

# N2

National 2  
course  
specification



## National 2 Science in the Environment Course Specification

<b>Course code:</b>	C866 72
<b>SCQF:</b>	level 2 (18 SCQF credit points)
<b>Valid from:</b>	session 2021–22

This document provides detailed information about the course to ensure consistent and transparent assessment year on year. It describes the structure of the course 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.

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# Course overview

This course consists of 18 SCQF credit points. National 2 courses are notionally based on 180 hours of directed learning. Candidates at National 2 level may need additional time to successfully complete the course, according to individual needs.

The course has four units:

## Mandatory units

J5HF 72	Science in the Environment: Exploring Everyday Materials (National 2)	6 SCQF credit points
J5HJ 72	Science in the Environment: Living Things (National 2)	6 SCQF credit points

## Optional units

J5HH 72	Science in the Environment: Keeping our Planet Healthy (National 2)	6 SCQF credit points
J5HG 72	Science in the Environment: Forces (National 2)	6 SCQF credit points

Recommended entry	Progression
<p>Entry to this course is at the discretion of the centre.</p> <p>Candidates may have completed some units at National 1 or National 2 level before starting this course but this is not a requirement for entry.</p> <p>Relevant experiences and outcomes may provide appropriate learning and experience for the course.</p>	<ul style="list-style-type: none"> <li>◆ National 3 Science, Biology, Chemistry or Physics courses</li> <li>◆ National 2 courses and/or units in other subjects</li> <li>◆ units from awards at SCQF level 2, for example Personal Achievement Award or Personal Development Award</li> <li>◆ revisiting and repeating one or more of the National 2 units in this course by using the alternative context units</li> <li>◆ further study, supported employment and/or training</li> </ul>

## Conditions of award

Candidates must pass all the required units to achieve the National 2 Science in the Environment course. National 2 courses are not graded.

The required units for this course are the two mandatory units plus one of the optional units.

## 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.

This course has an emphasis on skills development and the application of those skills. Assessment approaches are proportionate, fit for purpose and promote best practice, enabling candidates to achieve the highest standards they can.

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

National Courses provide opportunities to develop the skills, knowledge and understanding of Learning for Sustainability, where appropriate.

This course helps candidates to learn about their own physical characteristics and to compare themselves to other people. It gives them a new insight into everyday materials they use or come into contact with and introduces them to the concept of forces. It allows them to explore the detrimental effect that human lifestyles can have on the environment.

Through these topics, candidates improve their understanding of their place in the world, helping them to become confident individuals and responsible citizens.

## Purpose and aims

The purpose of the course is to develop candidates' curiosity, interest and enthusiasm for science in a range of contexts.

The course aims to develop each candidate's awareness of themselves and their environment through observation, practical experiments, and tasks that encourage them to develop an interest in and an understanding of the living, material and physical world.

Candidates develop the ability to question, make choices, make simple predictions, and record results from practical tasks involving science. In this way the course provides opportunities for candidates to develop an awareness of the principles and concepts of science and the environment.

The course aims to enable candidates to:

- ◆ engage in practical scientific activities
- ◆ begin to develop scientific literacy through using scientific and environmental language in everyday contexts
- ◆ recognise the use and value of science in the environment and how it affects everyday life
- ◆ tackle real-life situations involving science
- ◆ develop an awareness of resources and their responsible and sustainable use
- ◆ make scientifically-informed choices
- ◆ use tools, equipment and materials safely

In addition, candidates develop broad, generic and transferable skills for learning, skills for life and skills for work, including thinking skills, literacy and citizenship, in a contextualised, engaging and enjoyable way.

## **Who is this course for?**

This course is suitable for candidates who have experienced learning across the science experiences and outcomes. It is also suitable for those wishing to study science for the first time.

Through practical activities, candidates begin to develop an awareness of science in their environment, to make scientifically-informed choices, and to develop the scientific literacy to communicate their knowledge and experience of science in everyday contexts. On completing the course, candidates begin to recognise the use and value of science in the environment and how it affects everyday life.

