



National Unit specification: general information

Unit title: Measuring and Mixing (SCQF Level 5)

Unit code: FT9Y 11

Superclass: NE

Publication date: October 2011

Source: Scottish Qualifications Authority

Version: 01

Summary

The purpose of this Unit is to provide the candidate with the ability to select the correct ingredients, weigh and measure them in the correct proportions, then mix them using the correct methods for the task. They will gain competences in the use of suitable utensils and implements for the chosen piece of equipment where applicable and be aware of times, temperatures and speeds required to process a selection of mixes for further processing. This Unit is suitable for school leavers, employees in the food industry and people wishing to enter the baking industry. This is a mandatory Unit within the National Certificate in Bakery (SCQF level 5) but may also be taken as a free standing Unit.

Outcomes

- 1 Explain the importance of selection and measuring out raw materials accurately.
- 2 Identify types of mixing equipment and carry out a variety of mixing operations in a safe, hygienic manner.
- 3 Control temperature, time and speed throughout mixing.

Recommended entry

While entry is at the discretion of the centre, candidates would normally be expected to have attained one of the following, or equivalent: NPA in *Bakery G9T5 44* or *Hospitality: Practical Cookery Int.1 C201 10*.

General information (cont)

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Credit points and level

1 National Unit credit at SCQF Level 5 (6 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

Achievement of this Unit gives automatic certification of the following Core Skills component:

- ◆ Critical Thinking at SCQF level 4

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit specification.

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

Explain the importance of selecting and measuring out raw materials accurately.

Performance Criteria

- (a) Explain the importance of selecting the correct ingredient according to instructions.
- (b) Identify any ingredients that do not comply with the specifications.
- (c) Compare the effect of variations and inaccuracies in measuring , weighing , volume and mass
- (d) Explain the importance of accurate measuring equipment.

Outcome 2

Identify types of mixing equipment and carry out a variety of mixing operations in a safe hygienic manner.

Performance Criteria

- (a) Select a suitable mixer and utensil, according to the task, whilst following safety and hygiene procedures.
- (b) Use a suitable mixer and utensils safely and hygienically for mixing, according to written/oral instructions.
- (c) Prepare a range of mixes safely and hygienically, using appropriate methods, according to instructions.

Outcome 3

Control temperature, time and speed throughout mixing

Performance Criteria

- (a) Describe the effect of time, speed and temperature on a range of mixes.
- (b) Produce a range of mixes, observing controls of temperature, time and speed throughout the mixing process.
- (c) Record all requested information regarding the mixes in respect of temperatures, times and speeds.
- (d) Compare the range of mixes against industry standards.

National Unit specification: statement of standards (cont)

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Evidence Requirements for this Unit

To achieve the Unit candidates will be required to give written and/or oral, product and performance evidence to show that they have achieved all of the Performance Criteria detailed within the three outcomes of the Unit. Evidence is required to demonstrate that the candidates have achieved both practical applications and the underpinning knowledge content of the three outcomes and performance criteria.

All activities should be compliant to current Health and Safety and Hygiene Legislation.

Outcome 1

Written/oral/recorded evidence is required which includes:

- ◆ an explanation of the importance of selecting the correct ingredients according to instructions provided
- ◆ identification of quality points of the ingredients
- ◆ comparison of the effect of inaccurate weights/measures over a the full range of main ingredients:
 - flours
 - fats
 - sugar/syrup
 - liquids
 - aerators
 - fruits
- ◆ explanation of the importance of accurate weights and measures

Outcome 2

Written and/or oral evidence which includes:

- ◆ description of a minimum of three different types of measuring and weighing equipment including volumetric, digital and balance
- ◆ description of a minimum of four different types of mixing equipment including: planetary, spiral, high speed, conventional
- ◆ description of a minimum of three different techniques, including whisking, beating and kneading

Performance/product evidence required which includes:

- ◆ selection of the correct mixer and utensil according to a given task
- ◆ safe and hygienic use of a suitable mixer and utensils according to a given task
- ◆ preparation of a range of mixes safely and hygienically, using appropriate methods according to given tasks, which include:
 - sieve dry ingredients
 - warm eggs before use
 - temper fats
 - wash fruits
 - make up pre mixes

All of the above must be demonstrated at least once.

