



National Unit Specification

General information

Unit title: Food Waste and Sustainability (SCQF level 5)

Unit code: J7CJ 45

Superclass: NF

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Unit purpose

The purpose of this unit is to introduce learners to sustainability in industry, with a particular focus on food waste. Learners will explore where food waste comes from, the impact that it has on the environment, as well as actions that can be taken to ensure the efficient use of all resources in the workplace.

Learners will also gain an understanding of their own responsibility to minimise food waste and how to adopt sustainable practices in the workplace.

This unit is available as an option within the National Certificates (NC) in Professional Cookery and Bakery at SCQF level 5 and is also suitable for delivery as a stand-alone unit.

Outcomes

On successful completion of the unit the learner will be able to:

1. Investigate how food waste is generated and the impact that it has on the environment.
2. Demonstrate techniques for reducing food waste.
3. Explore how an organisation can adopt sustainable practices and reduce its carbon footprint.

Credit points and level

1 National Unit credit at Scottish Credit and Qualifications Framework (SCQF) level 5: (6 SCQF credit points at SCQF level 5).

National Unit Specification: General information (continued)

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Recommended entry to the unit

Entry is at the discretion of the centre.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes for this unit specification.

There is no automatic certification of Core Skills or Core Skill components in this unit.

Context for delivery

If this unit is delivered as part of a group award, it is recommended that it should be taught and assessed within the subject area of the group award to which it contributes.

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.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

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 how food waste is generated and the impact that it has on the environment.

Performance criteria

- (a) Identify how food waste is generated in an organisation.
- (b) Describe what happens to food waste when it leaves an organisation.
- (c) Outline the impact of food waste on the environment.

Outcome 2

Demonstrate techniques for reducing food waste.

Performance criteria

- (a) Review skills to identify improvements to reduce food waste.
- (b) Prepare a range of foods using effective portion control methods.
- (c) Preserve surplus foods using a range of preservation methods.
- (d) Explore ways to use food by-products rather than disposing of them.

Outcome 3

Explore how an organisation can adopt sustainable practices and reduce its carbon footprint.

Performance criteria

- (a) Outline what is meant by net zero.
- (b) Calculate the carbon footprint of a range of products/ingredients.
- (c) Identify changes that an organisation could make to reduce its carbon footprint.
- (d) Suggest ways that employees can contribute to an organisation's approach to reducing its carbon footprint.

National Unit Specification: Statement of standards (continued)

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Evidence requirements for this unit

Evidence is required to demonstrate that learners have achieved all outcomes and performance criteria.

Performance and written/oral evidence is required for this unit. Practical activities for this unit should be carried out under supervision in a realistic working environment (for example a training kitchen) or real workplace. Written/oral evidence should be generated under open-book conditions.

Outcomes 1 and 3 — Written and/or oral evidence

Learners are required to:

- ◆ Identify how food waste is generated in an organisation — to include two different types of food waste.
- ◆ Describe two different ways that food waste could be processed when it leaves an organisation.
- ◆ Give an example of how food waste has an impact on the environment.
- ◆ Briefly describe what is meant by net zero.
- ◆ Calculate the carbon footprint of three products/ingredients commonly used by an organisation.
- ◆ Identify changes that an organisation could make to reduce its carbon footprint, should include:
 - identifying products or resources that can be reused or repurposed.
 - direct energy and water usage.
 - indirect energy and water usage.
- ◆ Suggest two ways that employees can contribute to an organisation's approach to reducing its carbon footprint.

Outcome 2 — Performance, product and written and/or oral evidence

Written/oral evidence

Learners are required to:

- ◆ Review their own skills and identify improvements to reduce food waste.
- ◆ Explore ways to use food by-products rather than disposing of them.

Performance/product evidence

Learners are required to:

- ◆ Prepare a range of foods using effective portion control.
- ◆ Preserve surplus food products using three different preservation methods.
- ◆ Create an alternative product using one food by-product that would normally be disposed of.



National Unit Support Notes

Unit title: Food Waste and Sustainability (SCQF level 5)

Unit support notes are offered as guidance and are not mandatory.

While the exact time allocated to this unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this unit

This unit is available as an option within the National Certificates in Professional Cookery and Bakery at SCQF level 5 and is also suitable for delivery as a stand-alone unit.

The purpose of this unit is to introduce learners to sustainability in industry, with a particular focus on food waste. Learners will explore where food waste comes from, the impact that it has on the environment, as well as actions that can be taken to ensure the efficient use of all resources in the workplace.

