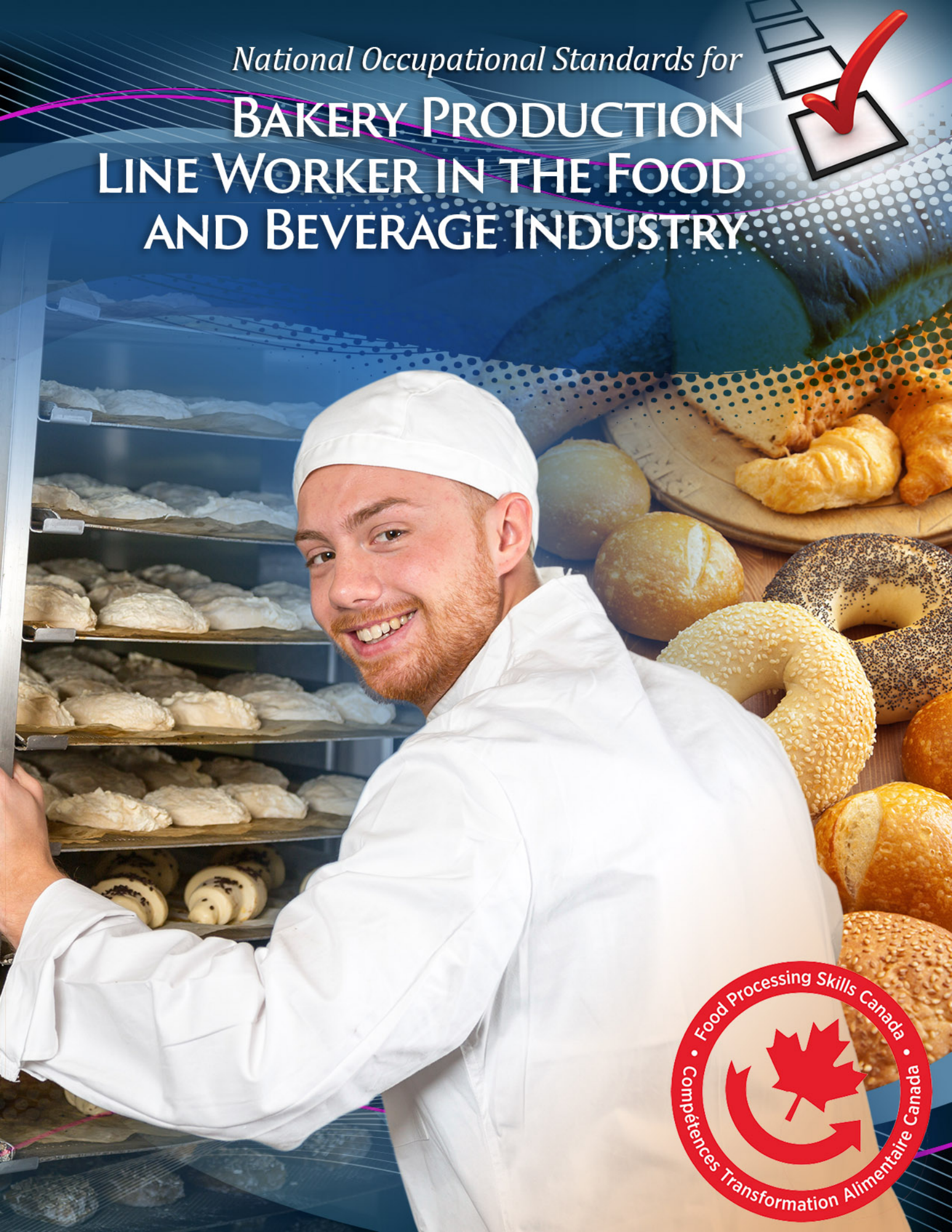
National Occupational Standards for

Bakery Production Line Worker in the Food and Beverage Industry



Food Processing Skills Canada • Compétences Transformation Alimentaire Canada

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INTRODUCTION

National Occupational Standards (NOS) are the essential ingredient of Food Processing Skills Canada's commitment to professionalizing the food and beverage manufacturing industry. With industry and educational partners, the organization has developed more than 30 standards in the following key professional categories:

- Food Safety
- Facility Maintenance
- Marketing
- Production
- Research & development
- Sales
- Logistics
- Human Resources
- Finance

The development of these national occupational standards is part of a national multi-year project, Professionalizing the Food and Beverage Industry, which is funded by Employment and Social Development. The incredible success to date in developing industry NOS is a result of collaborative action by Food Processing Skills Canada, the Government of Canada and the Canadian food and beverage manufacturing industry in raising the standards of employment and building a workforce that is highly qualified and resilient.

Employers and employees understand that NOS are an essential resource in documenting the major job competencies needed to perform well in specific food and beverage manufacturing job. Standards also guide the development of job descriptions, essential skills profiles, and language benchmarks. NOS are valued by employers and HR professionals in performance management and assessment, skills training and career development vis-à-vis the Learning and Recognition Framework. For educators, NOS are the preferred reference document for reviewing and creating curriculum and developing new professional designations.

As part of the 'professionalizing the industry journey', NOS is also the required first step in national certification for specific job titles and industry-led national accreditation of training curriculum. This is an exciting time for the industry in building workforce confidence with clearly defined standards and expectations and attracting the next generation of employees to the fulfilling jobs available.

ABOUT US | FOOD PROCESSING SKILLS CANADA

Food Processing Skills Canada (FPSC) is the food and beverage manufacturing industry's workforce development organization. As a non-profit, located in Ottawa with representatives across Canada, we support food and beverage manufacturing businesses from coast to coast in developing skilled and professional employees and workplace environments.

Our work directly and positively impacts industry talent attraction, workforce retention and employment culture. We care about assisting the industry in finding, training, and retaining the very best people for the job.

Through our partnerships with industry, associations, educators, and all levels of government in Canada, FPSC has developed valuable resources for the sector, including **the Food Skills Library™, Canadian Food Processors Institute™, FoodCert™ and Labour Market Information Reports.**

FOOD PROCESSING SKILLS CANADA'S NATIONAL OCCUPATIONAL STANDARDS DEVELOPMENT METHODOLOGY

Beginning in 2014 and for the following seven years, FPSC and subject matter experts committed to developing the first competency framework for the Canadian food and beverage manufacturing industry. This was a significant, but ultimately rewarding, effort that culminated in a plan to develop a Learning and Recognition Framework, including key initiatives such as National Occupational Standards. The Learning and Recognition Framework has been finalized, and the process of developing NOS has proven successful.

FPSC's National Occupational Standard Development Pathway

- Establish a National Advisory Committee
- Conduct National Job Analysis
- Develop Job Competencies Content
- Conduct Stakeholder Review and Validation
- Approve the National Occupational Standard
- Publish new NOS in both official languages

BAKERY PRODUCTION LINE WORKER | NATIONAL OCCUPATIONAL STANDARD

The NOS for Bakery Production Line Worker document describes 62 main tasks Bakery Production Line Workers perform in their job. Each main task lists the **job performance indicators** and **knowledge requirements** that an experienced, fully proficient Production Line Worker Baker in Food Manufacturing must be able to demonstrate when performing the task.

DEFINITION | BAKERY PRODUCTION LINE WORKER

Bakery Production Line Worker is involved in the production of dough, leavened and unleavened bread, crackers, cookies, cakes, pastries, and other baked or parbaked products in the manufacturing facility. In these facilities, they use high-volume mixing machines, ovens, and other equipment, which may be automated, to mass-produce standardized baked goods. They carefully follow instructions for production schedules and recipes.

Production line workers involved in baking follow recipes, weigh and mix ingredients, operate various types of equipment and monitor processes to ensure the consistency and safety of bakery products.

This set of standards relates to the requirements of a front-line production line worker working in wholesale commercial baking who may specialize in one or a few processes/products or be competent in all processes/products.

This does NOT include:

- Retail baking or in-store baking in which a facility creates products only sold through their own outlet. There are other national standards for this.
- Packaging, e.g., slicing, wrapping, etc.
- Products where the bakery item is a component of the product, e.g., frozen or take-and-bake pizza with toppings.

WHY NATIONAL OCCUPATIONAL STANDARDS MATTER

National Occupational Standards (NOS) are the essential building blocks to professionalizing the Canadian food and beverage processing industry workforce. Each NOS provides complete clarity on the expectations and job competencies required to succeed in a specific role.

For employers, job seekers and HR professionals, a NOS takes the guessing out of job competencies and the specific skills a person needs to perform with success. And for students and educators, the skills pathway to achieving requirements for an occupation are standardized and readily available.

The standards also provide a general base of information on which a business can build its HR policies and procedures.

IF YOU ARE AN EMPLOYER

Employers in the Canadian food and beverage processing industry understand that people are their greatest asset. When employees are primed for the job, accomplishments in the workplace follow. NOS are resources that provides specific benefits to employers:

- ✓ Ensure accurate job descriptions for recruitment and employee advancement
- ✓ Guide new hire assessments based on specific benchmarked occupation criteria
- ✓ Set standards and key performance indicators for employee achievements
- ✓ Connect workforce development strategy with business objectives
- ✓ Guarantee accurate review of employee performance
- ✓ Contribute to employee retention, job satisfaction and job performance.

IF YOU ARE A STUDENT

For students exploring job opportunities and career pathways, NOS provide the level of detail necessary to find the perfect occupational fit.

Students can easily check out occupational profiles to learn more about the various occupations and skills, and what is required for job success.

IF YOU ARE AN EMPLOYEE

Having an in-depth understanding of the skills requirements for an occupation makes certain that an employee has every opportunity to achieve success.

NOS bring clarity to setting and reaching career goals by assisting with an evaluation of an employee's skills and identifying any training requirements that may be required.

NOS are also valuable in mentoring peers or newly hired employees. Mentoring helps others benefit from a leader's knowledge and experience and provides the basis for positive team building.

NOS will help employees with the following questions:

- ✓ What occupational skills do I already have?
- ✓ What skills do I need to advance or improve my performance?
- ✓ What additional training do I need to further my career?

IF YOU ARE A TEACHER, GUIDANCE COUNSELLOR OR TRAINING PROVIDER.

For trainers and educators, NOS are the obvious resource for creating or redesigning training programs to meet the needs of industry and prepare individuals for successful careers. NOS provide the framework around which to build the content of new programs and curriculums. NOS directly support:

- ✓ Developing a strategic view of future learning requirements
- ✓ Developing or updating curriculum and evaluation tools
- ✓ Identifying group or organizational training needs
- ✓ Integrating standards into on and off-the-job training programs
- ✓ Identifying common and transferable skills in the occupation
- ✓ Improving the relationship between formal training and industry needs

Go to the **Appendix** for examples of how to use the job competencies for:

- ♦ Performance Management
- ♦ Training
- ♦ Interview
- ♦ On-boarding

DEFINITION

DEFINITION OF OCCUPATION

A bakery Production line worker is involved in the production of dough, leavened and unleavened bread, crackers, cookies, cakes, pastries, and other baked or parbaked products in a manufacturing facility. In these facilities, they use high-volume mixing machines, ovens, and other equipment, which may be automated, to mass-produce standardized baked goods. They carefully follow instructions for production schedules and recipes.

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- Packaging, e.g., slicing, wrapping, etc.
- Products where the bakery item is a component of the final product, e.g., frozen, or take-and-bake pizza with toppings

NOC & NOS | RELATION

The National Occupational Standard (NOS) for Bakery Production Line Workers relates to the occupations classified by the Government of Canada under the 946 National Occupational Code (NOC)

RELATED JOB TITLES

The Bakery Production Line Worker comprises job competencies for:

- Chocolate refiner
- Pasteurizer operator
- Citrus Juice extractor

BAKERY PRODUCTION LINE WORKER AND OTHER OCCUPATIONS IN AN ORGANIZATION

Bakery Production Line Worker is part of a larger competency framework developed by Food Processing Skills Canada for the food and beverage industry. See all the 635 competencies units in Appendix B.

STANDARDS BY FUNCTION

The industry competency framework includes national occupational standards (competencies) for the functions below. For each function, there are standards for management, supervisory and operator level.

- Food Safety
- Food Production
- Research and Product Development
- Facility and Equipment Maintenance
- Supply-Chain and Logistics
- Finance
- Human Resources
- Sales
- Marketing

STANDARDS BY OCCUPATION

There are specific competency-based standards for the following occupations:

Food Processor Operator, HACCP Coordinator, Sanitation Worker, Food Safety Manager, Quality Assurance Manager, Laboratory Technician, Import/Export Clerk, Material Handler, Production Supervisor, Front Line Worker, and Food Process Control and Machine Operator.

ESSENTIAL SKILLS PROFILES

There are essential skills profiles for the following occupations:

Import/Export Clerk, Industrial Meat Cutter, Frontline workers, Team-lead, Millwright, Process Control & Machine Operator, Production Supervisor, Shipper Receiver, Material Handler, Food Science Technologist, Quality Assurance Manager, HACCP Coordinator and Sanitation Worker.

All these resources, plus "employee self-assessment skills checklists" and "curriculum against competencies checklists," will be available to download at the **largest online skills library database for the food manufacturing industry**. All National Occupational Standards, essential skills profiles, job descriptions, and checklists are available in **both official languages.**

Contact or visit Food Processing Skills Canada to access this information.