The course has a skills-based approach to learning. It takes account of the needs of all candidates and provides sufficient flexibility to enable them to achieve in different ways. Candidates may progress to National 3 Science, or to other units and courses at National 2 level. Skills developed in the course support progression to other curriculum areas, as well as to Personal Achievement Awards and Personal Development Awards.

# Course structure

This course consists of a combination of mandatory and optional units. In all these units there is scope for personalisation and choice, and opportunities for candidates to apply their scientific knowledge and skills to real-life situations and contexts that are relevant to themselves and their environment.

Candidates can choose to complete both optional units to extend their learning. Candidates can also revisit these units to reinforce their learning by using the alternative context units. However, while the alternative context model allows the individual units to be certificated again, candidates can only achieve and be certificated for the course once. Further information about the alternative context units is available on [SQA's website](#).

The units in this course are statements of standards for assessment and not programmes of learning and teaching. They can be delivered in a number of ways.

## Mandatory units

Note: candidates must complete both of the following units:

### **Science in the Environment: Exploring Everyday Materials (National 2)**

The aim of this unit is to provide candidates with opportunities to explore the properties of different materials, and changes that can be made to those materials through variation of heat or force, or through contact with other materials. This unit raises candidates' awareness of the differences between materials through simple experiments. Candidates will also ensure health and safety during all experiments.

### **Science in the Environment: Living Things (National 2)**

The aim of this unit is to provide candidates with opportunities to explore the human body and different systems in the human body, as well as the characteristics of other living things. This unit raises candidates' awareness of their own bodies and the differences between themselves, other humans, and other living things.

## Optional units

Note: candidates must complete one of the following units:

### **Science in the Environment: Keeping our Planet Healthy (National 2)**

The aim of this unit is to provide candidates with opportunities to explore issues concerning the environment and the impact humans have on our planet through the resources we use in everyday life. This unit raises candidates' awareness of some of the harmful effects we cause on our environment and to participate in activities that help to reduce those harmful effects.

## Science in the Environment: Forces (National 2)

The aim of this unit is to provide candidates with opportunities to explore different types of forces, the effect of forces on objects, and the size and direction of forces. This unit raises candidates' awareness of the effect forces can have through carrying out practical experiments. Candidates will also ensure health and safety during all experiments.

## 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:

- ◆ using a range of basic scientific skills in guided, practical scientific and environmental activities
- ◆ using tools and equipment safely in guided, practical scientific and environmental activities
- ◆ recognising underlying scientific ideas and how they affect everyday life for self and others
- ◆ using scientific literacy in everyday contexts
- ◆ suggesting solutions to tackle real-life situations involving science and the environment
- ◆ recognising resources available in everyday life including their responsible and sustainable use
- ◆ making scientifically-informed choices

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**
  - 1.2 Writing
  - 1.3 Listening and talking
- 4 Employability, enterprise and citizenship**
  - 4.6 Citizenship

## **5 Thinking skills**

5.1 Remembering

5.4 Analysing and evaluating

You must build these skills into the course at an appropriate level, where there are suitable opportunities. Learning for Sustainability contexts may provide you with opportunities to develop key aspects of skills for learning, skills for life and skills for work.

## **Learning for Sustainability**

SQA is committed to identifying opportunities to develop the skills, knowledge and understanding of Learning for Sustainability within all National Courses. The course support notes provide information on opportunities to develop Learning for Sustainability contexts, where appropriate.

The National 2 Science in the Environment: Keeping our Planet Healthy unit, provides the most obvious opportunities to cover sustainability issues through activities and learning directly involving the reduction, reuse and recycling of materials, as well as renewable sources of energy. However, other units in this course could be delivered in contexts that would help increase Learning for Sustainability.