Learners will also gain an understanding of their own responsibility to minimise food waste and how to adopt sustainable practices in the workplace.

Outcome 1 looks at how food waste is generated within a specific organisation, what happens to it when it leaves the organisation, and the impact food waste has on the environment in general.

For outcome 2, learners will consider and practice different ways for reducing waste, this should include using a range of methods to preserve surplus products. Learners will also practice using food by-products to create a new product.

Outcome 3 covers sustainability in general and explores how organisations can move towards net zero and reduce their carbon footprint. Learners will also consider how an individual employee can contribute to an organisation's carbon reduction goals.

Guidance on approaches to delivery of this unit

Requirements for the unit should be discussed with learners as part of the introduction to the unit. The unit could be taught in blended style to provide learners with a wide breadth of basic knowledge. For example, learners may carry out guided research and participate in discussions on food waste, sustainability, and environmental impacts in relation to a specific organisation, such as their centre or a workplace.

National Unit Support Notes (continued)

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A learner pack could be provided to clarify avenues of study and facilitate recording of information. Delivery of the theory-based outcomes of this unit could be carried out in a classroom and the practical activities in a realistic working environment or real workplace. Access should be provided to relevant textbooks and notes to facilitate basic research and aid learners in the completion of assessments. The use of information and communication technology (ICT) is encouraged for this purpose.

A wide range of learning and teaching approaches should be used, which may include:

- ◆ Lecturer/teacher led discussions.
- ◆ Structured worksheets.
- ◆ Group work.
- ◆ Basic internet or book research.
- ◆ Practical activities.
- ◆ Reflection and evaluation.

As a general introduction, learners could be encouraged to research the [United Nations 17 Goals for Sustainable Development](#) and identify two or three of these to discuss in the context of their programme of study, for example hospitality, professional cookery, bakery, food production, etcetera.

For outcome 1:

The definition of food waste and where it comes from in different industry sectors should be discussed. Learners could work in groups to categorise food waste within organisations they are familiar with and identify ways that wastage could be reduced, for example:

- ◆ Portion control.
- ◆ Selection of appropriate portions sizes for different situations.
- ◆ Efficient stock control.

What happens to food waste when it leaves the organisation and the impact this has on the environment should be discussed.

Discussion on what happens to food waste when it leaves the organisation could include:

- ◆ Composting — highlighting the types of food waste that can be used to create compost and any that may need to be prior treated before being added to the composter, such as baking eggshells first to make them brittle and easier to crush into small pieces.
- ◆ Anaerobic digestion — a process of converting food waste into energy.
- ◆ Landfill — food waste in landfill sites takes a long time to break down and produces harmful greenhouse gas emissions.

Learners could be encouraged to explore [Zero Waste Scotland's](#) resources on reducing food waste.

Although not assessed, the financial cost of food waste to a business should also be discussed.

National Unit Support Notes (continued)

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For outcome 2:

Learners should become familiar with ways to reduce food waste, this could include:

- ◆ Understanding that there are always by-products of food production — peelings, eggshells, bones, etcetera — and thinking about how to process these in a way that has less of a negative impact on the environment.
- ◆ Reviewing their own food preparation and cooking skills and identifying improvements to reduce wastage.
- ◆ Understanding how portion control can help to reduce food waste.
- ◆ Practising using different methods to preserve surplus foods to reduce waste, for example making preserves, pickling, etcetera.
- ◆ Exploring ways to use food by-products rather than disposing of them.

For outcome 3:

Learners should gain an awareness of what is meant by a net zero economy and the need for organisations and individuals to reduce their carbon emissions.

Learners could consider how adopting circular processes can help in the drive towards achieving net zero and be encouraged to see how they can play their part in the cycle.

Learners could consider an organisation that they are familiar with, for example their centre, an organisation that they work for, and identify changes that both the organisation and they themselves could make to become more sustainable and work towards a net zero.

Although not assessed, learners could be introduced to the Scope 1, 2 and 3 emission measurements* and how these can be used to help organisations and individuals to understand, categorise and measure the different kinds of emissions they create.

*The term Scope 1, 2 and 3 was introduced by the [Greenhouse Gas Protocol](#), and separates carbon emissions created by an organisation into three categories:

- ◆ Scope 1 emissions are created by operating the things that an organisation controls, such as running equipment to make products, driving vehicles, heating buildings, powering computers, etcetera.
- ◆ Scope 2 emissions are created by the production of the energy that an organisation buys, such as gas and electricity.
- ◆ Scope 3 are carbon emissions produced by suppliers making products that the organisation uses and by customers using an organisation's products or services.