OVERVIEW OF COMPETENCIES FOR BAKERY PRODUCTION LINE WORKER

A. Commercial Baking

A.1 Prepare Ingredients for Bakery Products

- A.1.1 Sieve/sift flour
- A.1.2 Scale ingredients

A.2 Use Commercial Baking Techniques

- A.2.1 Mix bakery ingredients
- A.2.2 Extrude dough
- A.2.3 Bulk ferment dough
- A.2.4 Divide dough
- A.2.5 Preshape and rest dough
- A.2.6 Sheet/roll dough
- A.2.7 Laminate dough
- A.2.8 Cut sheeted/laminated dough
- A.2.9 Final shape dough
- A.2.10 Proof/final-proof bakery products
- A.2.11 Deposit batter
- A.2.12 Apply toppings/ decorations to unbaked products
- A.2.13 Deposit/inject filling into bakery products
- A.2.14 Boil bakery products
- A.2.15 Steam bakery products
- A.2.16 Bake/par-bake bakery products
- A.2.17 Fry bakery products
- A.2.18 Cool bakery products
- A.2.19 Apply icing/ glazes/ washes/ toppings/ decorations to bakery products
- A.2.20 Freeze bakery products

A.3 Produce Commercial Bakery Products

- A.3.1 Prepare raw dough products
- A.3.2 Prepare yeast-leavened bakery products
- A.3.3 Prepare unleavened bakery products
- A.3.4 Prepare crackers
- A.3.5 Prepare quick breads
- A.3.6 Prepare cookies
- A.3.7 Prepare cakes
- A.3.8 Prepare pastries
- A.3.9 Prepare Choux pastry
- A.3.10 Prepare short crust pastry products

B. Food Safety Management System

B.1 Comply with Food Safety Management System

- B.1.1 Comply with food safety management system

C. Pest Control

C.1 Comply with Facility Pest Control Program

- C.1.1 Comply with facility pest control program

D. Food Traceability

D.1 Comply with Food Traceability System

- D.1.1 Comply with food traceability system

E. Recalls

E.1 Follow Recall Plan

- E.1.1 Follow recall plan

F. Quality Management

F.1 Monitor Product Quality

- F.1.1 Take corrective action to ensure product quality

G. Equipment and Tools

G.1 Operate Food Processing Equipment

- G.1.1 Conduct pre-operation check on food processing equipment
- G.1.2 Start up food processing equipment
- G.1.3 Monitor food processing equipment operation
- G.1.4 Perform food processing changeovers
- G.1.5 Troubleshoot minor food processing equipment problems

H. Sanitation

H.1 Handle and Prepare Chemicals

- H.1.1 Handle chemicals

H.2 Clean Food Processing Equipment and Tools

- H.2.1 Prepare bakery processing equipment for cleaning and sanitization

I. Waste Management

I.1 Comply with Recycling Program

- I.1.1 Comply with recycling program

J. Health and Safety

J.1 Comply with Occupational Health and Safety Program

- J.1.1 Follow occupational health and safety program
- J.1.2 Participate in emergency preparation
- J.1.3 Participate in accident/incident investigations

J.2 Comply with Facility Security Program

- J.2.1 Follow facility security program
- J.2.2 Participate in security exercises and drills

K. Record Management

K.1 Complete Record Management Tasks

- K.1.1 Complete forms

L. Organizational Policies and Procedures

L.1 Comply with Organizational Policies and Procedures

- L.1.1 Comply with organizational policies and procedures/SOPs

M. Leadership

M.1 Manage Organizational Change

- M.1.1 Support organizational change

M.2 Demonstrate Professionalism

- M.2.1 Collaborate with team members
- M.2.2 Develop professionally
- M.2.3 Exhibit professional and ethical conduct
- M.2.4 Manage own stress
- M.2.5 Contribute to a solution-focused workplace

N. Communications

N.1 Communicate Effectively

N.1.3 Use hand signals
N.1.4 Use writing skills

HOW TO READ THE COMPETENCY UNITS

DEFINITION | JOB COMPETENCIES

Job competencies are a common language to describe the skills that the industry needs from its workers and the skills that educators need to design curriculum to train the workers.

A competency is a skill or ability to do something. The skills can be learned through training or experience and through a combination of practice and knowledge acquisition.

Job competency is the description of the ability of a worker to perform a job task. A worker, to be deemed competent, must demonstrate they have the ability to perform the task. A supervisor can assess if the worker has the ability in a task by observing the worker's behaviour and assessing the worker's knowledge of concepts needed to perform the task.

Each national occupational standards document describes the main tasks needed to perform in a particular job or function in the organization. For each task, the document lists the observable behaviours and knowledge requirements to perform the task. The observable behaviours are called performance indicators.

Both the performance and knowledge indicators are used to assess competency at work, level of competency to obtain a professional designation, level of competency of job candidates, readiness of a worker for a promotion, job performance and training needs. The performance and knowledge indicators are also used to create a curriculum that aims at developing competency in the performance of a work task.

DESCRIPTION OF TASK, PERFORMANCE AND KNOWLEDGE

For each task, the following information available:

PURPOSE OF THE TASK

Outlines the intent of the task

PERFORMANCE

Outlines specific observable tasks practitioners need to complete to demonstrate competency

KNOWLEDGE

Outlines underpinning knowledge needed to perform the task competently

VARIABLES, RANGE OF CONTEXT

Outlines the fluidity of the task according to organizational needs

Contextual Information helps readers understand the relevance and importance of the task to the occupation

LEVEL OF COMPLEXITY

Indicates the level of learning needed to be competent in the task. The levels are based on an adaptation of the Bloom's taxonomy: recall, remember, understand, apply, analyze, evaluate, create and transform.

ADDITIONAL INFORMATION

Level of Responsibility: Indicates if the competency applies to operator, supervisory or management level.

Autonomy: describes if the competency would be performed independently, or with the assistance or overview of another.

GLOSSARY

Provides a summary of terms, concepts, or acronyms

A. Commercial Baking

A1. Prepare Ingredients for Bakery Products

A.1.1 Sieve/sift flour
A.1.2 Scale ingredients

Job Competency

A.1.1 Sieve/sift flour

Reference Number: 3403

Purpose of the Task

Sieving/sifting flour removes lumps from flour before it is added into doughs and batters. Sifting is often completed to reuse flour from the line to aid production processes. Flours to be sieved may have a variety of characteristics, such as particle size and protein content, depending upon the type. Flour sieving/sifting equipment is commonly used as an efficient way to protect the quality of flour. Flour may be hand-fed into the equipment, e.g. 25 lb bags emptied into sifter by hand, or operate on a large scale when installed under silos. It is important that this preparation is completed correctly to ensure the quality and food safety of the ultimate end product

Performance

1. Use required Personal Protective Equipment (PPE), e.g. respiratory protection, safety footwear, bump cap, gloves, mask
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Ensure flour is correct type for recipe, e.g. pastry/cake flour, bread flour
4. Empty flour bags into sieve/sifter or start flow of flour
5. Monitor sieving/sifting of flour:
    - ensure flour is being fed and is moving smoothly through screens/sieve
    - remove lumps rejected by equipment
    - report presence of contaminants (e.g. hair, bugs, rodent droppings, metal shavings) if found
6. Transfer flour to mixing or use in other production processes
7. Maintain traceability documentation, e.g. record lot numbers for added ingredients

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Types of flour, characteristics and uses
5. Potential allergens and contaminants
6. Food safety standards
7. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
8. Importance of meeting task completion timelines
9. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
10. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Types and amounts of flour needed for end product
3. Quality of flour
4. Sieving/sifting may or may not be required depending upon the facility and the flour received

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Frequency

Continuously	Every hour or more	Hourly	Once per Shift	Once per Day	Once per Week	Once per Month	Once per Year
	X	X	X	X			

Job Competency

A.1.2 Scale ingredients

Reference Number: 3404

Purpose of the Task

Scaling must be done to ensure everything is in place to create consistent bakery products. Items that need to be scaled other than flour can include dough improvers, leavening agents, seeds, fats, sugars, salt, xanthan gum and flavourings. Ingredients may need be processed before being added into the final dough or batter. It is important that this preparation is completed correctly to ensure the quality and food safety of the ultimate end product.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Report signs of contamination, e.g. bugs, rodent droppings
4. Ensure perishable and regulated ingredients (e.g. eggs, dairy, yeast) are held in correct environment
5. Check traceability documentation to ensure ingredients meet food safety regulations, e.g. presence of allergens
6. Process ingredients, as required, e.g. roast garlic or vegetables, toast nuts, soak dried fruits with glycerin, coat nuts with starch
7. Weigh/measure ingredients (e.g. flours, liquids, flavourings, dough improvers, inclusions), as required:
    - use appropriate scale for ingredients
8. Pre-mix flour blends (e.g. gluten free) and custom mixes (e.g. Speculaas blend, bread base), as required
9. Prepare pre-ferments/starters, as required, e.g. mix required ratios of flour, yeast and water
10. Store unused ingredients for later use:
    - date and label, as required
11. Transfer ingredients to next stage, e.g. mixer
12. Maintain traceability documentation, e.g. record lot numbers for added ingredients

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Types of ingredients and their purposes, e.g. chocolate or cinnamon to add flavour, bran to add dietary fiber
5. Impact of flavourings and inclusions on in-process and end product
6. Metric and imperial systems of measurement
7. Potential allergens and contaminants
8. Quality standards for ingredients
9. Characteristics of end product
10. Spoilage indicators of ingredients
11. Food safety standards
12. Types of yeast and their uses, e.g. instant, fresh, active dry
13. Types of preferments and their characteristics, e.g. sponge, biga, poolish
14. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
15. Importance of meeting task completion timelines
16. Importance of yield
17. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
18. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Types and amounts of flavourings and inclusions used for different end products

2. Quality of flavourings and inclusions
3. Level of automation when handling/using flavourings and inclusions

Glossary

- **DOUGH IMPROVER:** an ingredient that aids in dough processing and consistency. Can be poser, paste or liquid concentrate.
- **INCLUSION:** small additives to bakery formulations to impart unique textures, flavors, colors or other desirable properties. They are available as slices, flakes, nuggets, pellets or other forms.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Frequency

Continuously	Every hour or more	Hourly	Once per Shift	Once per Day	Once per Week	Once per Month	Once per Year
X	X	X					

A. Commercial Baking

A2. Use Commercial Baking Techniques

A.2.1 Mix bakery ingredients
A.2.2 Extrude dough
A.2.3 Bulk ferment dough
A.2.4 Divide dough
A.2.5 Preshape and rest dough
A.2.6 Sheet/roll dough
A.2.7 Laminate dough
A.2.8 Cut sheeted/laminated dough
A.2.9 Final shape dough
A.2.10 Proof/final-proof bakery products
A.2.11 Deposit batter
A.2.12 Apply toppings/ decorations to unbaked products
A.2.13 Deposit/inject filling into bakery products
A.2.14 Boil bakery products
A.2.15 Steam bakery products
A.2.16 Bake/par-bake bakery products
A.2.17 Fry bakery products
A.2.18 Cool bakery products
A.2.19 Apply icing/ glazes/ washes/ toppings/ decorations to bakery products
A.2.20 Freeze bakery products

Job Competency

A.2.1 Mix bakery ingredients

Reference Number: 3405

Purpose of the Task

Mixing batters and doughs according to specifications distributes ingredients uniformly throughout the batch dough/batter. If the in-process ingredients are not mixed correctly it can create an inconsistent product and/or result in the loss of a whole batch.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Select and attach required mixing bowls and components:
   - ensure power is off before attaching components
   - ensure correct component for type of dough/batter
4. Set meters on dispensing equipment for bulk raw materials (e.g. flour, water, oil), as required
5. Set mixing time based on size and weight of dough/batter and type of equipment, as required
6. Carry out required procedures to combine ingredients as specified in formula/recipe:
   - follow addition instructions for ingredients
   - mix/blend ingredients in correct order
   - mix/blend ingredients at specified speed and time, as required
7. Monitor process:
   - assess quality (colour, texture, smell, consistency) of dough/batter before introducing/adding each ingredient, as required
   - compare mixture to quality standards for colour, texture, smell, consistency, as required
   - monitor temperature of mixing environment and in-process product
   - notify appropriate personnel if in-process product does not meet specifications
8. Store dough/batter for later use:
   - date and label, as required
9. Monitor transfer of in-process products to next stage, e.g. bowl, hopper, extruder, divider
10. Maintain traceability documentation, e.g. batch number, mixing time, dough temperature, mixer personnel, total kg/lbs produced

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Types of mixing equipment, e.g. vertical, spiral, horizontal and continuous
5. Mixing equipment components, operating controls, parameters, and capacity
6. Dough/batter recipe including ingredients, order of introduction of ingredients, mixing time, specified temperature of the mixed dough/batter
7. Types of yeast and their uses, e.g. instant, fresh, active dry
8. Purpose of mixing and impact on final product, including indicators of under-worked or over-worked dough/batter:
   - under-mixed dough/batters can result in irregular rising or dry flour spots
   - over-mixed dough/batters can result in dense end products
9. Temperature requirements for mixing
10. Impacts of dough improvers on dough function
11. Potential allergens and contaminants
12. Mixing methods, e.g. stirring, creaming
13. Bakery science, e.g. chemical, biological and physical reactions in mixing
14. Characteristics of in-process and end products
15. Food safety standards

16. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
17. Importance of meeting task completion timelines
18. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
19. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Amount of ingredients being processed
2. Types and quantities of ingredients used
3. Level of automation
4. Types of equipment and tools used, e.g. bowl cutter, large capacity mixer
5. Different equipment will have different impacts on dough/batter
6. Changes in raw material/in-process product suppliers
7. Types of products being produced, i.e. the type of dough will affect the temperature and mixing time requirements
8. Equipment configuration, e.g. removable mixing bowls require intermediate sanitation procedures
9. Environmental conditions, e.g. humidity, temperature

Glossary

- CREAMING METHOD: frequently used for cake batters, butter and sugar are "creamed," or beaten together until smooth and fluffy. Eggs and liquid flavoring are mixed in, and finally dry and liquid ingredients are added in. The creaming method combines rise gained from air bubbles in the creamed butter with the rise from the chemical leaveners. Gentle folding in of the final ingredients avoids destroying these air pockets.
- SHORTENING METHOD (also known as the biscuit method): used for biscuits and sometimes scones, solid fat (whether lard, butter, or vegetable shortening) is cut into flour and other dry ingredients using a food processor, pastry blender, or two hand-held forks. The layering from this process gives rise and adds flakiness as the folds of fat melt during baking.
- STIRRING METHOD also known as the quick-bread method, blending method, or muffin method): used for pancakes, muffins, corn bread, dumplings, and fritters, calls for measurement of dry and wet ingredients separately, then quickly mixing the two. Often the wet ingredients include beaten eggs, which have trapped air that helps the product to rise. In these recipes, the fats are liquid, such as cooking oil. Usually mixing is done using a tool with a wide head such as a spoon or spatula to prevent the dough from becoming over-beaten, which would break down the egg's lift.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.2.2 Extrude dough

