



National Unit Specification: general information

UNIT Energy and the Individual (Intermediate 2)

CODE F3FT 11

COURSE Energy (Intermediate 2)

SUMMARY

This is an optional Unit of the Intermediate 2 Skills for Work Energy Course. This Unit can also be taken as a stand-alone Unit.

Candidates will investigate the energy they use annually. This will include producing their own Carbon Footprint, where candidates will use Energy and CO₂ calculators to gauge what impact they are having on the environment. Using the data gained they will review and evaluate their lifestyles to try and reduce the energy they consume and thereby reduce the size of their carbon footprint.

This Unit has been designed with secondary school candidates in mind but is also suitable for a wide range of candidate groups.

OUTCOMES

- 1 Investigate and determine own energy consumption in accordance with a given brief.
- 2 Investigate changes to lifestyle that will reduce own energy consumption in accordance with a given brief.
- 3 Present findings on own energy consumption according to a given brief.

RECOMMENDED ENTRY

Entry is at the discretion of the centre.

Administrative Information

Superclass: QB

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CREDIT VALUE

0.5 credit at Intermediate 2 (3 SCQF credit points at SCQF level 5*).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

CORE SKILLS

There is no automatic certification of Core Skills in this Unit.

Opportunities for developing aspects of Core Skills are highlighted in *Guidance on Learning and Teaching Approaches for this Unit*.

National Unit Specification: statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME 1

Investigate and determine own energy consumption in accordance with a given brief.

Performance Criteria

- (a) Gather relevant information from a variety of sources according to the given brief.
- (b) Gather information on the forms and quantities of own energy consumption.
- (c) Organise information gathered to produce own carbon footprint based on identified energy consumption.
- (d) Check that all steps have been completed in accordance with the given brief, including completing the work to the agreed timescale.

OUTCOME 2

Investigate changes to lifestyle that will reduce own energy consumption in accordance with a given brief.

Performance Criteria

- (a) Gather relevant information from a variety of sources according to the given brief.
- (b) Gather information on possible ways of reducing own energy consumption.
- (c) Organise information gathered to produce a revised carbon footprint which reduces energy consumption.
- (d) Check that all steps have been completed in accordance with the given brief, including completing the work to the agreed timescale.

OUTCOME 3

Present findings on own energy consumption according to a given brief.

Performance Criteria

- (a) Present clear summary information on own existing carbon footprint.
- (b) Present clear summary information on own revised carbon footprint.
- (c) Identify clearly the impact of the changes on own energy consumption.

National Unit Specification: statement of standards (cont)

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EVIDENCE REQUIREMENTS FOR THIS UNIT

Evidence is required to demonstrate the candidates have achieved all Outcomes and Performance Criteria.

Performance and product evidence is required for this Unit. The evidence should be gathered at appropriate points throughout the Unit, in open-book conditions, in response to a given brief.

Performance and product evidence

Candidates will carry out an individual investigation according to the instructions in a given brief which covers all Outcomes and Performance Criteria. Findings will be gathered in a folio which the assessor will discuss with the candidate to check that all steps have been carried out as specified. The assessor will then complete and retain a checklist for each candidate as evidence that all steps have been carried out as specified in the brief.

Product evidence

Each candidate will produce a presentation which meets the Performance Criteria in Outcome 3. The method of communication in the presentation may be chosen by the candidate — written/oral, diagrammatic, graphical, and electronic — are all acceptable. The candidate may also choose different forms of communication — poster, leaflet, short talk, PowerPoint presentation — are all acceptable, provided the Performance Criteria are met.

An assessor checklist identifying the critical aspects of the presentation, regardless of form, should be completed and retained for each candidate. The critical aspects are:

- ◆ summary information must be clear
- ◆ summary information must cover both own existing carbon footprint and own revised carbon footprint
- ◆ impact of changes on energy consumption must be clearly identified

The National Assessment Bank (NAB) item for this Unit contains an appropriate brief which covers the investigation and presentation requirements of the Unit and an assessor observation checklist. Centres wishing to devise their own assessments must refer to the NAB to ensure a comparable standard.

National Unit Specification: support notes

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This part of the Unit Specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 20 hours.

GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT

The *Energy and the Individual* Unit has been designed to provide candidates with an introduction to the amount of energy they use or consume and hence the size of their primary carbon footprint¹. The focus of this Unit is on the investigation skills that the candidate will use to access and organise relevant information, and finally, to present their findings in a clear format.

The candidates could use an online energy/carbon footprint calculator to determine the size of their carbon footprint. This will normally state how this value compares with the average person in the UK. Candidates will review their initial details to try and reduce the amount of energy they consume and draw up new ones. This new data can be input into the energy calculator and a new carbon footprint produced. The new carbon footprint is then evaluated to monitor the differences made by altering the energy they now propose to use.

