

Draft National Unit Specification



Unit title: Science: Science at Work (National 4)

SCQF: level 4 (6 SCQF credit points)

Unit code: to be advised

Unit outline

The general aim of this Unit is to develop skills of scientific inquiry, investigation, analysis and knowledge and understanding of concepts related to science at work. This can be done using a variety of approaches, including investigation and problem solving. The skills focus will be on analysing and evaluating information, drawing conclusions, giving explanations and making predictions. Learners can apply these skills when considering the impact on our everyday lives and the environmental/ethical implications.

Learners who complete this Unit will be able to:

- 1 Draw on knowledge, understanding and skills to investigate an application of communication
- 2 Draw on knowledge and understanding of science to explore the environmental/social issues related to the use of communication applications

This Unit is a mandatory Unit of the Science (National 4) Course and is also available as a free-standing Unit. The Unit Specification should be read in conjunction with the *Unit Support Notes* which provide advice and guidance on delivery, assessment approaches and development of skills for learning, skills for life and skills for work. Exemplification of the standards in this Unit is given in the *National Assessment Resource*.

The Added Value Unit Specification for the Science (National 4) Course gives further mandatory information on Course coverage for learners taking this Unit as part of the Science (National 4) Course.

Recommended entry

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- ◆ Access 3 Biology Course or relevant component Units
- ◆ Access 3 Chemistry Course or relevant component Units
- ◆ Access 3 Environmental Science Course or relevant component Units
- ◆ Access 3 Physics Course or relevant component Units
- ◆ Access 3 Science Course or relevant component Units

In terms of prior learning and experience, relevant experiences and outcomes may also provide an appropriate basis for doing this Unit. Further information on relevant experiences and outcomes will be given in the *Unit Support Notes*.

Equality and inclusion

This Unit Specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence. For further information please refer to the *Unit Support Notes*.

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Standards

Outcomes and assessment standards

Outcome 1

The learner will:

- 1 Draw on knowledge, understanding and skills to investigate an application of communication by:**
 - 1.1 Describing a science concept used by a communication device
 - 1.2 Planning an experiment to test the aim/purpose
 - 1.3 Carrying out an experiment to test the aim/purpose
 - 1.4 Recording observations and collecting data
 - 1.5 Presenting results
 - 1.6 Drawing valid conclusions that are consistent with data
 - 1.7 Suggesting a way of improving an experimental procedure

Outcome 2

The learner will:

- 2 Draw on knowledge and understanding of science to explore the environmental/social issues related to the use of communication applications by:**
 - 2.1 Outlining a case for or against the use of an application of communication, with reasons
 - 2.2 Outline the effect on the environment arising from the use of a communication device

Evidence Requirements for the Unit

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Evidence can be drawn from a variety of sources and presented in a variety of formats.

Evidence may be presented for individual Outcomes or gathered for the Unit as a whole, through combining assessment holistically in a single activity. If the latter approach is used, it must be clear how the evidence covers each Outcome.

Concepts to be covered in the Unit will include the following:

- ◆ principles and applications of telecommunications
- ◆ uses and properties of electromagnetic waves
- ◆ materials technology, including properties of substances; properties and uses of novel materials and impacts, risks and benefits of their use
- ◆ risks and health and safety measures associated with science at work, including chemical, radiation and electrical risks and safety

Exemplification of assessment will be provided in the *National Assessment Resource*. Advice and guidance on possible approaches to assessment is provided in the *Unit Support Notes*.

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Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this Unit. The skills that learners will be expected to improve on and develop through the Unit are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and drawn from the main skills areas listed below. These must be built into the Unit where there are appropriate opportunities.

1 Literacy

1.1 Reading

2 Numeracy

2.1 Number processes

2.2 Money, time and measurement

2.3 Information handling

4 Employability, enterprise and citizenship

4.1 Citizenship

5 Thinking skills

5.3 Applying

5.4 Analysing and evaluating

Amplification of these is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills should be at the same SCQF level of the Unit and be consistent with the SCQF level descriptor. Further information on building in skills for learning, skills for life and skills for work is given in the *Unit Support Notes*.

Administrative information



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Superclass: to be advised

History of changes

Version	Description of change	Authorised by	Date

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Note: readers are advised to check SQA's website: www.sqa.org.uk to ensure they are using the most up-to-date version of the Unit Specification.