Reference Number: 3406

Purpose of the Task

After mixing, dough may be extruded into single pieces of various shapes and sizes. Extrusion equipment pushes dough through an opening using pressure to create single pieces. Extruding dough is completed for a variety of products such as buns, cookies, pastries and flourless breads. If this is performed incorrectly it can cause financial loss and quality issues as finished products may be under- or overweight or the incorrect size/shape.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Attach correct extruder die or nozzle, as required
4. Set controls to required parameters, for example:
    - speed of conveyor belt
    - speed of augers
    - size/weight of in-process product
    - specifications for cutter
    - pressure
    - temperature
5. Monitor feeding of mixed dough into hopper:
    - ensure speed of extruder and conveyors are synchronized
6. Ensure equipment is producing single pieces with desired characteristics, e.g. shape, size, weight
7. Monitor transfer of extruded pieces to next stage
8. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Bakery science, e.g. effects of aging dough during processing
6. Characteristics of in-process and end products, e.g. dough consistency
7. Food safety standards
8. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
9. Importance of meeting task completion timelines
10. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
11. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Different types and amounts of dough of various textures
2. Types of die and nozzle attachments, e.g. different diameters, shapes, configurations
3. Environmental conditions, e.g. humidity, temperature

Glossary

EXTRUDE: to push dough through an opening using pressure to create single pieces that can be baked.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.3 Bulk ferment dough

Reference Number: 3407

Purpose of the Task

Fermentation is a series of biological reactions that produce leavened dough. Bulk fermentation occurs before the dough is divided/shaped. This step is often skipped in large industrial settings. This process is used to 'rise' dough when yeast and bacteria convert sugars into carbon dioxide. Fermentation is used to produce a wide variety of leavened bakery products, including hotdog and hamburger buns, sourdough breads, English muffins, bagels, pretzels, croissants, pastries and raised/yeast doughnuts. If this step is done poorly it can result in the disposal of an entire batch of dough, which leads to financial and productivity losses.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set controls of fermenting chamber/room to required parameters for proofing or retarding:
    - temperature
    - humidity
    - time
4. Place dough into fermentation chamber/room, according to SOP
5. Monitor dough for consistency at regular intervals, e.g. check product temperature
6. Transfer fermented dough into mixer for second stage mixing, as required
7. Monitor transfer of fermented dough to next stage, e.g. into trough/hopper
8. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Bakery science, e.g. ideal conditions for yeast and fermentation, biological reactions involved in fermentation, importance of dough temperature
6. Dough systems, e.g. sponge dough, straight dough
7. Characteristics of in-process and end products
8. Food safety standards
9. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
10. Importance of meeting task completion timelines
11. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
12. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Types and amounts of mixed dough of various textures
2. Types of artisan fermented products that are produced
3. Number of phases involved in fermentation
4. Production method requirements, e.g. sponge dough, straight dough
5. Environmental conditions, e.g. temperature, humidity
6. Dough sugar content
7. Retarding is an optional process

Glossary

- **FERMENTATION**: an anaerobic biological process that converts sugars and starches into simpler substances. In baking, it causes yeast and bacteria to convert sugars into carbon dioxide, among other things. This is what causes the dough to rise.
- **LEAVEN:** to add a substance to bread or another food made with flour to make it increase in size when cooked

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Job Competency

A.2.4 Divide dough

Reference Number: 3408

Purpose of the Task

After mixing or bulk fermentation, dough can be divided or portioned into manageable pieces that are moved onto further processing. Before it can be further processed, dough must be divided through the use of equipment to produce the desired size, shape, weight and texture. Equipment used for dividing dough includes rotary/extrusion dividers, piston dividers, ram and knife dividers, pocket dividers and stress-free dividers. This also may be done manually. If this is performed incorrectly it can cause financial loss as a whole batch may need to be discarded.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set controls to required parameters, for example:
    - speed of screw or dough pump
    - speed of conveyor belt
    - cuts per minute
    - knife speed
    - pressure in chamber or barrel
4. Monitor feeding of mixed dough into chamber or barrel
5. Monitor weight throughout dividing process:
    - ensure scale readings are within correct limits
6. Maintain speed of process, i.e. ensure mixed dough does not stand for too long
7. Ensure equipment is producing dough in desired size, shape and weight
8. Monitor transfer of divided dough to next stage
9. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Impacts of holding dough for too long, e.g. dough becomes gassy, dough becomes too warm
6. Importance of weight standards
7. Metric and Imperial systems of measurement
8. Characteristics of in-process and end products
9. Food safety standards
10. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
11. Importance of meeting task completion timelines
12. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
13. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Different types and amounts of mixed dough of various textures, e.g. wholewheat dough has bran content and a higher friction coefficient when moving through equipment
2. Environmental conditions, e.g. temperature, humidity

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

A.2.5 Preshape and rest dough

Reference Number: 3409

Purpose of the Task

Preshaping and resting dough is completed to ensure consistency and even appearance before the final shaping. Product is allowed to rest for a specified period of time. Equipment used for preshaping and resting dough includes conical rounders, resting belts, and overhead proofers. Consequences of improper preshaping and resting dough include ripping and shredding of the in-process product during the final shaping.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set controls of preshaping equipment to required parameters, for example:
    - speed of belt or cone
    - speed of conveyor belt
    - bar or track angle
    - bar or track length
    - amount of dusting flour
4. Monitor feeding of divided dough into preshaping equipment:
    - ensure speed of preshaping equipment and conveyors are synchronized
5. Set controls of resting equipment, e.g. overhead proofer, for example:
    - speed of conveyor belt
    - temperature
6. Ensure equipment is producing dough in desired size, shape and weight:
    - ensure dough is not sticking, e.g. dusted with flour
7. Ensure dough completes intermediate resting period, as required
8. Monitor transfer of preshaped dough to next stage, e.g. by belt, conveyer, slide
9. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Characteristics and processes of flour technology, e.g. purpose of resting
6. Factors affecting correct amounts of dusting flour, e.g. temperature, hydration level, as required
7. Characteristics of in-process and end products
8. Food safety standards
9. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
10. Importance of meeting task completion timelines
11. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
12. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Different types and amounts of dough of various textures
2. Types of equipment used for preshaping and resting
3. Equipment may be automatic or semi-automatic
4. Environmental conditions, e.g. temperature, humidity

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Job Competency

A.2.6 Sheet/roll dough

Reference Number: 3410

Purpose of the Task

Sheeting/rolling dough is accomplished by using rollers to flatten dough into uniform sheets of even, specified thickness. Sheeting/rolling is completed for a variety of products such as pizza dough, croissants, cookies, crackers, pastries and unleavened bread, as well as artisan leavened breads such as ciabatta. Sheeting/rolling may help to develop the gluten structure. It is important to create a uniform product so that all pieces require the same baking time. In a commercial setting, sheet/roll equipment may be used together with laminating equipment for products like croissants; and/or with cutting/slicing equipment to create products such as cookies. Sheeting equipment may have attachments such as slicers, wire cutters, ploughs and rollers.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Load equipment with dough, as required, e.g. load dough trough
4. Set controls of sheeting equipment to required parameters, for example:
    - speed of conveyor belt
    - desired thickness of the dough
    - weight settings
    - flour dusting level
5. Monitor feeding of dough into sheeting equipment:
    - ensure speed of sheeting equipment and conveyors are synchronized
    - ensure equipment is producing product that meets desired parameters, e.g. uniform thickness
    - remove malformed product to be reworked, as required
6. Monitor transfer of rolled/sheeted in-process product to next stage, e.g. by belt, conveyer, slide
7. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Bakery science, e.g. dough structure
6. Impact of dough improvers on dough
7. Characteristics of in-process and end products
8. Food safety standards
9. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
10. Importance of meeting task completion timelines
11. Process flow from start to finish:
    - impacts of the preceding stage on the current process stage
    - effects of the current process stage on the next stage
12. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Different product types
2. Level of automation
3. Types of equipment and attachments
4. Environmental conditions, e.g. temperature, humidity

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Job Competency

A.2.7 Laminate dough

Reference Number: 3411

Purpose of the Task

Laminating dough involves creating multiple layers of dough and fat that are folded over themselves a specified number of times. Laminating is completed for a variety of products such as puff pastries, croissants and soda crackers. In a commercial setting, laminating equipment is often used together with sheeting and rolling equipment. Laminating equipment may be semi- or fully automatic. Laminating is completed in a temperature-controlled environment. Temperature is critical when laminating, because if the fat becomes too warm it will break down and become absorbed into the dough instead of maintaining dough layers.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Ensure input products are available in required quantities, if applicable, e.g. fat such as butter or margarine, sheeted/rolled dough
4. Set controls of laminating equipment to required parameters, for example:
    - speed of conveyor belt
    - pressure, i.e. height/weight of rollers
5. Monitor feeding of sheeted/rolled dough and fat into laminating equipment:
    - ensure speed of conveyors and fat depositor are synchronized
6. Monitor temperature of dough, e.g. use laser thermometer, inspect consistency of dough
7. Ensure equipment is producing continuous sheet of dough with desired characteristics, e.g. texture, colour, thickness
8. Wrap and refrigerate, as required
9. Monitor transfer of laminated dough to next stage, e.g. by belt, conveyer, slide
10. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Bakery science, e.g. purpose of lamination, importance of temperature, thickness of layers
6. Impact of dough improvers on dough
7. Characteristics of in process and end products, e.g. number of laminated layers
8. Indicators of incorrectly laminated dough, e.g. oily dough, ripped/torn dough
9. Food safety standards
10. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
11. Importance of meeting task completion timelines
12. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
13. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Different product types that require lamination, e.g. croissants, pastry, crackers
2. Level of automation
3. Types of equipment
4. Environmental conditions, e.g. humidity, temperature
5. Type of fat used, e.g. butter, lard, rolled in shortening

6. Use of other ingredients during lamination, e.g. sugar, chocolate, cheese

Glossary

DOUGH LAMINATION: process of creating multiple separate layers of dough and fat when making pastry.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.8 Cut sheeted/laminated dough

Reference Number: 3412

Purpose of the Task

Cutting is completed to ensure consistent and uniform final products. This is the last step before final proofing and/or boiling, baking/parbaking, steaming or frying. Failure to cut correctly leads to products that do not meet quality specifications for sale.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set controls of cutting attachments, as required, for example:
    - size
    - shape
    - design
    - separation
    - scrap return
4. Monitor feeding of sheeted/laminated dough into cutting equipment:
    - ensure speed of cutting equipment and conveyors are synchronized, as required
    - ensure equipment is producing product that meets desired parameters, e.g. uniform size, shape, weight
    - remove malformed product to be reworked, as required
5. Monitor transfer of in-process product to next stage, e.g. to be placed on pans
6. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Types of cutting equipment, characteristics, operating controls and capacity
6. Characteristics of in-process and end products
7. Food safety standards
8. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
9. Importance of meeting task completion timelines
10. Process flow from start to finish:
    - impacts of the preceding stage on the current process stage
    - effects of the current process stage on the next stage
11. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Different product types
2. Level of automation
3. Types of equipment and attachments
4. Environmental conditions, e.g. humidity, temperature

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Job Competency

A.2.9 Final shape dough

Reference Number: 3413

Purpose of the Task

Final shaping is completed to ensure consistent and uniform final products. This is the last step before final proofing and/or boiling, baking/parbaking, steaming or frying. Failure to shape correctly leads to products that do not meet quality specifications for sale.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set controls of molding equipment, as required, for example:
    - roller thickness
    - side gate width
    - top plate height
    - plate size
4. Monitor feeding of mixed/laminated dough into molding equipment:
    - ensure speed of molding equipment and conveyors are synchronized
    - ensure equipment is producing product that meets desired parameters, e.g. uniform size, shape, weight
    - remove malformed product to be reworked, as required
5. Monitor transfer of in-process product to next stage
6. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Impact of dough improvers on dough
6. Characteristics of in-process and end products
7. Food safety standards
8. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
9. Importance of meeting task completion timelines
10. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
11. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Different product types
2. Level of automation
3. Types of equipment and attachments
4. Environmental conditions, e.g. humidity, temperature

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.10 Proof/final-proof bakery products

Reference Number: 3414

Purpose of the Task

Proofing occurs after the bulk dough has been divided into single units. It can be completed at an intermediate stage, for example before sheeting, or as a final proof. Final proofing is the stage of fermentation that involves the final rise after the dough is shaped and just before it is baked. Equipment is used to control the speed and quality of proofing during this stage. This equipment includes proof boxes, final tray proofers, final tunnel proofers and spiral conveyor proofers. Proofing is used to produce a wide variety of yeast-leavened bakery products, including hotdog and hamburger buns, breads, raised/yeast doughnuts, and viennoiserie. If this step is done poorly, for instance, if humidity is too high or too low or temperature is too high or too low, it can result in quality issues such as crust formation or a sticky appearance. These quality issues can lead to financial loss.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set controls of chamber/room to required parameters for proofing or retarding:
    - temperature
    - humidity
    - time
4. Place dough into proofing equipment according to SOP, as required
5. Monitor dough for quality, e.g. shape, old dough, resiliency
6. Monitor transfer of dough to next stage
7. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Bakery science, e.g. ideal conditions for proofing, biological reactions involved in proofing
5. Impact of dough improver on dough
6. Characteristics of in-process and end products
7. Food safety standards
8. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
9. Importance of meeting task completion timelines
10. Process flow from start to finish:
    - Impacts of preceding stage on current process stage
    - effects of current process stage on next stage
11. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Types and amounts of dough of various textures
2. Level of automation
3. Proofing conditions

Glossary

- **LEAVEN:** to add a substance to bread or another food made with flour to make it increase in size when cooked
- **PROOFING**: a step in the preparation of yeast bread and other baked goods where the dough is allowed to rest and rise a final time before baking. During this rest period, yeast ferments the dough and produces gases,

thereby leavening the dough.