Harvesting and growing your own products, such as fruit, vegetables, and herbs, and using foraged ingredients could be touched upon in relation to sustainability. However, if discussing foraged ingredients, the dangers of misidentification must be stressed.

National Unit Support Notes (continued)

Unit title: Food Waste and Sustainability (SCQF level 5)

Learners could also discuss barriers to organisations and individuals introducing changes that could improve their carbon footprint, such as cost, time, denial for the need for change, etcetera.

Guidance on approaches to assessment of this unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Learners could be assessed on portfolios of evidence they have compiled covering the performance criteria and evidence requirements for outcomes 1 and 3, and the theory parts of outcome 2.

Assessor feedback and observation checklists could be used in the assessment of the performance/produce evidence for outcome 2. In addition, learners could include food diaries, product specifications, photographs, etcetera in their portfolios detailing:

- ◆ How they have reviewed and improved their skills to reduce food waste.
- ◆ The range of preservation methods they have considered for the three methods they decided to use to preserve surplus food products.
- ◆ Research they have carried out into the use of food by-products and the processes involved in their creation of an alternative product using one food by-product that would normally be disposed of.

Opportunities for 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 Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the evidence requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at www.sqa.org.uk/e-assessment.

National Unit Support Notes (continued)

Unit title: Food Waste and Sustainability (SCQF level 5)

Opportunities for developing Core and other essential skills

Problem Solving: Critical Thinking at SCQF level 5

For all outcomes, learners will be demonstrating the Core Skill component of Critical Thinking at SCQF level 5, when they demonstrate their knowledge of how to reduce food waste and identify sustainable practices that could be adopted in their industry sector. This will include:

- ◆ Investigating where food waste comes from and what happens to it when it leaves an organisation.
- ◆ Outlining the impact of food waste on an organisation and the environment.
- ◆ Reviewing food preparation and cooking skills to identify improvements to reduce food waste.
- ◆ Exploring food preservation techniques that could be used for surplus foods to reduce waste and ways to use food by-products rather than disposing of them.
- ◆ Exploring the use of resources in an organisation and identifying changes that could be made to reduce any harmful impact.
- ◆ Outlining what is meant by net zero and exploring how an organisation can work towards reducing its carbon footprint.
- ◆ Calculating the carbon footprint of a range of products/ingredients

Learners undertaking this unit will also develop aspects of other Core Skills, for example:

- ◆ Communication (Written Communication (Reading)).
- ◆ Numeracy (Using Number).
- ◆ Information and Communication Technology (ICT) (Accessing Information).

History of changes to unit

Version	Description of change	Date

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General information for learners

Unit title: Food Waste and Sustainability (SCQF level 5)

This section will help you decide whether this is the unit for you by explaining what the unit is about, what you should know or be able to do before you start, what you will need to do during the unit and opportunities for further learning and employment.

The purpose of this unit is to introduce you to sustainability in industry, with a particular focus on food waste. You will explore where food waste comes from, the impact that it has on the environment, as well as actions that can be taken to ensure the efficient use of all resources in the workplace.

You will also gain an understanding of your own responsibility to minimise food waste and how to adopt sustainable practices in the workplace.

You do not have to have any previous experience to be able to undertake this unit.

This unit involves theory-based learning and practical activities, covering:

- ◆ Finding out how food waste is generated and the impact that it has on the environment.
- ◆ Practising the use of different methods to preserve surplus food products.
- ◆ Exploring how to use food by-products rather than disposing of them and using your findings to create an alternative product.
- ◆ How an organisation can adopt sustainable practices and reduce its carbon footprint.

Assessment of this unit will test your knowledge and understanding of food waste and sustainability as well as your practical skills in the use of preservation methods and creation of new uses for food-by products.

Completion of this unit will also enable you to develop Core Skills in:

- ◆ Problem Solving (Critical Thinking).
- ◆ Communication (Written Communication (Reading)).
- ◆ Numeracy (Using Number).
- ◆ Information and Communication Technology (ICT) (Accessing Information).

After completion, you could progress to other National Units at SCQF levels 5/6, for example in hospitality, professional cookery, bakery, food production, and/or seek employment in a relevant role.