National Unit specification: statement of standards (cont)

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Outcome 3

Written/recorded/oral product and performance evidence which includes:

- ◆ a description of the effect of time, speed and temperature on a range of mixes. The range of mixes to include:
 - fermented dough
 - savoury pastry
 - sweet pastry
 - sponge batter
 - plain cake batter
 - fruited cake batter
 - powder aerated dough and
 - powder aerated batter
- ◆ a written oral or recorded record of the effect of time, speed and temperature on the specified range of mixes
- ◆ production of a minimum of four products from a given specification, using the correct machinery and utensils. The products must include one each of the following:
 - cake
 - sponges
 - doughs
 - pastes

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 40 hours.

Guidance on the content and context for this Unit

This Unit is a mandatory Unit within the National Certificate in Bakery (SCQF level 5), but can also be taken as a free-standing Unit.

This Unit is aligned to the following Improve Food and Drink Sector Skills Council National Occupational Standards:

- ◆ 286 *Select weigh and measure bakery ingredients*
- ◆ 288 *Prepare and mix craft dough*
- ◆ 306 *Prepare and mix craft flour confectionery*

In this Unit candidates are required to identify, select, prepare, weigh/measure, mix, process, bake and finish of a range of products, that would enable them to develop to a higher level of skills and expertise either independently or as a skilled operator within a food organisation.

They will learn about:

- ◆ **Outcome 1:** ingredient selection for mixes, suitability of ingredients. Types of measuring and weighing equipment, techniques and the importance of accurate weights and measures
- ◆ **Outcome 2:** the suitability of mixing machines and implements in a range of products, how to use mixers in a safe hygienic manner, eg bread, cake, powder goods, sponges and pastry
- ◆ **Outcome 3:** mix products to specific instructions observing time speeds and temperatures.

Candidates would benefit from having knowledge and/or skills in bakery ingredients and craft baking.

This Unit could be integrated with *Flour Confectionery Processes* (SCQF Level 6), *Bakery Ingredients* (SCQF Level 5), and *Craft Baking* (SCQF Level 5)

This Unit should prepare candidates for progression to higher level Bakery Units and awards or into employment or self-employment.

Guidance on learning and teaching approaches for this Unit

For all Outcomes candidates would benefit from:

- ◆ working as a class to produce a range of products with a variety of premixes for the processes required
- ◆ working in small groups to measure ingredients while other groups could mix the products and others recording temperatures, times and machine speeds
- ◆ working individually to produce a range of products

National Unit specification: support notes (cont)

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Guidance on approaches to assessment for this Unit

The following approaches to assessment are suggested:

- Outcome 1:** decision making/matching exercise of mixing techniques to machine type and restricted response questions (six mixing methods) and (ten questions minimum)
- Outcome 2:** practical activities of mixing techniques across the range of products on a minimum of four occasions
- Outcome 3:** accurate recording of information pertaining to time, temperature and speeds of the mixing techniques across the range

Outcomes 1 and 3 can be integrated.

Time should be allowed for any necessary re-assessment.

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 Communication 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)*.

Opportunities for developing Core Skills

In this Unit candidates will select the correct ingredients, weigh and measure them in the correct proportions, then mix them using the correct methods for the task. They will gain competences in the use of the suitable utensils and implements for the chosen piece of equipment where applicable and be aware of the times, temperatures and speeds required to process a selection of mixes for further processing.

Candidates will:

- ◆ select materials, ingredients and justify their reasons for doing so
- ◆ weigh and measure ingredients and calculate proportions
- ◆ calculate times and speeds
- ◆ rectify faults and adjust calculations to reflect this
- ◆ use computers to learn about a variety of methods and ingredients
- ◆ follow written instructions and explain what they are doing to others
- ◆ work in groups to carry out a variety of tasks

As they are doing this Unit candidates will develop aspects of the Core Skills in *Problem Solving, Working with Others, Communication, Information and Communication Technology (ICT)* and *Numeracy*.

National Unit specification: support notes (cont)

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Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

History of changes to Unit

Version	Description of change	Date

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