- **Intermediate proofing:** the short rest period between dough-diving and the final sheeting/moulding.
- **Final proof:** the continuation of yeast fermentation, which allows the moulded dough piece to replace and expand. A dough piece that has gone through the sheeting and moulding process is degassed and lacks volume. Final proofing produces an aerated dough with optimum shape and volume when baked.

- **VIENNOSERIE:** breakfast pastries made in the style of Vienna, Austria

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.2.11 Deposit batter

Reference Number: 3415

Purpose of the Task

After mixing, batter is deposited, often by pumps, into pans/moulds/trays so that it can be further processed, such as being baked. Depositing batter is completed for a variety of products such as quick breads, cakes, cupcakes, cake doughnuts, macarons and meringues. Products may be marbled and require depositing/mixing of different batters. Products may be filled at this stage by depositing half of the batter, adding filling, then depositing remaining batter. Equipment used for depositing batter includes a wide variety of depositor nozzles and pumps that vary in their level of automation. If this is performed incorrectly it can cause financial loss and quality issues as finished products may be under- or overweight or have an inconsistent appearance.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Fill hopper above depositor, as required
4. Set controls to required parameters of formulation, for example:
    - quantity of batter per pan/mould/tray
    - speed of conveyor belt
5. Ensure pans/moulds/trays are available in correct quantities, if applicable
6. Monitor automatic feeding of batter into depositor chamber
7. Monitor automatic depositing process, as required:
    - ensure scale readings are within required weight limits
    - monitor air pressure levels, e.g. psi
8. Deposit batter into pans/moulds/trays if being controlled manually, as required
9. Marble batters by layering/mixing, as required
10. Monitor transfer of pans/moulds/trays to next stage
11. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Bakery science, e.g. mechanical versus chemical leavening, specific gravity
6. Characteristics of in-process and end products
7. Food safety standards
8. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
9. Importance of meeting task completion timelines
10. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
11. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Different types and amounts of batter of various textures, e.g. foam
2. Level of automation, i.e. placed by operator for each fill or entirely automatic
3. Layered or marbled products may require separate or multiple layers of deposited batter
4. Some batters may have inclusions such as nuts and dried fruits
5. For filled products, depositing is completed in stages, e.g. fill pan to half, add cream cheese icing filling, top with batter

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.12 Apply toppings/ decorations to unbaked products

Reference Number: 3416

Purpose of the Task

After being mixed and shaped, some products require toppings/decorations before baking/parbaking/frying/steaming/boiling. In-process products may be topped with seeds, nuts, washes or seasonings to enhance nutrition, flavour and/or appearance. Cakes, cookies, cupcakes, quick bread loaves and muffins may be topped with chocolate, sprinkles, nuts, streusels, sugar or other ingredients to enhance flavour, appearance and texture. Equipment used for toppings and decorations includes a variety of depositors and applicators, such as waterfall applicators or topping applicators. Topping equipment may be automatic or semi-automatic. If this is performed incorrectly it can cause quality issues as finished products may not meet weight or appearance standards

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Score proofed products or monitor product scoring, as required:
    - apply required scoring pattern
4. Set controls of topping or decoration applicators/depositors to required parameters, for example:
    - quantity of topping
    - speed of conveyor belt
    - distribution of topping, wash or decoration
5. Ensure supply of topping, wash and decoration is adequate, if applicable
6. Monitor feeding of topping, wash or decoration into applicator chamber
7. Monitor the process, as required, for example:
    - scale readings are within correct weight limits
    - application of adherent, e.g. egg wash
    - consistency of topping coverage on product
    - quantity of topping or decoration per item
8. Add additional toppings by hand, as required
9. Monitor transfer of bakery products to next stage
10. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Types of applicator and depositor equipment used for toppings, washes and decoration, their characteristics and capacities
5. Characteristics of in-process and end products
6. Food safety standards
7. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
8. Importance of meeting task completion timelines
9. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
10. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Types and amounts of products to be topped/decorated
2. Types and amounts of toppings, washes and decorations

3. Types of applicators
4. Automatic versus semi-automatic equipment

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.13 Deposit/inject filling into bakery products

Reference Number: 3417

Purpose of the Task

Fillings can be deposited/injected into bakery products to add flavours and textures. Depositing/injecting fillings like creams, jellies, fruits, chocolate, meats and custards is completed for a variety of products such as muffins, cakes, cupcakes, cinnamon buns, doughnuts, tarts, pies and profiteroles. Depositing/injecting equipment may be stand-alone or an attachment for other equipment. If this is performed incorrectly it can cause quality issues as finished products may be under- or overweight.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set controls to required parameters, for example:
    - type of filling
    - quantity of filling
    - speed of conveyor belt
    - position of injecting needle
4. Ensure filling supply is adequate, if applicable
5. Monitor feeding of filling into chamber, as required
6. Monitor the automatic deposit/injection process, as required:
    - ensure scale readings are within weight correct limits
    - ensure product is positioned correctly for filling
    - visually inspect products to ensure deposit/injection is correct
7. Deposit/inject filling into products if being done manually, as required, e.g. place doughnut onto injector
8. Monitor transfer of bakery products to next stage, e.g. by belt, conveyer, slide
9. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Characteristics of end product
5. Food safety standards
6. Types and characteristics of fillings, , e.g. bake stable, non-bake stable
7. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
8. Importance of meeting task completion timelines
9. Process flow from start to finish:
    - Impacts of preceding stage on current process stage
    - effects of current process stage on next stage
10. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Types and amounts of products to be filled
2. Types and amounts of fillings
3. Level of automation, i.e. placed by operator for each fill/deposit or entirely automatic
4. Products may be deposited/injected before or after baking/parbaking/frying/steaming

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.14 Boil bakery products

Reference Number: 3418

Purpose of the Task

Boiling bakery products, like bagels, helps to set the crust before they go into the oven to bake. The longer the product is boiled, the thicker and chewier the crust will become. Improper boiling can have a negative impact on the product shape, the crust structure and the overall texture and mouth-feel of the finished bakery product.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare hot liquid bath:
   - use additives, as required, e.g. baking soda, barley malt, honey
4. Submerge proofed unbaked bakery products into hot liquid bath
5. Monitor boiling process:
   - monitor temperature
   - control boiling time, as specified in recipe
   - monitor appearance of product, e.g. pliable crust
6. Monitor removal of boiled bakery products from hot liquid bath
7. Monitor transfer of products to next stage, e.g. dryer
8. Maintain traceability documentation, e.g. record lot numbers for added ingredients and batch code of bakery product

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Boiling processes, e.g. water temperature requirements
6. Purpose of boiling bakery products, i.e. to form thick and chewy crust
7. Characteristics of in-process and end products
8. Food safety standards
9. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
10. Importance of meeting task completion timelines
11. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
12. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. The bakery product and the specified crust texture will have a direct impact on boiling time
3. Additions to hot water bath

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.15 Steam bakery products

Reference Number: 3419

Purpose of the Task

Steaming bakery products is a moist heat cooking method that creates a delicate, soft product with a glossy, even appearance. Steamed bakery products include steamed buns (e.g. char siu, bao, baozi, mantou, siopao), steamed cakes (e.g. idli, bánh da lợn), steamed dumplings (e.g. jiaozi, Acadian poutine rapee), steamed doughnuts (e.g. pączki) and steamed breads (e.g. Boston brown bread, steamed bagels, steamed pretzels). This may also include stuffed steamed products (eg. tamales, loh mái gāi lotus sticky rice dumplings, moi moi Nigerian steamed bean cakes). Proper steaming creates crustless, light textured products. These products may be filled with sweet or savoury fillings before or after steaming. Consequences of not steaming products correctly include product defects such as surface irregularities, dryness, wetness or dense textures. Note: this competency applies to an individual who is operating the equipment to steam bakery products.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
    - use protection for handling high temperatures, e.g. face shields, rubber aprons
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Inspect steamer, as required, to ensure:
    - water is in boiler, as required
    - correct use of food-grade water treatment chemicals, as required
    - cleanliness
    - no presence of scale accumulation
4. Set controls for steamer, for example:
    - temperature
    - time
    - pressure, as required
5. Place product racks or trays in steamer, as required.
6. Monitor steaming process:
    - monitor temperature using thermometer
    - control steaming time, as specified in recipe or production record
    - monitor appearance of product, e.g. splitting, volume, uneven surface, moisture accumulation
7. Inspect product to ensure product conformity, e.g. colour, size, shape
8. Monitor transfer of steamed products to next stage
9. Maintain production records and traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Steam and high temperature work practices
5. Potential allergens and contaminants
6. Steaming processes, e.g. temperature requirements, heat distribution, use of convection
7. Purpose of steaming bakery products, e.g. to form glossy surface, to avoid crust formation
8. Characteristics of in-process and end products
9. Food safety standards
10. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
11. Importance of meeting task completion timelines
12. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
13. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Use of fillings and different inclusions
3. Environmental conditions, e.g. temperature, humidity
4. Thermometers may be manual or integrated into equipment, e.g. IoT thermometer, SCADA

Glossary

- **INTERNET OF THINGS (IoT):** a network of physical objects that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet.
- **SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)**: a category of software applications for controlling industrial processes, which is the gathering of data in real time from remote locations in order to control equipment and conditions.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.16 Bake/par-bake bakery products

Reference Number: 3420

Purpose of the Task

Baking uses heat to cook bakery products and can be completed in continuous or batch ovens. During the baking process, heat is gradually transferred from the surface of the product to the centre. Baking at the wrong temperature, in the wrong pans or for the wrong times will result in bakery products that are over- or under-baked, fail to meet quality specifications and cannot be sold to customers. Improper baking can lead to loss of profits, particularly in large batch and continuous baking processing facilities.
When par-baking, bread or dough products are partially baked and then rapidly cooled or flash-frozen for storage. Par-baking allows for finishing or refreshing of a bakery product at a later time by the customer or end user. Par-baked products may have minimal or no colour development but are fully baked to appropriate internal temperature. Consequences of incorrect par-baking include having the products fully baked instead of par-baked, a product that is raw inside, and/or product quality issues for the customer or end-user who is finishing or refreshing the product such as dryness or crust separation.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Arrange oven racks, as required
4. Pre-heat oven to specified temperature if batch processing
5. Ensure oven program is appropriate for product being baked
6. Prepare conveyor if continuous processing:
    - set speed of conveyor, temperature controls, speed of panning conveyor, and baking time
7. Verify that pans are filled to standard
8. Load filled pans into ovens, as required
9. Monitor baking/par-baking process, for example:
    - control speed of filled baking pans entering the oven, if using continuous process and tunnel oven
    - view products through door or observation window of tunnel oven
    - detect signs of over-baking or under-baking, e.g. product colour
    - control oven programs, e.g. temperature, steam injection
10. Spot check internal temperature
11. Unload ovens when baking/par-baking process is completed, as required
12. Check quality of products coming out of the oven, e.g. colour, shape:
    - remove any non-conforming products from line
13. Remove baked products from pans, as required:
    - use specified method to ensure baked products are not damaged
    - control vacuum system to remove baked product from baking pans, if applicable
14. Adjust or reset oven program in preparation for next batch of product if batch processing
15. Transfer or monitor transfer of baked bakery products to next stage, e.g. cooling station, rack
16. Maintain traceability documentation, e.g. record lot numbers for added ingredients and batch code of bakery product

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Characteristics of properly proofed dough, e.g. increase in volume, springy texture, large bubbles in the dough
6. Types of ovens (e.g. direct-fired oven (DFO), in-direct fired oven (IFO), electric, peel brick, rack, reel/revolving tray, conveyorized/traveling tray, tunnel, hybrid) and their programs
7. Types of oven baking processes, e.g. continuous and batch baking

8. Types of fuels and oven heating systems, e.g. electric, gas, oil
9. Characteristics of in-process and end products
10. Food safety standards
11. Fire safety standards
12. Cooling procedures for all baked products
13. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
14. Importance of meeting task completion timelines
15. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
16. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. The type of oven will impact what pans are used (if any) and how they are positioned in the oven
3. Type of baking process used, i.e. batch or continuous baking
4. Some products require steam injection in differing quantities as part of this process
5. Product specifications for baking versus par-baking

Glossary

- **BAKING:** the process of cooking using dry heat, usually in some sort of oven.
- **BATCH BAKING:** process in which one batch is made and finished before the other is started. A rack of dough is put in the oven, only when the batch is finished will a new batch be put in.
- **CONTINUOUS BAKING:** process that goes on continuously. Products are continuously going in and out of the oven using a belt that runs through the oven.
- **PAR-BAKING:** a cooking technique in which a bread or dough product is partially baked and then rapidly frozen for storage.
- **PROOFING:** final rise of the dough that takes place after being shaped into a load and before it is baked.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.2.17 Fry bakery products

