of Curriculum for Excellence through Science National 4.

[http://www.educationscotland.gov.uk/resources/nq/s/nqresource\\_tcm4741321.asp](http://www.educationscotland.gov.uk/resources/nq/s/nqresource_tcm4741321.asp)

## Science National 4 course content

The main SQA science page is found at <http://www.sqa.org.uk/sqa/45718.html>, with pages specifically related to National 4 at <http://www.sqa.org.uk/sqa/47426.html>. Staff should also regularly check the updates and announcements section of this page.

The course specification can be found at

[http://www.sqa.org.uk/files\\_ccc/CfE\\_CourseSpec\\_N4\\_Sciences\\_Science.pdf](http://www.sqa.org.uk/files_ccc/CfE_CourseSpec_N4_Sciences_Science.pdf).

The Science National 4 course has four mandatory units: Fragile Earth, Human Health, Applications of Science and an Added Value Unit.

More detail on course coverage can be found in the course support notes.

[http://www.sqa.org.uk/files\\_ccc/CfE\\_CourseUnitSupportNotes\\_N4\\_Sciences\\_Science.pdf](http://www.sqa.org.uk/files_ccc/CfE_CourseUnitSupportNotes_N4_Sciences_Science.pdf)

A course comparison of National 3 and National 4 is also available.

[http://www.sqa.org.uk/sqa/files\\_ccc/Science\\_Course\\_comparison.pdf](http://www.sqa.org.uk/sqa/files_ccc/Science_Course_comparison.pdf)



## Course assessment – Added Value Unit

At National 4 the Added Value Unit provides evidence of added value for the Science National 4 course through the successful completion of an assignment that will allow learners to demonstrate breadth, challenge and/or application.

[http://www.sqa.org.uk/files\\_ccc/CfE\\_Unit\\_N4\\_Science\\_AddedValueUnit.pdf](http://www.sqa.org.uk/files_ccc/CfE_Unit_N4_Science_AddedValueUnit.pdf)

Learners who complete this unit will be able to apply skills and knowledge to investigate a topical issue in science and its impact on the environment and society. To achieve the Science National 4 course learners must pass all of the required units, including the Added Value Unit. National 4 courses are not graded.

## Unit assessment

Units are mandatory when taken as part of the Science National 4 course but are also available as free-standing units, allowing learners to gain unit awards on successful completion of the unit assessment. Unit support notes follow on from the course support notes.

[http://www.sqa.org.uk/files\\_ccc/CfE\\_CourseUnitSupportNotes\\_N4\\_Sciences\\_Science.pdf](http://www.sqa.org.uk/files_ccc/CfE_CourseUnitSupportNotes_N4_Sciences_Science.pdf)

Each individual unit also has a National 4 unit specification which gives details of the outcomes and assessment standards. There are two outcomes per unit: one based on skills of scientific inquiry and one based on knowledge and understanding of the key areas of the unit and applying scientific skills.

Science: Fragile Earth

[http://www.sqa.org.uk/files\\_ccc/CfE\\_Unit\\_N4\\_Science\\_FragileEarth.pdf](http://www.sqa.org.uk/files_ccc/CfE_Unit_N4_Science_FragileEarth.pdf)

Science: Human Health

[http://www.sqa.org.uk/files\\_ccc/CfE\\_Unit\\_N4\\_Science\\_HumanHealth.pdf](http://www.sqa.org.uk/files_ccc/CfE_Unit_N4_Science_HumanHealth.pdf)

Science: Applications of Science

[http://www.sqa.org.uk/files\\_ccc/CfE\\_Unit\\_N4\\_Science\\_ApplicationsofScience.pdf](http://www.sqa.org.uk/files_ccc/CfE_Unit_N4_Science_ApplicationsofScience.pdf)

Learners must meet all the outcomes and assessment standards, and staff should read the documentation carefully. Evidence should be generated through learning and teaching. Assessment evidence can be drawn from a variety of activities and presented in a variety of formats. All of the evidence does not have to be generated from one activity but can be from several tasks and assessments carried out throughout the course.

Three different ways of gathering evidence have been suggested by SQA. The most traditional approach is unit by unit. A combined approach links knowledge and understanding from two units together. Staff may move towards the portfolio approach as their confidence grows. Here evidence is gathered from everyday learning using key classroom tasks. Unit assessment support is kept on the SQA Secure website.

## Verification

Internal verification is the process of ensuring standards are applied uniformly and consistently within a school in line with national standards. External verification is the process of ensuring that national standards are maintained consistently across all schools. The verification process is intended to be supportive and not onerous.

An outline of the quality assurance process can be found at <http://www.sqa.org.uk/sqa/58448.html>.

### *Prior verification*

[http://www.sqa.org.uk/files\\_ccc/Prior%20Verification%20Centre%20Guidance%20FINAL.pdf](http://www.sqa.org.uk/files_ccc/Prior%20Verification%20Centre%20Guidance%20FINAL.pdf)

Staff who devise their own assessments can send them to SQA for prior verification, free of charge. This is only necessary where significant changes have been made to the unit assessment provided. It gives staff confidence that their proposed assessment is fit for purpose and meets national standards.

### *Internal verification*

[http://www.sqa.org.uk/sqa/files\\_ccc/InternalVerificationGuideforSQAcentres.pdf](http://www.sqa.org.uk/sqa/files_ccc/InternalVerificationGuideforSQAcentres.pdf)

As a matter of course staff should be quality assuring their assessments through moderation activities whereby staff share their understanding of standards and expectations to ensure greater consistency in assessment decisions. In single-person departments an arrangement should be made with another school to allow for moderation activities to take place to build confidence in professional judgements.

### *External verification*

In science schools will submit a sample of learners' evidence for scrutiny by subject-specialist qualification verifiers. SQA intend that every school will be verified over the first few years. Verification will take place in November, February and May. Twelve samples will be requested.

[http://www.sqa.org.uk/sqa/files\\_ccc/Evidence\\_required\\_for\\_verificationevents.pdf](http://www.sqa.org.uk/sqa/files_ccc/Evidence_required_for_verificationevents.pdf)

Schools must retain the evidence until 31 July of each academic year.

[http://www.sqa.org.uk/sqa/files\\_ccc/SQA\\_Evidence\\_retention\\_requirements\\_A3\\_table.pdf](http://www.sqa.org.uk/sqa/files_ccc/SQA_Evidence_retention_requirements_A3_table.pdf)

Key verification messages for Science are available – see National 4 Science page on the SQA website under the verification tab: <http://www.sqa.org.uk/sqa/47426.html>

## Education Scotland support materials

Advice, resources and course materials for new national qualifications (cut and paste links below into your browser – Glow username and password required):

<http://www.educationscotland.gov.uk/nqcoursematerials/subjects/science/learningandteaching.asp>

<http://www.educationscotland.gov.uk/nqcoursematerials/subjects/science/coursematerials.asp>

Twig on Glow resources (cut and paste link below into your browser – Glow username and password required):

<http://www.twigonglow.com/>

## Other useful websites

A quick guide to finding vital information about Curriculum for Excellence:

<http://www.educationscotland.gov.uk/keycfesupport/index.asp>

This appears under three headings:

- the latest guidance, updates and plans for embedding Curriculum for Excellence
- information on assessment
- information on the new qualifications.

The BBC have pulled together all their learning content in a new Knowledge and Learning Beta site that includes Class Clips:

[www.bbc.co.uk/education](http://www.bbc.co.uk/education)