¹ A Carbon Footprint is made up of the sum of two parts, the primary carbon footprint and the secondary carbon footprint.

The primary carbon footprint is a measure of our direct emissions of CO₂ from the burning of fossil fuels including domestic energy consumption and transportation (eg car and plane).

The secondary carbon footprint is a measure of the indirect CO₂ emissions from the whole lifecycle of products we use — those associated with their manufacture and eventual disposal or decommissioning.

Candidates will only deal with the primary carbon footprint, although it would be beneficial to at least explain what the secondary carbon footprint is.

When candidates are exploring possible ways to reduce energy consumption, changes in the energy used could come from some of the following:

- ◆ walk more
- ◆ cycle more
- ◆ share a lift
- ◆ use 'park and ride' schemes
- ◆ use public transport
- ◆ use a smaller or electric car
- ◆ boil only the water needed
- ◆ reduce the house central heating temperature
- ◆ turn down radiator thermostatic valves
- ◆ use less electricity: playstation/games, heating, tumble drier, washer, music player, hair drier, shower, dishwasher, video/DVD players, lights, etc
- ◆ use energy efficient light bulbs

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- ◆ increase the amount of insulation in the home: wall, ceiling, floor
- ◆ fit an efficient condensing gas boiler
- ◆ switch off or don't use 'standby'
- ◆ reduce fly or fly and stay holidays
- ◆ use food grown locally
- ◆ recycle waste
- ◆ use microgeneration systems on your home: solar hot water panels, solar photovoltaic panels, wind turbines, or ground source heat pumps

The generic employability skills which are developed in this Unit are:

- ◆ maintaining good timekeeping and attendance
- ◆ seeking feedback and advice
- ◆ checking quality of work
- ◆ working to agreed deadlines
- ◆ organising work effectively
- ◆ working confidently
- ◆ working independently
- ◆ developing investigation skills
- ◆ developing presentation skills
- ◆ developing creativity skills

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

It is recommended that a thorough induction is given to candidates at the start of this Unit so that they understand that the main learning approach will be candidate-centred. Candidates should work independently on a given investigation brief and should develop and use skills in accessing and organising information from a variety of sources. Sources might include:

- ◆ family and friends
- ◆ manufacturer's instructions
- ◆ internet
- ◆ reference books
- ◆ visiting speakers

It is envisaged that some tutor support is given to candidates in the initial stages, and at regular intervals, throughout this Unit. However, the intention is to encourage candidates to work as independently as possible.

Candidates will be given responsibility, following lecturer/teacher support, for making choices on the format and style of the presentation of their key findings.

The candidate will be central to the learning and teaching of this Unit. They should be proactive in detailing the energy they initially use, and draw up changes to their lifestyle which would reduce this energy consumption and the size of their carbon footprint. They will reflect on the effect these changes have to their lifestyle and size of their carbon footprint.

National Unit Specification: support notes (cont)

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When candidates are presenting their findings in this Unit, there are good learning opportunities for the whole class group. The sharing of information and the different methods used for presentations provide useful opportunities for reflection and discussion. The assessment process itself can be used as a valuable part of the learning in the Unit.

Where this Unit is delivered as part of the Intermediate 2 Energy Course, there are good opportunities to integrate the practical skills with the development and assessment of generic employability skills in the *Energy: Employability and Careers* Unit. The candidate's review of progress in employability skills could be based on the practical activities carried out in this Unit.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

In this Unit there are good opportunities for candidates to develop the Core Skill of *Information Technology*:

- ◆ in the investigation and calculation of their carbon footprint
- ◆ in the use of ICT to present findings

There are opportunities to develop aspects of the Core Skill of *Communication* both in the investigation and presentation of findings.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by information and communications technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

Formative assessment exercises involving candidates in identifying their energy consumption will play an important part in building up the candidate's knowledge, understanding, and confidence in relation to this Unit.

The recommended approach to summative assessment in this Unit is as follows:

Outcomes 1 and 2

Candidates will carry out an investigation according to a given brief. In doing this, they will gather their findings in a folio which will be used as the basis for a discussion between the assessor and the candidate. The assessment evidence will be the completed signed assessor checklist which will detail the essential steps in the process, as expressed in the Performance Criteria.

National Unit Specification: support notes (cont)

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Outcome 3

The assessment is based on the end product of the Outcome which will be a presentation in a form of the candidate's choosing. Forms of presentation might include, for example, a short talk, poster, leaflet, diagram, or PowerPoint presentation.

An assessor checklist identifying the critical aspects of the presentation, regardless of form, should be completed and retained for each candidate.

CANDIDATES WITH DISABILITIES AND/OR ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).