Reference Number: 3421

Purpose of the Task

Frying is a cooking process that uses oil or fat to impart unique textures, flavours and aromas to a range of bakery products, including cannoli, doughnuts, churros, fry dough, and fry bread (Bannock). Fried products are fully cooked. Improper frying can result in issues with overall texture (e.g. greasy), or colour (e.g. too dark or too light). Use of old oil or fat can produce quality issues such an off smell, e.g. rancid smell.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set correct temperature of fat/oil, as specified within recipe
4. Load bakery products into frying equipment as per equipment specifications:
    - ensure proofed products are dry before entering fryer
5. Prepare conveyor if using continuous frying process by setting:
    - speed of conveyor
    - temperature controls
    - speed of panning
    - frying time
6. Monitor frying process:
    - control speed of product entering the fryer, if using continuous frying equipment
    - view products within fryer
    - verify temperature of fat/oil
    - detect signs of over-frying or product breakdown
    - detect signs of fat/oil breakdown
    - control frying equipment parameters (e.g. temperature) to achieve final product of uniform quality
7. Unload fryers when process is complete, as required
8. Check quality of products coming out of the fryer, e.g. colour, aroma, texture, shape:
    - remove any non-conforming products from the line
9. Adjust or reset frying equipment controls in preparation for next batch of product if batch processing
10. Transfer or monitor transfer of fried bakery products to next stage
11. Maintain traceability documentation, e.g. record lot numbers for added ingredients and batch code of bakery product

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Frying methods, e.g. surface frying, deep-fat frying
6. Types of frying equipment, for example:
    - batch frying equipment, i.e. kettle or jacketed vessel
    - continuous frying equipment, i.e. automated system comprised of kettle, conveyor and extraction equipment
7. Characteristics of fat/oil (e.g. smoke point) and indicators of fat/oil breakdown
8. Characteristics of in-process and end products
9. Food safety standards
10. Fire safety standards
11. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
12. Importance of meeting task completion timelines
13. Process flow from start to finish:
    - impacts of preceding stage on current process stage

- effects of current process stage on next stage

14. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. The type of frying process, i.e. deep vs. shallow frying
3. Types of equipment, e.g. batch vs. continuous frying
4. Type of fat/oil

Glossary

- **DEEP-FAT FRYING:** a frying process in which the product is totally covered with oil.
- **SURFACE FRYING:** a frying process in which about half of the product is covered with oil at a time. This frying process is used in the production of doughnuts.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.2.18 Cool bakery products

Reference Number: 3422

Purpose of the Task

Cooling bakery products decreases the internal temperature of product and sets the structure of the product. The ideal cooling process for bakery products takes a minimum amount of time and effort while minimizing product waste. If cooling is completed incorrectly, it can result in quality issues during packaging such as slicing difficulties, a soggy crust or mould growth.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Arrange racks, as required
4. Set controls for cooling equipment, as required, including for example:
    - time
    - conveyor speed
    - fan speed
5. Cool bakery products:
    - control speed of cooling conveyor and fans if continuous processing
    - place on racks for cooling if batch processing
    - adjust other equipment parameters, as required, e.g. temperature
6. Monitor process:
    - monitor temperature of in-process product according to specifications
    - verify products have been cooled to the required internal temperature
    - compare cooled in-process product to quality standards, e.g. size/dimensions, weight, colour, texture
    - redirect in-process product that does not meet specifications, as directed
7. Transfer or monitor transfer of cooled bakery products to next stage
8. Manage emptied baking pans, for example:
    - remove excess waste (e.g. leftover dough, flour) from baking pans
    - stack empty pans in designated area
9. Maintain traceability documentation, e.g. record lot numbers for added ingredients and batch code of bakery product

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Cooling procedures for baked products
6. Impacts of cooling on in-process product
7. Types of cooling equipment, e.g. spiral cooler, cooling tunnel, fans
8. Characteristics of in-process and end products
9. Food safety standards
10. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
11. Importance of meeting task completion timelines
12. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
13. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Type of cooling process used, e.g. continuous, batch
2. Level of automation
3. Seasonal adjustments due to ambient temperature and humidity
4. Product size impacts rate of cooling

Glossary

- **BATCH PROCESSING:** process in which one batch is made and finished before the other is started. An-process product is put in/on equipment and only when the batch is finished will a new batch be put in/on the same equipment.
- **CONTINUOUS PROCESSING:** process that goes on continuously. In-process products are continuously going in and out of equipment using a conveyor belt.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.2.19 Apply icing/ glazes/ washes/ toppings/ decorations to bakery products

Reference Number: 3423

Purpose of the Task

Icing, glazes, washes toppings, dusts and/or decorations can be applied to baked or fried products to add flavour and visual appeal. Icings, glazes, washes, toppings, dusts and decorations are applied to a variety of products such as cakes, cookies, cupcakes and doughnuts. The application of icing, glazes and washes may be very simple, such as a sugar glaze on a doughnut, or more complicated and customized, such as a sheet cake with icing and writing on top. Decorations may be added such as coloured sugar or sprinkles. Application equipment may be stand-alone or an attachment for other equipment. This task may be entirely automated through the use of equipment, or semi-automated if a variety of hand-depositing equipment is used. If this is performed incorrectly it can cause quality issues as finished products may not meet appearance standards.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Set controls to required parameters, for example:
    - type of icing, glaze, wash, topping or decoration
    - quantity of icing, glaze, wash, topping or decorations
    - design to be applied
    - speed of conveyor belt
    - coverage or centering
    - temperature of icing, glaze, wash, topping or decoration
4. Ensure supply of icing/glaze/wash/topping/decoration is adequate, if applicable
5. Prepare icing/glazes/washes/toppings/decorations, as required, e.g. agitated, brought to correct temperature
6. Monitor automatic feeding of icing/glaze/wash/topping/decoration into chamber:
    - ensure restocking, as required
7. Apply icing/glazing/decorations onto baked goods if being done manually, as required, e.g. use hand depositing nozzle to place icing in correct location
8. Monitor the automatic icing/glazing/washing/topping/decorating process, as required, ensuring:
    - scale readings are within correct weight limits
    - appearance standards are being met
    - consistency of coverage on product
    - temperature is in correct range
    - viscosity is appropriate
9. Transfer or monitor transfer of bakery products to next stage, e.g. by belt, conveyer, slide
10. Maintain traceability documentation, e.g. record lot numbers

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Characteristics of end product
5. .Types, characteristics and appropriate applications of icing/glazes/washes/toppings/decorations, e.g. pectin-based glaze, fondant
6. Food safety standards
7. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
8. Importance of meeting task completion timelines
9. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
10. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Types and amounts of products to be iced/glazed/washed/topped/decorated
2. Types and amounts of icing/glazes/washes/toppings/decorations
3. Level of automation, i.e. placed by operator for each fill or entirely automatic
4. Icing/glazes/washes/toppings/decorations may be applied when the product is still warm, or after cooling.
5. Environmental conditions, e.g. humidity, temperature
6. Products may include more than one type of icing/glazes/washes/toppings/decorations

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
	X	

Job Competency

A.2.20 Freeze bakery products

Reference Number: 3424

Purpose of the Task

Freezing is an applied thermal preservation technology commonly used in commercial bakeries to extend the product's shelf life. Freezing prevents mold spoilage and preserves freshness. Freezing unfermented or partially fermented dough, batters, par-baked or finished products can help commercial bakeries to be ready with more products for periods of peak consumer demand. It can allow for longer transportation times. Freezing equipment such as blast freezers, spiral freezers and warehouse freezers are used. Incorrect freezing can result in product quality issues such as freezer burn, ice crystal formation, flaking, and crust separation that may require the disposal of an entire batch of dough, batter, par-baked or finished products.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Arrange racks, as required
4. Set controls for freezing equipment, as required, including for example:
    - temperature
    - time
    - speed
5. Freeze bakery products:
    - ensure products are ready for freezing
    - place on racks in freezer if batch processing
    - control speed of freezing conveyor if continuous processing
6. Monitor process:
    - monitor temperature of in-process product according to specifications; adjust, as required
    - verify products have been cooled to the required internal temperature
    - ensure products are covered or sealed properly, as required
    - compare frozen in-process product to quality standards, e.g. size/dimensions, weight, colour, texture
    - redirect in-process product that does not meet specifications, as directed
7. Store or monitor transfer of frozen bakery products to next stage:
    - date and label, as required
8. Maintain traceability documentation, e.g. record lot numbers for added ingredients and batch code of bakery product

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Freezing requirements for different proportions of yeast, sugar, fat, i.e. shorter or longer freezing times depending upon composition
6. Impacts of freezing on in-process product, e.g. indicators of poor freezing
7. Types of freezing equipment, e.g. blast freezer, spiral freezer
8. Characteristics of in-process and frozen end product
9. Food safety standards
10. Importance of meeting task completion timelines
11. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
12. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Type of freezing process used, e.g. continuous, batch
2. Level of automation
3. Seasonal adjustments due to ambient temperature and humidity
4. Water, sugar and salt levels of product will affect freezing
5. Products may be frozen before or after packaging

Glossary

- **BATCH PROCESSING:** process in which one batch is made and finished before the other is started. In-process product is put in/on equipment and only when the batch is finished will a new batch be put in/on the same equipment.
- **CONTINUOUS PROCESSING:** process that goes on continuously. In-process products are continuously going in and out of equipment using a conveyor belt.
- **PAR-BAKING:** a cooking technique in which a bread or dough product is partially baked and then rapidly frozen for storage.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

A. Commercial Baking

A3. Produce Commercial Bakery Products

A.3.1 Prepare raw dough products
A.3.2 Prepare yeast-leavened bakery products
A.3.3 Prepare unleavened bakery products
A.3.4 Prepare crackers
A.3.5 Prepare quick breads
A.3.6 Prepare cookies
A.3.7 Prepare cakes
A.3.8 Prepare pastries
A.3.9 Prepare Choux pastry
A.3.10 Prepare short crust pastry products

Job Competency

A.3.1 Prepare raw dough products

Reference Number: 3425

Purpose of the Task

Raw dough products include pizza doughs, bread doughs, sweet doughs, cookie dough, laminated doughs, phyllo doughs and shaped dough products such as ready-to-bake buns and croissants. Dough products can be sold to the consumer as-is, to an intermediary organization that will further process the dough or preserved by freezing for an organization's own future use.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare wet and dry ingredients:
    - sieve/sift flour, as required
    - scale ingredients, as required
4. Mix ingredients:
    - use mixing method outlined in recipe
5. Extrude dough, as required
6. Bulk ferment dough, as required
7. Preshape and rest dough, as required
8. Laminate dough, as required
9. Sheet/roll dough, as required
10. Cut sheeted/laminated dough, as required
11. Proof dough, as required
12. Apply toppings/decoration to raw dough products, as required
13. Monitor dough-making process:
    - compare in-process dough to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications, e.g. identify product that needs to be discarded
14. Freeze dough products
15. Store products, as required:
    - date and label, as required
16. Transfer or monitor transfer of products to next stage
17. Maintain traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Types of raw dough products, e.g. laminated dough, ready-to-bake buns
6. Impacts of dough improvers on dough
7. Types of equipment, e.g. mixers, laminating equipment, sheeting equipment
8. Types of dough systems, e.g. sponge dough, straight dough
9. Characteristics of in-process and end products
10. Food safety standards
11. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
12. Importance of meeting task completion timelines
13. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
14. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Types of raw dough products
3. Type of dough system, that is straight dough (no fermentation period) or fermented dough (sponge or liquid fermentation) has a direct impact on the processing steps for leavened bread products.
4. Environmental conditions, e.g. temperature, humidity

Glossary

- DOUGH SYSTEM: refers to the type of dough used to create the leavened dough product and include:
  - Sponge and dough (S&D) - a dough system where a bulk fermentation period is used, this process does not include a fermentation step after mixing. This method is commonly used in pan bread, buns and other bread varieties.
  - Straight dough - a breadmaking system or method in which all ingredients (dry and liquid) are placed in the mixer and the dough is then mixed to full development. Also known as 'no-time dough.' This method can be used to produce white pan bread, whole wheat bread and frozen dough
- FERMENTATION: an anaerobic biological process that converts sugars and starches into simpler substances. In baking, it causes yeast and bacteria to convert sugars into carbon dioxide, among other things. This is what causes the dough to rise.
- PROOFING: a step in the preparation of yeast bread and other baked goods where the dough is allowed to rest and rise a final time before baking. During this rest period, yeast ferments the dough and produces gases, thereby leavening the dough.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.3.2 Prepare yeast-leavened bakery products

Reference Number: 3426

Purpose of the Task

Yeast-leavened bakery products include sweet and savoury pretzels, yeast breads and buns (e.g. hot-cross bun), brioche, bagels, English muffins, croissant, yeast doughnuts, and varieties of single-layered dough and batter-style leavened flatbreads as well as double-layered leavened flatbreads. The three vital steps to preparing yeast-leavened bakery products are mixing, fermentation and baking/par-baking/frying. These must be performed correctly to ensure the quality of the finished product.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare wet and dry ingredients:
    - sieve/sift flour, as required
    - scale ingredients, as required
4. Use required dough system, e.g. prepare sponge and dough
5. Mix bakery ingredients:
    - use mixing method outlined in recipe
6. Extrude dough or pour batter, as required
7. Bulk ferment dough, as required
8. Divide dough, e.g. divide dough into single pieces of proper weight
9. Preshape and rest dough, as required
10. Laminate dough, as required
11. Sheet/roll dough, as required
12. Cut sheeted/laminated dough, as required
13. Final shape dough, as required
14. Final-proof dough
15. Prepare product for baking/par-baking/frying, for example:
    - score top of product according to required pattern, if required
    - apply toppings/decorations, e.g. seasonings, herbs, nuts, seeds
    - boil, as required, e.g. for bagels
16. Bake/par-bake/fry product:
    - set equipment controls for time and temperature based on recipe
17. Monitor baking/par-baking/frying process:
    - monitor temperature during process
    - compare in-process leavened bakery products to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications, e.g. inconsistent cooking communicated to maintenance, identify product that needs to be discarded
18. Remove baked/par-baked/fried leavened bakery products from pans:
    - take internal temperature of in-process leavened bakery products, as required
19. Cool baked/parbaked/fried leavened bakery products
20. Inject filling, as required, e.g. jelly into jelly doughnut
21. Apply icing/glazes/washes/toppings/decorations, as required
22. Freeze baked/par-baked leavened bakery products, as required
23. Store products, as required:
    - date and label, as required
24. Transfer or monitor transfer products to next stage
25. Maintain traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)

