

Title	Demonstrate knowledge of ingredient and baking science used in a commercial bakery		
Level	4	Credits	12

Purpose	<p>This unit standard is for people working or intending to work as a baking tradesperson in a commercial bakery.</p> <p>People credited with this unit standard are able to demonstrate knowledge of the application of scientific principles to baking; the use of premixes, concentrates, and frozen doughs; the aeration of doughs and batters; bakery product nutrition; bakery products and specific diet requirements; bakery secondary ingredients; and bakery flavourings, colours and spices.</p>
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Classification	Food and Related Products Processing > Baking
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Available grade	Achieved
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Explanatory notes

Assessment information

This unit standard must be assessed against in a commercial bakery or in a simulated environment that demands performance equal to that required in a commercial bakery. Evidence generated during assessment against this standard must meet applicable workplace procedures and must be consistent with industry practice. Such knowledge is available in relevant training manuals and reference texts. No one textbook or other source of information is envisaged, as new approaches to commercial baking and baking products are published regularly.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of the application of scientific principles to baking.

Evidence requirements

- 1.1 The effects of temperature variations are explained when applied to mixing and baking of doughs and batters.
- 1.2 The basic physics of heat generation and work are explained when applied to mixing and baking of doughs and batters.

1.3 The changes in the states of matter of doughs, batters, and baked products during their development are explained.

Range solids, liquids, gases, emulsions, suspensions, foams.

1.4 Variations of pH levels of doughs and batters are explained in terms of their effect on baking processes and products.

Range yeast fermentation, staling and spoilage, sourdough breads, aerating agents.

Outcome 2

Demonstrate knowledge of the use of premixes, concentrates, and frozen doughs in a commercial bakery.

Evidence requirements

2.1 Premixes and concentrates are compared and classified in terms of their ingredients and use.

2.2 Frozen doughs are compared and classified in terms of formulation and degree of processing.

2.3 Premixes, concentrates, and frozen doughs are described in terms of advantages and disadvantages.

2.4 Uses of premixes, concentrates, and frozen doughs are described in terms of method and technique.

Outcome 3

Demonstrate knowledge of the aeration of doughs and batters in a commercial bakery.

Evidence requirements

3.1 Aeration is explained in terms of function in the baking process.

3.2 The methods of aeration are explained for doughs and batters.

Range mechanical, biological, physical, chemical

Outcome 4

Demonstrate knowledge of bakery product nutrition.

Evidence requirements

4.1 Bakery products are described in terms of nutritional characteristics and values.

Range products – bread, cakes, biscuits, pastry

characteristics – proteins, carbohydrates, fibre, vitamins, minerals, fats.

Outcome 5

Demonstrate knowledge of bakery products and specific diet requirements.

Evidence requirements

5.1 Bakery ingredients are described in terms of their allergenic characteristics.

Range milk, eggs, wheat, gluten, tree nuts, peanuts, sesame seeds.

5.2 Bakery products are described in terms of how they meet specific diet requirements.

Range specific diet requirements may include but not limited to – low fat, low sugar, low salt, low carbohydrate, vegetarian, vegan, halal, kosher.

Outcome 6

Demonstrate knowledge of bakery secondary ingredients.

Range chocolate, sweeteners, dough conditioners, emulsifiers, improvers, flour treatment agents, oxidising agents, aerating agents, acidity regulators, processing aids, fat replacers, enzymes.

Evidence requirements

6.1 Secondary ingredients are described in terms of state and form.

Range may include – volume, temperature.

6.2 Secondary ingredients are described in terms of function in a recipe.

6.3 Secondary ingredients are described in terms of their typical use.

Outcome 7

Demonstrate knowledge of bakery flavourings, colourings, and spices.

Evidence requirements

7.1 Flavourings, colourings, and spices are described in terms of function in a recipe.

7.2 Flavourings, colourings, and spices are described in terms of their typical use.

Planned review date	31 December 2021
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 March 2016	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz at qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.