In the National 2 Science in the Environment: Forces unit, simple windmills or waterwheels could be used as part of learning to demonstrate forces in action. The National 2 Science in the Environment: Exploring Everyday Materials unit could also be extended slightly to explore the difference between materials that are biodegradable and those that are not.



# Assessment

## Unit assessment

To achieve this course, candidates must pass all the required units. Units are not graded. They are assessed on a pass or fail basis within centres. All units are internally assessed against the requirements shown in the unit specification. They can be assessed on an individual unit basis or by using other approaches that combine the assessment for more than one unit.

You can assess the units in a variety of ways, as appropriate to your context. To support this, the unit assessment support packs provide possible assessment approaches.

SQA externally verifies internal assessments to ensure that they meet the national standards as defined in the course and unit specifications.

The assessment of the units in this course is as follows:

### **Science in the Environment: Exploring Everyday Materials (National 2)**

For this unit, learners will be able to:

- ◆ explore the properties and uses of different materials
- ◆ participate in practical experiments to explore changes in materials

### **Science in the Environment: Living Things (National 2)**

For this unit, learners will be able to:

- ◆ participate in activities to explore the human body
- ◆ participate in activities to explore other living things

### **Science in the Environment: Keeping our Planet Healthy (National 2)**

For this unit, learners will be able to:

- ◆ investigate the harmful effect of our use of the planet's natural resources
- ◆ participate in practical activities that help to save the planet's natural resources

### **Science in the Environment: Forces (National 2)**

For this unit, learners will be able to:

- ◆ participate in practical experiments to observe forces in the world around us
- ◆ participate in practical experiments to explore forces in action

# 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](http://www.sqa.org.uk/assessmentarrangements).

# Further information

The following links provide useful information and background:

- ◆ [National 2 web page](#)
- ◆ [Assessment arrangements web page](#)
- ◆ [Building the Curriculum 3–5](#)
- ◆ [Guide to Assessment](#)
- ◆ [SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work](#)
- ◆ [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, the unit specifications for the units in the course, and appropriate assessment support materials.

## Progression into this course

Entry to this course is at the discretion of the centre. Candidates may have completed units at National 1 or National 2 level before starting this course but this is not a requirement for entry.

This course may be suitable for candidates who have successfully completed qualifications in science or related areas at SCQF levels 1 or 2. It may also be suitable for those wishing to work towards a science qualification for the first time.

Experiences and outcomes from early and first level sciences, social subjects and health and wellbeing curriculum areas may provide an appropriate basis for doing this course.

## Developing skills, knowledge and understanding

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

Whether you use the activities provided in the unit assessment support packs or develop your own activities to suit the specific needs of your candidates, you should be able to provide opportunities for candidates to:

- ◆ use a range of basic scientific skills in guided, practical scientific and environmental activities
- ◆ use tools and equipment safely in guided, practical scientific and environmental activities
- ◆ recognise underlying scientific ideas and how they affect everyday life for self and others
- ◆ use scientific literacy in everyday contexts
- ◆ suggest solutions to tackle real-life situations involving science and the environment
- ◆ recognise resources available in everyday life including their responsible and sustainable use
- ◆ make scientifically-informed choices

The extent to which you can use these opportunities to develop each candidate's skills, knowledge and understanding will depend on the amount of support they need to complete the activities.

## Progression from this course

Some candidates who achieve the National 2 Science in the Environment course will be able to progress to the National 3 Science course, or to National 3 courses in Biology, Chemistry or Physics.

For many National 2 candidates, progression is more likely to be lateral within SCQF level 2. You should provide further opportunities for candidates to complete National 2 courses and/or units in other subjects along with units from awards, such as the Personal Achievement Award or Personal Development Award at SCQF level 2.

Some candidates may benefit from revisiting and repeating one or more of the National 2 units in this course, by using the [alternative context units](#).

Some candidates can also progress through supported employment and training opportunities.