2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Types of leavened bakery products, for example:
    - single layered leavened flatbread made from dough, e.g. barbari, ciabatta, focaccia, naan and batter, e.g. blintzes, crepes, dosai
    - double-layered leavened flatbreads, e.g. pita, baladi, khobz and shami
    - sweet and savoury pretzels
    - doughnuts
    - sweet, savoury and lean yeast and sourdough breads and rolls
6. Flours used for leavened baking products, e.g. particle size, protein content
7. Impact of dough improvers on dough
8. Mixing procedures
9. Types of mixing equipment, e.g. vertical, spiral, horizontal and continuous
10. Types of dough systems, e.g. sponge and dough, straight dough
11. Characteristics of in-process and end products
12. Food safety standards
13. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
14. Importance of meeting task completion timelines
15. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
16. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Type of dough system, that is straight dough (no fermentation period) or fermented dough (sponge or liquid fermentation) has a direct impact on the processing steps for leavened bakery products.
3. Products may be baked or par-baked, with separate specifications for each
4. Sweet, savoury and lean products
5. Gluten-free yeast-leavened products are poured, not extruded
6. Environmental conditions, e.g. temperature, humidity

Glossary

- **DOUGH SYSTEM:** refers to the type of dough used to create the leavened dough product and include:
    - Sponge and dough (S&D) - a dough system where a bulk fermentation period is used, this process does not include a fermentation step after mixing. This method is commonly used in pan bread, buns and other bread varieties.
    - Straight dough - a method in which all ingredients (dry and liquid) are placed in the mixer and the dough is then mixed to full development. Also known as 'no-time dough.' This method can be used to produce white pan bread, whole wheat bread and frozen dough
- **FERMENTATION:** an anaerobic biological process that converts sugars and starches into simpler substances. In baking, it causes yeast and bacteria to convert sugars into carbon dioxide, among other things. This is what causes the dough to rise.
- **LEAVEN:** to add a substance to bread or another food made with flour to make it increase in size when cooked
- **PROOFING:** a step in the preparation of yeast bread and other baked goods where the dough is allowed to rest and rise a final time before baking. During this rest period, yeast ferments the dough and produces gases, thereby leavening the dough.
    - Intermediate proofing: the short rest period between dough-diving and the final sheeting/moulding.
    - Final proof: the continuation of yeast fermentation, which allows the moulded dough piece to replace and expand. A dough piece that has gone through the sheeting and moulding process is degassed and lacks volume. Final proofing produces an aerated dough with optimum shape and volume when baked.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.3.3 Prepare unleavened bakery products

Reference Number: 3427

Purpose of the Task

Unleavened bakery products are prepared without using rising agents. Most unleavened products are flatbreads. Some examples of unleavened bakery products include arepa, roti, matzo and flour/corn tortilla. Properly prepared unleavened products should be soft, flexible and strong. Improperly prepared products are tough and crumbly. Errors in preparation include incorrect sizing and under/over baking. Even though unleavened products have a lower moisture content than leavened bread products, they have a limited shelf-life and are prone to spoilage.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare wet and dry ingredients:
    - sieve/sift flour, as required
    - scale ingredients, as required
4. Mix ingredients
5. Divide dough, as required
6. Proof or rest dough, as required
7. Sheet/press/roll dough into required form, e.g. circle, square or rectangle
8. Pan dough, as required
9. Bake panned unleavened bakery products:
    - set equipment controls for time and temperature based on recipe
10. Monitor baking process:
    - monitor cooking temperature during process
    - compare cooked in-process unleavened bread products to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications, e.g. inconsistent cooking communicated to maintenance, identify product that needs to be discarded
11. Cool baked unleavened bread products:
    - remove baked products from pans, as required
12. Freeze baked unleavened bread products, as required
13. Store products, as required:
    - date and label, as required
14. Transfer or monitor transfer products to next stage
15. Maintain traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Types of unleavened bread products, e.g. arepa, roti, matzo, corn tortilla
6. Types of flour, e.g. bleached, unbleached, whole wheat
7. Ingredient measuring procedures
8. Mixing procedures and methods
9. Types of mixing equipment, e.g. vertical, spiral, horizontal
10. Characteristics of in-process and end products
11. Food safety standards
12. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
13. Importance of meeting task completion timelines
14. Process flow from start to finish:
    - impacts of preceding stage on current process stage

- effects of current process stage on next stage

15. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Mixing requirements to achieve correct dough development for the individual dough

Glossary

- **UNLEAVENED BREAD:** any of a wide variety of breads which are prepared without using raising agents such as yeast. Unleavened breads are generally flat breads; however, not all flat breads are unleavened. Unleavened breads, such as the tortilla and roti, are staple foods in Central America and South Asia, respectively.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Job Competency

A.3.4 Prepare crackers

Reference Number: 3428

Purpose of the Task

Crackers are made with flour, water, yeast or chemical leaveners, fat, sugar and other flavourings and inclusions. Improper preparation and/or baking of the dough can result in colour issues or in soggy, rather than crisp, crackers or shrinkage.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare wet and dry ingredients:
    - sieve/sift flour, as required
    - scale ingredients, as required
4. Use required dough system, e.g. prepare sponge and dough
5. Mix bakery ingredients:
    - use mixing method outlined in recipe
6. Ferment dough, as required, i.e. add yeast
7. Rest final dough at required time and temperature as outlined in recipe
8. Extrude dough
9. Sheet/roll dough
10. Final shape dough, e.g. use rotary cutter
11. Apply toppings, e.g. salt, herbs, seasoning, oil spray
12. Bake/fry prepared cracker dough:
    - set equipment controls for time and temperature based on recipe
13. Monitor baking/frying process:
    - monitor cooking temperature during process
    - compare cooked in-process products to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications
14. Apply toppings, as required, e.g. salt
15. Cool baked/fried crackers
16. Store products, as required:
    - date and label, as required
17. Transfer or monitor transfer products to next stage
18. Maintain traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Type of crackers, e.g. soda crackers (saltine-type), snack crackers (enzyme/chemical type), pita chips
6. Mixing procedures
7. Types of mixing equipment
8. Characteristics of in-process and end products
9. Food safety standards
10. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
11. Importance of meeting task completion timelines
12. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
13. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. The type of cracker being made (e.g. soda, enzyme or chemical) impacts the need for fermentation.
3. Environmental conditions, e.g. humidity, temperature
4. Type of flour used, e.g. wheat, corn, rice, quinoa, beetroot
5. Dietetic style of flour used, e.g. gluten-free, non GMO, low carbohydrate

Glossary

- CRACKER: a flat, dry baked food typically made with flour. Flavourings or seasonings, such as salt, herbs, seeds, or cheese, may be added to the dough or sprinkled on top before baking.
  - Chemical cracker: similar to enzyme crackers in shape and size. The main difference is that they are formulated with reducing agents to improve machining and optimum processing. L-cysteine and sodium bisulfites are commonly used as reducing agents.
  - Enzyme cracker: most often chemically-leavened and are made using proteolytic enzymes. These reduce the elasticity of the dough and impart sheetability. This type of cracker is usually sprayed with oil immediately before baking.
  - Soda cracker: fermented and usually made with the sponge and dough method. This type of cracker is rather dry and has a flaky, layered structure.
- DOCKING: the process of poking holes in the dough so that it does not puff up during baking
- SPONGE: a bubbled mixture of flour, water and a touch of yeast.
- SPONGE AND DOUGH METHOD: a two stage method of:
  - 1. a pre-fermentation step for sponge mixing
  - 2. a dough or final mixing step

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Job Competency

A.3.5 Prepare quick breads

Reference Number: 3429

Purpose of the Task

Quick breads are chemically-leavened with baking powder or baking soda, so no fermentation time is needed. Examples of quick bread products include muffins, sweet loaves such as banana bread and zucchini loaf. Proper preparation of various types of quick bread products is important for ensuring the correct texture and consistency of the final product. Improper scaling and mixing can result in tough, chewy, dense, or irregularly shaped or tasting final products.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare wet and dry ingredients:
    - sieve/sift flour, as required
    - scale ingredients, as required
4. Mix ingredients:
    - use mixing method outlined in recipe, e.g. creaming, shortening, stirring method
    - add flavourings and inclusions, e.g. fruit, chocolate chips, nuts, cheese:
        - incorporate inclusions gently to prevent breakage or release of juices
    - measure specific gravity of batter, as required
5. Deposit batter:
    - select appropriate pan for finished product
    - grease or line pans if required
6. Apply toppings, as required, e.g. use topping machine to sprinkle fruit, nuts, chocolate chips, salt
7. Steam/bake/fry quick bread products:
    - set equipment controls for time and temperature based on recipe
8. Monitor steaming/baking/frying process
    - monitor cooking temperature during process
    - compare cooked in-process quick bread products to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications
9. Take internal temperature of in-process quick bread products, as required
10. Cool baked quick bread products
11. Apply icings/glazes/washes/toppings/decorations, as required
12. Freeze baked quick bread products, as required
13. Store products, as required:
    - date and label, as required
14. Transfer or monitor transfer products to next stage
15. Maintain traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Types of quick breads, e.g. muffins, brownies, cake donuts, scones, biscuits, sweet loaves
6. Impact of batter improvers on batter
7. Impact of emulsifiers on cookie dough/batter
8. Flours used for quick breads, e.g. particle size, protein content
9. Characteristics of chemically leaving agent, e.g. baking soda is salty
10. Mixing procedures and methods, e.g. creaming, shortening, stirring
11. Types of mixing equipment, e.g. vertical, spiral, horizontal and continuous

12. Characteristics of in-process and end products
13. Food safety standards
14. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
15. Importance of meeting task completion timelines
16. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
17. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Type of quick bread being made (e.g., muffins, loaves) will impact the type of mixing method used (e.g., stirring, creaming, shortening methods).
3. Icing/glazes/washes/toppings/decorations may be applied at different stages in the process
4. Use of dry ingredient mixes can be used in the production of quick breads
5. Environmental conditions, e.g. humidity, temperature

Glossary

- **QUICK BREAD:** any bread leavened with a chemical leavening agent rather than a biological one like yeast or sourdough starter.
- **CREAMING METHOD:** frequently used for cake batters, butter and sugar are "creamed," or beaten together until smooth and fluffy. Eggs and liquid flavoring are mixed in, and finally dry and liquid ingredients are added in. The creaming method combines rise gained from air bubbles in the creamed butter with the rise from the chemical leaveners. Gentle folding in of the final ingredients avoids destroying these air pockets.
- **SHORTENING METHOD (also known as the biscuit method):** used for biscuits and sometimes scones, solid fat (whether lard, butter, or vegetable shortening) is cut into flour and other dry ingredients using a food processor, pastry blender, or two hand-held forks. The layering from this process gives rise and adds flakiness as the folds of fat melt during baking.
- **STIRRING METHOD (also known as the quick-bread method, blending method, or muffin method):** used for pancakes, muffins, corn bread, dumplings, and fritters, calls for measurement of dry and wet ingredients separately, then quickly mixing the two. Often the wet ingredients include beaten eggs, which have trapped air that helps the product to rise. In these recipes, the fats are liquid, such as cooking oil. Usually mixing is done using a tool with a wide head such as a spoon or spatula to prevent the dough from becoming over-beaten, which would break down the egg's lift.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.3.6 Prepare cookies

Reference Number: 3430

Purpose of the Task

Cookies, also known as biscuits, are small sweet baked treats that are crispy, soft or cake-like in texture. Cookies can be cut into a variety of shapes, including rectangles or squares. If not prepared correctly, the resulting cookies can have quality issues, such as poor texture, taste or shape. This often leads to the disposal of products, loss of yield and, ultimately, financial loss for the organization.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare equipment according to specifications, e.g. add attachment to wirecut equipment for bar extrusion
4. Prepare wet and dry ingredients:
    - ensure ingredients are at correct temperature
    - sieve/sift flour, as required
    - scale ingredients, as required
5. Mix ingredients:
    - cream fat or shortening with sugar/sweetener
    - incorporate liquids
    - add dry ingredients
    - add flavourings and inclusions, e.g. fruit, chocolate chips, nuts:
        - incorporate inclusions gently to prevent breakage or release of juices
6. Sheet/roll/deposit/extrude dough:
    - input equipment settings according to recipe
    - monitor quality indicators, e.g. shape, weight
7. Apply toppings, as required, e.g. use topping machine to sprinkle fruit, nuts, chocolate chips, salt
8. Fill cookies, as required
9. Bake/fry cookies:
    - set equipment controls for time and temperature based on recipe
10. Monitor baking/frying process:
    - monitor cooking temperature during process
    - compare cooked in-process cookies to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications
11. Cool baked cookies
12. Cut into final shape, if required
13. Rebake cookies, if applicable
14. Apply icing/glaze/washes/toppings/decorations, as required, e.g. chocolate dip, candy sprinkles
15. Freeze baked cookies products, as required
16. Store products, as required:
    - date and label, as required
17. Transfer or monitor transfer products to next stage
18. Maintain traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Flours used for cookies e.g. particle size, protein content
6. Impact of patisserie improvers on cookie dough/batter
7. Impact of emulsifiers on cookie dough/batter

8. Types of cookies, e.g. chocolate chip, shortbread, filled, rebaked
9. Types of equipment and attachments used for cookies, e.g. mixing equipment, wirecut machine
10. Characteristics of end product
11. Food safety standards
12. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
13. Importance of meeting task completion timelines
14. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
15. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Types of equipment and attachments used
3. Type of fat/oil used, e.g. butter, margarine, coconut oil
4. Types of cookies, e.g. chocolate chip, shortbread, filled, bar-shaped
5. Some cookies do not require baking, e.g. protein balls, rum balls. In this case they are mixed and shaped.
6. Use of dry ingredient mixes can be used in the production of cookies
7. Environmental conditions, e.g. humidity, temperature

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.3.7 Prepare cakes

Reference Number: 3431

Purpose of the Task

Cakes can be rich due to ratios of sugar, fat and eggs and can be produced in a variety of textures, flavours, shapes and colours. Cakes can also be produced without sugar or eggs. There are three types of cakes: batter type (such as pound and layer), foam type (such as angel and sponge) and chiffon type. If molded into smaller portions the same batter is used to produce cupcakes. If the preparation steps are performed incorrectly it can result in problems including a sunken center, poor rise, gumminess, excessive doming, a thick crust or poor taste. These quality faults can result in excess waste, loss of final product and financial loss.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare equipment according to specifications, as required, e.g. add attachments, set controls for batter depositor, set conveyor speed
4. Prepare wet and dry ingredients:
    - ensure ingredients are at correct temperature
    - sieve/sift flour, as required
    - scale ingredients, as required
5. Mix ingredients:
    - use mixing method outlined in recipe, e.g. creaming, blending, continuous
    - add flavourings, as required, e.g. vanilla, almond
    - add inclusions, as required, e.g. dried fruit, nuts
    - measure specific gravity, as required
6. Deposit batter:
    - ensure correct pans are being used, as required
    - ensure pans are correctly prepared, as required
7. Apply toppings to batter, as required, e.g. use topping machine to sprinkle fruit, nuts, chocolate chips, salt
8. Steam/bake/fry panned cakes:
    - set equipment controls for time and temperature based on recipe
9. Monitor steaming/baking/frying process:
    - monitor cooking temperature during process
    - compare cooked in-process cakes to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications
10. Take internal temperature of in-process cakes
11. Cool baked cake
12. Assemble cake, as required, e.g. layer cake
13. Apply icing/glaze/washes/toppings/decorations, as required, e.g. fondant, text written in icing, sugar rosettes
14. Freeze baked cakes, as required
15. Store products, as required:
    - date and label, as required
16. Transfer or monitor transfer products to next stage
17. Maintain traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Types of cakes, e.g. sponge, layer, chiffon, pound, angel
6. Flours used for cakes, e.g. cake flour, pastry flour, all purpose flour

7. Impact of patisserie improvers on cake batter
8. Impact of emulsifiers on cake batter
9. Mixing procedures and methods, e.g. single stage, creaming, blending, multi-stage, continuous
10. Characteristics of in-process and end products
11. Food safety standards
12. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
13. Importance of meeting task completion timelines
14. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
15. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Type of cake being made, e.g., batter, foam, chiffon
3. Use of dry ingredient mixes can be used in the production of cakes
4. Environmental conditions, e.g. humidity, temperature

Glossary

- **CREAMING METHOD:** frequently used for cake batters, butter and sugar are "creamed," or beaten together until smooth and fluffy. Eggs and liquid flavoring are mixed in, and finally dry and liquid ingredients are added in. The creaming method combines rise gained from air bubbles in the creamed butter with the rise from the chemical leaveners. Gentle folding in of the final ingredients avoids destroying these air pockets.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.3.8 Prepare pastries

Reference Number: 3432

Purpose of the Task

Pastry products can be sweet or savoury and are made from dough composed of flour, water and fat/oil. Common types of pastry include shortcrust, puff and phyllo. Examples of pastry products include pies, tarts and Danishes. Pastry products may be filled, e.g. fruit filling in tarts. If the preparation steps are performed incorrectly it can result in problems including excessive shrinkage, dryness, toughness and oiliness. These quality faults can require the disposal of finished products, resulting in financial loss.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare equipment according to specifications, as required, e.g. add attachments
4. Prepare wet and dry ingredients:
    - ensure ingredients are at correct temperature
    - sieve/sift flour, as required
    - scale ingredients, as required
5. Mix ingredients, e.g. blend flour and fat/oil:
    - avoid over mixing, if applicable
6. Divide dough, as required
7. Laminate dough, as required
8. Retard pastry dough, as required:
    - place in retarder/cooler according to specifications
9. Sheet/roll dough:
    - input equipment settings according to recipe, e.g. thickness
10. Final shape dough, as required, e.g. roll into rounds
11. Cut dough, as required, e.g. into triangle shapes
12. Place dough into pans, as required
13. Blind bake pastry products, as required:
    - set equipment controls for time and temperature based on recipe
    - cool pastry
14. Fill pastry, as required
15. Ensure top crust is placed, crimped and trimmed, as required, e.g. pies, tarts
16. Apply toppings/washes, as required
17. Bake/fry pastry products:
    - set equipment controls for time and temperature based on recipe
18. Monitor baking/frying process:
    - monitor cooking temperature during process
    - ompare cooked in-process pastry products to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications
19. Take internal temperature of in-process pastry products
20. Cool baked/fried pastry products
21. Freeze baked/fried pastry products, as required
22. Store products, as required:
    - date and label, as required
23. Transfer or monitor transfer of products to next stage
24. Maintain traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)

3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Types of pastry, e.g. puff, shortcrust
6. Types of pastry products, e.g. tarts, pies, Danish
7. Types of fillings, e.g. fruit, meat, vegetable
8. Types of flour used for pastry, e.g. pastry, all purpose, cake
9. Impact of patisserie improvers on pastry dough
10. Impact of emulsifiers on pastry dough
11. Characteristics of fats/oils used for pastry, e.g. high melting point
12. Characteristics of in-process and end products
13. Food safety standards
14. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
15. Importance of meeting task completion timelines
16. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
17. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Types of pastry and pastry products
3. In some cases pastry/pastry products will be frozen before proofing/baking and sold as a frozen take-and-bake product
4. Techniques can be repeated more than once when preparing pastry, i.e. two stages of retarding
5. Use of dry ingredient mixes can be used in the production of cookies
6. Environmental conditions, e.g. humidity, temperature

Glossary

- **PASTRY:** dough, typically of high fat content, used to make pies and other baked goods.
- **RETARD:** to place bulk or shaped dough into a colder environment to slow fermentation (primarily yeast) activity.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
X		

Job Competency

A.3.9 Prepare Choux pastry

Reference Number: 3433

Purpose of the Task

Choux pastry is mixture of flour and heated fat/oil and flour (roux) into which eggs are incorporated or beaten. This creates a unique protein structure. Choux pastry is extruded or deposited into various shapes. It can be baked, steamed, boiled or fried for a wide range of finished products. After baking, it is typically filled with chocolate, cream, custard, or savoury fillings. They may be topped/dusted with, for example, chocolate, icing sugar, cheese or herbs. Choux pastry may be frozen as a filled or empty product. If not prepared correctly, it can result in a soggy, doughy, dry, cracked or collapsed final product.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare equipment according to specifications, as required
4. Prepare wet and dry ingredients:
    - ensure ingredients are at correct temperature
    - sieve/sift flour, as required
    - scale ingredients, as required
5. Mix ingredients:
    - heat flour and fat to create roux in a scraped surface kettle or similar equipment
    - start high speed mixer or agitator and run for specified time before adding eggs:- use surface read thermometer to ensure mixture is at correct temperature
    - use high speed mixer to incorporate room temperature eggs into roux
6. Deposit/extrude mixture
7. Bake/fry choux products
    - set equipment controls for time and temperature based on recipe/formula/production record
8. Cool baked/fried choux pastry products
9. Slice cooled products, as required
10. Fill choux products, as required, e.g. manually, semi-automatically or automatically inject cream
11. Apply icing/glazes/washes/toppings/decorations, as required
12. Freeze baked/fried choux pastry products, as required
13. Store products, as required:
    - date and label, as required
14. Transfer or monitor transfer of in-process products to next stage, e.g. bowl, hopper, extruder, divider
15. Maintain production records and traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Types of Choux pastry products, e.g. profiteroles, cream puffs, eclairs, beignets, gougeres
6. Types of fillings, e.g. cream, chocolate, custard, savoury
7. Types of flour used for Choux pastry, e.g. bread, all purpose, pastry
8. Importance of heat in the Choux pastry process
9. Impact of patisserie improvers on pastry dough
10. Impact of emulsifiers on pastry dough
11. Characteristics of fats/oils used for pastry, e.g. high melting point
12. Characteristics of in-process and end products
13. Food safety standards
14. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable

15. Importance of meeting task completion timelines
16. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
17. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation, e.g. products may be filled with automatic or semi-automatic equipment
2. Types of Choux pastry products
3. Environmental conditions, e.g. humidity, temperature

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Job Competency

A.3.10 Prepare short crust pastry products

Reference Number: 3434

Purpose of the Task

Short crust pastry products include a wide variety of products including cheesecake, bars and squares such as Nanaimo bars, date squares. Layers may or may not be baked or cooked, depending on the recipe. If prepared incorrectly, it can result in separation of layers, greasy product, crumbling, caved product, or uneven layers, resulting in financial loss.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
2. Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
3. Prepare equipment according to specifications
4. Prepare wet and dry ingredients for each layer:
    - ensure ingredients are at correct temperature
    - sieve/sift flour, as required
    - scale ingredients, as required
5. Mix ingredients using appropriate mixing method for each layer:
    - follow mixing time standards
    - add flavourings and inclusions, as required, e.g. fruit, chocolate chips, nuts
6. Sheet/roll/deposit base layer:
    - input equipment settings according to recipe
    - monitor quality indicators, e.g. shape, weight
7. Bake base layer, as required:
    - set equipment controls for time and temperature based on recipe
8. Add additional layers, as required, e.g. fruit, custard, crumble
9. Apply toppings, as required
10. Bake composed product, as required:
    - set equipment controls for time and temperature based on recipe
11. Monitor baking process:
    - monitor cooking temperature of equipment and product during process, e.g. use thermometer, online SCADA, Internet of Things (IoT) temperature monitor
    - compare cooked in-process products to quality standards, e.g. colour, texture, shape
    - notify personnel if in-process product does not meet specifications
12. Cool short crust pastry products
13. Score or cut into final shape, if required
14. Apply icing/glaze/toppings/decorations, as required, e.g. chocolate dip, candy sprinkles
15. Freeze short crust pastry products, as required
16. Store products, as required:
    - date and label, as required
17. Transfer or monitor transfer products to next stage
18. Maintain production records and traceability documentation

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Potential allergens and contaminants
5. Ready-to-use custards, chocolate and fillings, their characteristics and applications
6. Impact of thickeners, stabilizers, and emulsifiers on short crust pastry products
7. Types of short crust pastry products, e.g. cheesecake, Nanaimo bars, lemon bars, date squares
8. Types of equipment and attachments used for short crust products, e.g. mixing equipment, sheeting, extruder

9. Characteristics of end product
10. Food safety standards
11. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
12. Importance of meeting task completion timelines
13. Process flow from start to finish:
    - impacts of preceding stage on current process stage
    - effects of current process stage on next stage
14. Documentation requirements for traceability, process monitoring and corrective action

Variables, Range of Context

1. Level of automation
2. Types of equipment and attachments used
3. Type of fat/oil used, e.g. butter, margarine, coconut oil
4. Types of short crust pastry products
5. Use of dry ingredient mixes
6. Variety of ready-to-use custards, creams and fillings may be used
7. Layers requiring different preparation such as baking and refrigeration
8. Environmental conditions, e.g. humidity, temperature

Glossary

- **INTERNET OF THINGS (IoT):** a network of physical objects that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet.
- **SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA):** a category of software applications for controlling industrial processes, which is the gathering of data in real time from remote locations in order to control equipment and conditions.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

B. Food Safety Management System

B1. Comply with Food Safety Management System

B.1.1 Comply with food safety management system

Job Competency

B.1.1 Comply with food safety management system

Reference Number: 2880

Purpose of the Task

Following the food safety management system is important to ensure the protection of employees and customers. Failure to comply can have serious consequences, including product that can cause illness and death in the general public.

Performance

1. Participate in annual food safety management system training
2. Maintain personal hygiene, including:
    - wash hands frequently
    - use hair nets
    - wear clean clothing
3. Ensure workplace is clean and sanitized, as required
4. Use safe product handling practices
5. Identify hazards associated with products being handled
6. Take corrective action when deviations occur
7. Report:
    - unsafe/unsanitary conditions
    - illness or injury that could impact food safety

Knowledge

1. Organizational policies and procedures
2. Organization's food safety management system, e.g. process flow diagram
3. Products and intended uses
4. Critical control points (CCPs), where applicable
5. Effects of incorrect temperature on product, e.g. freezer burn, bacteria growth
6. Common foodborne illnesses transmissible by humans

Variables, Range of Context

1. Species-related hazards
2. Potential for Cross-contamination issues

Glossary

- **Critical Control Point (CCP):** Specific point, procedure, or step in food manufacturing at which control can be exercised to reduce, eliminate, or prevent the possibility of a food safety hazard.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				

C. Pest Control

C1. Comply with Facility Pest Control Program

C.1.1 Comply with facility pest control program

Job Competency

C.1.1 Comply with facility pest control program

Reference Number: 2888

Purpose of the Task

Following the facility pest control program helps to prevent pests (e.g. insects, rodents and birds) from threatening the quality and safety of products that are produced, stored and shipped from the food processing facility. In addition, compliance helps to identify potential pest issues that require attention before they cause potential harm to products or personnel.

Performance

1. Attend facility pest control program training (as required)
2. Comply with all Food Safety and Pest Control policies and procedures when completing all work activities
3. Monitor for signs of pests or potential warning signs, for example:
    - pest sightings
    - sightings of signs of potential infestation, e.g. droppings, nests, feathers, damaged food/ingredients
    - damage to structures or equipment, e.g. holes in walls, gaps in seals, etc.
4. Report any findings to supervisor for immediate attention
5. Respond to pest sightings according to supervisory direction

Knowledge

1. Pest control program protocols
2. Importance of maintaining a pest-free work environment
3. Indicators or signs of potential pest infestation
4. Policies for handling hazardous waste, e.g. rodent droppings, nests, etc.