## Links between National 2 and National 3 units

Some National 3 units provide evidence that can be used for National 2 units. Where this occurs, teachers and lecturers should refer to the outcomes and assessment standards of the National 2 unit to determine which assessment standards it might cover and what additional evidence is still required.

The table below shows which National 3 units will provide evidence that might cover one or more assessment standards in a National 2 unit.

National 2 unit	National 3 unit
Science in the Environment: Exploring Everyday Materials	Applications of Science
Science in the Environment: Living Things	Science: Human Health
Science in the Environment: Keeping our Planet Healthy	Science: Fragile Earth
Science in the Environment: Forces	Physics: Dynamics and Space

An example of this could be where a candidate has been entered for National 2 Science in the Environment units after being unable to meet all the requirements of National 3 Science units. It is possible that some evidence they have already produced would meet the assessment standards for the National 2 units.

## Approaches to learning and teaching

This section provides general advice and guidance on approaches to learning and teaching that you can use to deliver this course.

Effective learning and teaching draws on a variety of approaches to enrich the experiences of candidates. You can help to motivate and challenge candidates by using a mix of approaches that provide opportunities for personalisation and choice.

The skills-based focus of the course lends itself to a variety of approaches to learning and teaching, which reflect those used in broad general education and the values and principles of Curriculum for Excellence. Learning should, where possible, be relevant to candidates' everyday lives, their overall learning programme, and/or work and leisure.

You could also consider interdisciplinary and cross-curricular approaches to learning and teaching, and explore how you could include and recognise the extra-curricular activities or the personal interests of candidates.

You should use your professional judgement to distribute time between the various units. Each unit is likely to require an approximately equal time allocation, although this may depend on candidates' prior learning in the different topic areas, the learning and teaching methods you adopt, and the design of the course.

## **Sequencing and integrating units**

The timing and sequencing of the delivery and assessment of the units is at the discretion of the centre. However, learning and teaching approaches should provide opportunities to integrate skills wherever possible. Opportunities for the combined assessment of assessment standards across units are provided in the unit support notes.

## **Approaches to assessment**

Candidates benefit from receiving accurate and regular feedback regarding their learning. This helps to ensure they are actively involved in the assessment process. It is also important that you use different approaches to assessment to suit the needs of individual candidates.

At SCQF level 2, most evidence for assessment is gathered on a naturally occurring, ongoing basis, rather than from more formal assessment methods. There are many contexts that you might use for gathering evidence, for example extra-curricular and/or outdoor learning.

Naturally occurring evidence is evidence that occurs in and as part of learning and teaching, which you can gather for assessment purposes in a variety of ways:

- ◆ observation of evidence demonstrated during an activity (using an observation checklist, visual recording, photography or equivalent)
- ◆ oral questioning before, during, and on completion of an activity (recorded using an audio-visual or audio recording or using your detailed written notes as evidence)
- ◆ learning and teaching activities that generate physical evidence for assessment
- ◆ identifying opportunities to record evidence during out-of-centre activities

You should give candidates the opportunity to use their normal method of communication, and give them access to appropriate resources or support when these are normally available in learning and teaching situations.

Suggested approaches to assessment for all units in this course include:

- ◆ using a project or extended activity to assess a range of outcomes or units together
- ◆ using real-life activities and events such as gardening, sport or making items, for example meals, clothes or household items using a range of resources
- ◆ using extra-curricular activities (both in the centre and/or the community) such as conservation projects or voluntary community activities
- ◆ integrating assessment across curriculum areas, for example a topic being studied in the health and wellbeing or social subjects curriculum areas could provide the opportunity to generate evidence for the Science in the Environment course

You should be as inclusive as possible and take into account the needs and experiences of candidates in whatever assessment method you use. Internal assessment should:

- ◆ use content, resources and materials that recognise different groups and avoid bias or stereotyping
- ◆ provide a balance of assessment methods and adopt alternative approaches to gather evidence, which build in opportunities for personalisation and choice, where possible

## Gathering evidence

One approach to gathering evidence might involve creating a portfolio or workbook for the course or for each unit. The portfolio, workbook or similar method of collating evidence could include the following types of evidence:

- ◆ written evidence
- ◆ results of tests, quizzes or competitions
- ◆ oral evidence from discussions between you and the candidate, or between candidates
- ◆ observation notes or checklists used during group or collaborative tasks
- ◆ extracts from workbooks or jotters which show a collection of evidence generated during day-to-day teaching and learning activities
- ◆ computer-generated assessment records or printouts from simulations, games or online tests
- ◆ photographs of project or investigative work or to record milestone achievement
- ◆ spreadsheets and computer-generated graphics
- ◆ diagrams, pictures or illustrations
- ◆ video recordings of practical activities
- ◆ reviews by others, for example external specialists or other subject specialists if interdisciplinary working is involved

For guidance on authenticating evidence gathered outwith your direct supervision, for example outside the school or classroom, refer to SQA's [Guide to Assessment](#).

## Combining assessment across units

If you choose an integrated approach to course delivery, there may be opportunities for combining assessment across units. If using this approach, you must be able to track evidence for individual outcomes and assessment standards.

A combined approach to assessment is recommended because it has the potential to:

- ◆ enrich the assessment process for you and for candidates by bringing together elements of different units
- ◆ improve the relevance and coherence of the programme of learning

Opportunities for cross-curriculum working can provide a framework for integrated approaches to assessment. For example, candidates could be involved in:

- ◆ environmental weeks
- ◆ Eco-Schools awards
- ◆ volunteering days with a local environmental organisation
- ◆ sports day to identify the forces used in a range of sports
- ◆ recycling materials after a party or concert

## Equality and inclusion

Candidates at SCQF level 2 are likely to require more support with their learning than at some other levels. You should give candidates as much support as they need to engage with learning, teaching and assessment activities while maintaining the integrity of the outcome and assessment standards.

Examples of support might include:

- ◆ allowing extra time to complete activities
- ◆ practical helpers assisting candidates with practical activities, under direct candidate instruction (this could also include a reader or scribe as appropriate)
- ◆ using specialised and adapted equipment
- ◆ using ICT and other assistive technologies

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

You 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 you 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.

Throughout the course there are significant opportunities to develop the following skills for learning, skills for life and skills for work:

## **1 Literacy**

### **1.2 Writing**

Candidates develop the ability to create texts which communicate ideas, opinions and information, to meet a purpose and within a context. In the Science in the Environment: Living Things unit, candidates could write the names of different parts of the body and the names and characteristics of different living things.

### **1.3 Listening and talking**

Candidates develop the ability to access, engage in and understand their learning, and learn to communicate their thoughts, ideas and opinions. This course provides candidates with the opportunity to work in real-life contexts and to communicate their thinking by receiving and communicating information in a variety of ways.

## **4 Employability, enterprise and citizenship**

### **4.6 Citizenship**

Candidates develop a concern for the environment and for others, become aware of rights and responsibilities, and learn about acting responsibly. In the two optional units, you could give candidates the opportunity to develop a caring and responsible attitude towards a local environmental area. This could include preparing and maintaining an area for living things or using available resources responsibly.

## **5 Thinking skills**

### **5.1 Remembering**

Candidates develop the ability to identify, recognise and recall facts, events and sequences from, and while engaged in, practical scientific activities.

### **5.4 Analysing and evaluating**

Candidates have the opportunity to explore a range of real-life situations involving science. You could give candidates the opportunity to discuss their observations and, with support, draw simple conclusions, or opinions, or share ideas.

In addition, there may also be opportunities for candidates to develop the following:

## **2 Numeracy**

In the Science in the Environment: Forces unit, candidates could be involved in measuring distance rather than simply comparing the distance travelled by objects after forces have been exerted on them.

# Administrative information

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## History of changes

Version	Description of change	Date

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