Variables, Range of Context

1. Number of employees
2. Levels of employee responsibility and authority
3. Practices and raw materials leading to high risk of pests

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

D. Food Traceability

D1. Comply with Food Traceability System

D.1.1 Comply with food traceability system

Job Competency

D.1.1 Comply with food traceability system

Reference Number: 2892

Purpose of the Task

Food traceability provides real-time key manufacturing, quality management and traceability data for recalls. Food traceability systems need to be integrated with an organization's existing IT infrastructure and control systems. It requires an investment in hardware, software and training to ensure that the system will work. Any product produced by the organization should be able to be tracked back to its sources of raw materials.

Performance

1. Refer to production documentation or communicate with supervisor to obtain applicable codes for in-process and finished products
2. Verify codes are correct for the day, if required
3. Apply assigned codes (e.g. product units, dates/times, batches, lots) to documentation or labels
4. Use codes when documenting product data relevant to tasks

Knowledge

1. Good Manufacturing Practices (GMP)
2. Standard Operating Procedures (SOPs)
3. Purpose and benefits of traceability systems
4. Number of products produced
5. Equipment used for various processes
6. Documentation requirements, manual or electronic
7. Existing control systems, e.g. inventory management

Variables, Range of Context

1. Types of traceability systems, e.g. Hazardous Analysis and Critical Control Points (HACCP), British Retail Council (BRC)
2. Domestic and foreign market requirements
3. Complexity of product processing
4. Number of products being produced
5. Size of operation, e.g. amounts being processed
6. Level of automation

Glossary

- TRACEABILITY: The ability to trace and follow raw materials, components and products, through all stages of receipt, production, processing and distribution, both forwards and backwards

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

E. Recalls

E1. Follow Recall Plan

E.1.1 Follow recall plan

Job Competency

E.1.1 Follow recall plan

Reference Number: 2895

Purpose of the Task

It is important that recall actions/activities occur in a timely and orderly manner. Following the protocols laid out in an organization's recall plan ensures that affected items are handled effectively and efficiently.

Performance

1. Follow directions of recall team leader regarding corrective actions to take for current situation, for example:
   - in production, for example: - shut down production lines in coordination with production manager - prepare equipment and/or products for testing - collect production records for review
   - in quality management, for example: -identify source of problem -trace inventory back through production lines based on batch/lot numbers, using traceability system data -test equipment -test raw materials - contact regulating authority
   - in warehouse, for example:- segregate affected inventory - segregate affected raw materials - place segregated inventory and raw materials on hold -track trace shipments of affected inventory to next point of distribution, e.g. recipients, carriers-trace receiving of raw materials, to identify supplier, dates- stop further distribution of affected inventory and raw materials -collect, segregate and dispose of returned product, if applicable
   - in sales and marketing, for example: -inform clients of recalled product and details, and required action - launch public communications plan -document actions being taken -handle calls from public and customers regarding recalled product.
   - in administration/management, for example: -participate in communications plan -review purchase agreements -meet with legal team -determine potential/scope of litigation
2. Comply with communication plan directives, e.g. do not speak with media, provide information as directed by recall team, e.g. what information, and to whom
3. Document actions taken as a result of recall plan:
   - provide documentation to supervisor/manager
   - maintain accurate traceability records
   - identify issues/problems that occur during recall
4. Participate in emergency recall management drills

Knowledge

1. Good Manufacturing Practices (GMP)
2. Standard Operating Procedures (SOPs)
3. Organization's recall plan
4. Level of recall
5. Product segregation procedures
6. Organization's product tracing system and food safety program
7. Product and product raw materials, sources of raw materials
8. Regulatory authority(ies)
9. Organization's distribution network
10. Media contacts
11. Confidentiality of information
12. Potential impact on brand and company image
13. Organization's existing supply chain facilities
14. Level of insurance protections
15. Sales and Purchasing agreements

Variables, Range of Context

1. Reason for recall, e.g. labelling error, public health risk
2. Different types of food products, e.g. baked goods, meats, vegetables
3. Different types of food processes, e.g. fresh, frozen, canned, cooked
4. Differences in distribution for different types of products
5. Sources/suppliers of raw materials
6. Recall time frames depending on type of product and level of risk associated with problem
7. Social perceptions of corporate errors, responsibility

Glossary

- **COMPLAINTS:** consumer complaints about product
- **PRODUCT RETURNS:** ability to record and track returned products and reason for return by consumers
- **RECALL:** an action taken by an organization to remove potentially unsafe food products or products from the market that do not comply with relevant laws. It is the responsibility of organization to remove the product from sale or distribution.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

F. Quality Management

F1. Monitor Product Quality

F.1.1 Take corrective action to ensure product quality

Job Competency

F.1.1 Take corrective action to ensure product quality

Reference Number: 2924

Purpose of the Task

Taking corrective actions and implementing preventative measures when a quality issue is identified maintains product quality and minimizes or prevents repeated quality issues.

Performance

1. Identify anomalies/defects in products, e.g. raw materials, bruising, in-process products, labels, packaging
2. Remove defective product or material that does not meet specifications
3. Determine source of quality issue from information gathered:
   - check own area of operation
   - inform other operators up and down the line
4. Determine if corrective action is required, in a timely manner, e.g. raw materials/product is not meeting specifications or is sub-standard
5. Report problem to appropriate department, e.g. maintenance, quality assurance, receiving
6. Implement corrective action, e.g. place product on hold, adjust product to address deviation:
   - document problem and action taken, if applicable
7. Retain sample or take additional samples for Quality Assurance department or management, if required
8. Monitor process to determine if corrective action has resolved problem

Knowledge

1. Good Manufacturing Practices (GMP)
2. Standard Operating Procedures (SOPs)
3. Critical Control Points (CCPs)
4. Required documentation, if applicable
5. Indicators of defective product
6. Product specifications e.g. labels, packaging
7. Reporting procedures
8. Defective/rejected product handling processes/procedures
9. Non-conformance procedures, e.g. level of authority to implement corrective measures
10. Production process and technology

Variables, Range of Context

1. Different types of product specifications depending on type of food product
2. Different specifications for different stages of food product process
3. Different Critical Control Points
4. Complexity of the issue will have a direct impact on the ability of the practitioners to correct the problem
5. Production process and technology used will impact complexity of corrective actions

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

G. Equipment and Tools

G1. Operate Food Processing Equipment

G.1.1 Conduct pre-operation check on food processing equipment
G.1.2 Start up food processing equipment
G.1.3 Monitor food processing equipment operation
G.1.4 Perform food processing changeovers
G.1.5 Troubleshoot minor food processing equipment problems

Job Competency

G.1.1 Conduct pre-operation check on food processing equipment

Reference Number: 2925

Purpose of the Task

Before even starting the equipment, it is important to ensure that the equipment is ready to be energized in order to prevent damage. This preventative measure can prevent problems occurring when the equipment is operating and ensure the equipment is safe and sanitary for operation.

Performance

1. Check that equipment safety controls are in place and working properly
2. Conduct pre-operation check using checklist, if applicable
3. Check operational functions, for example:
    - control valves are working properly
    - level probes are operational
    - oil levels
    - sharpness of cutting instruments
    - guards are in place
4. Use required PPE, e.g. safety glasses, safety footwear, mesh gloves
5. Identify component wear on equipment
6. Carry out preventative maintenance, if applicable, e.g. replace gasket or worn parts
7. Verify that equipment is properly calibrated, if applicable
8. Ensure appropriate personnel (e.g. supervisor, quality assurance) approve equipment start up, if applicable, e.g. swab test has been completed
9. Document pre-operation check, if applicable

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Operation of equipment component functions and safety controls
5. Pre-operation checklists
6. Indicators of equipment wear
7. Indicators of operational malfunctions, e.g. stuck valves, low oil levels

Variables, Range of Context

1. Types of equipment
2. Level of automation and instrumentation
3. Equipment hazards and guards/safety controls
4. Requirements for documentation, e.g. checklists

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
	X	X	X			X

Job Competency

G.1.2 Start up food processing equipment

Reference Number: 2926

Purpose of the Task

It is important to ensure that when the equipment is energized, it is operating correctly. This prevents damage to the equipment, ensures the efficiency of the organization and ensures employee safety.

Performance

1. Use required PPE, e.g. safety glasses, safety footwear
2. Set up equipment for operation:
    - set specific equipment and process controls, for example:
        - size
        - speed
        - temperature
        - time
        - weight
        - volume
        - product
3. Use checklist for start-up, if required
4. Energize/power up equipment, if required
5. Check readouts to verify required settings are achieved:
6. Calibrate equipment, if applicable:
    - ensure all scales or weighing equipment are set correctly, e.g. zeroing of scales, taring of materials
7. Listen for unusual noises or other malfunctions, e.g. squeaking, grinding
8. Take corrective action for abnormalities, e.g. make minor adjustments, notify supervisor
9. Report any changes or deviations from Standard Operating Procedures (SOPs)

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Continuous improvement practices
5. How to operate equipment controls
6. Equipment settings, for example:
    - temperature controls
    - speed controls
    - Programmable Logic Controls (PLC)
    - switches
7. Equipment operating ranges, specified settings and limitations
8. Product/customer specifications
9. Types of processes, e.g. grinding, cooking, stuffing, tumbling, pasteurization

Variables, Range of Context

1. Types of equipment and related processes
2. Types of readouts, e.g. gauges, graphs, digital readouts, colour-coded lights
3. Equipment settings for different ingredients/products and customer specifications

Glossary

- Calibrate - to determine, check, or rectify the graduation of any instrument giving quantitative measurements.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
	X	X	X			

Job Competency

G.1.3 Monitor food processing equipment operation

Reference Number: 2927

Purpose of the Task

It is important to be proactive and aware of when equipment is not functioning optimally in order to prevent damage to equipment. Being alert, recognizing indicators of potential problems and making minor adjustments to equipment can prevent costly repairs, equipment downtime and issues with product quality.

Performance

1. Use required PPE, e.g. safety glasses, safety footwear
2. Monitor equipment operation:
    - listen for unusual noises, e.g. squeaking, grinding
    - observe non-conforming changes in product, e.g. size, colour, density, shape, thickness
    - observe unusual fluctuations in readings, e.g. temperature
    - note increasing frequency of alarms or alerts
3. Record and verify control settings, as required, e.g. manually, electronically
4. Take corrective action when readings deviate from intended set points, for example:
    - check set-up
    - manually adjust equipment settings, according to environmental change, for example:
        - increase/decrease temperature
        - increase/decrease speed
        - increase/decrease valve opening
    - troubleshoot minor equipment issues, as necessary
5. Document adjustments made to equipment settings
6. Report setting adjustments and/or deviations from Standard Operating Procedures (SOPs) to appropriate personnel, e.g. supervisor, quality assurance
    - explain step-by-step what issues were observed
    - explain sequence of actions taken

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Operation of equipment
4. Equipment set up
5. Equipment settings, for example:
    - temperature controls
    - speed controls
    - Programmable Logic Controls (PLC)
    - switches
6. Equipment operating ranges, specified settings and limitations
7. Purpose of equipment, e.g. to shape, to heat, to separate
8. Strengths and weaknesses/limitations of equipment and new technology
9. Types of processes, e.g. baking, cooking, pasteurization, steeping, sterilization.
10. Impact of control settings on product, safety and hygiene
11. Implications of control setting adjustments on entire process
12. Ingredient/product quality standards and customer specifications for in-process and finished products
13. Indicators of sub-standard ingredients/product
14. Indicators of equipment wear
15. Indicators of operational malfunctions, e.g. stuck valves, low oil levels, visual defects or irregularities
16. Level of personal authority to address issues and solve equipment problems, i.e. parameters within which control adjustments can take place

Variables, Range of Context

1. Types of equipment and related processes
2. Level of automation and instrumentation
3. Types of readouts, e.g. gauges, graphs, digital readouts, colour-coded lights
4. Equipment settings for different ingredients/products and customers

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
	X	X	X			X

Job Competency

G.1.4 Perform food processing changeovers

Reference Number: 2928

Purpose of the Task

Changeovers occur when production shifts from one product to another. Changeovers can occur with the same product being treated differently for different lines of product, for example, chicken wings being mixed with different types of sauces or when the actual product changes, for example from soybeans to peas and carrots being frozen. A changeover may also be necessary if the quantity, size, weight or volume of the same product changes, depending on the type of product. Changeovers can require a shutdown for cleaning and sanitation depending on the previous product and the changeover product.

Performance

1. Check schedule for changeover dates/times
2. Check changeover requirements, for example:
    - allowed changeover time, e.g. equipment shutdown time
    - changeover product
    - new specifications
    - new coding requirements, e.g. allergens
    - food safety considerations for equipment cleaning/sanitation requirements, especially for specific designations, e.g. allergen-free, gluten-free, halal, kosher
3. Prepare for changeover in advance of changeover date/times:
    - check inventory levels of raw materials, if applicable
    - gather required tools for equipment shutdown, if required
4. Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, ear protection
5. Use required food safety and hygiene equipment, e.g. hair nets, beard nets, aprons, gloves, smocks
6. Shutdown and lock out equipment for cleaning and sanitization of line for changeover, if required after last batch of current product
7. Prepare new batch when processing equipment is ready to re-start
8. Adjust processing equipment settings according to recipe instructions, for example:
    - weight or size of batch
    - temperature and humidity
    - speed and timing through stages
    - new or additional stages/processes
9. Re-start processing line and introduce new batch/in-process product, as instructed
10. Monitor beginning of processing run closely to ensure in-process product specifications are being met:
    - notify appropriate personnel (e.g. supervisor, quality control) if product is not meeting specifications
    - take corrective action, if applicable
    - document actions taken
11. Store or transfer in-process products to next stage, e.g. belt, conveyer, slide, pipe:
    - date and label, as required

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Changeover standards, e.g. time allocation
5. Production schedule
6. Implications of a changeover, e.g. food safety requirements, coding changes, required downtime
7. Product specifications for changeover product
8. Organization's customers
9. Organization's products and variations
10. Organization's product codes

11. Packaging equipment requirements
12. Required tools
13. Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
14. Raw material/in-process product characteristics and properties, e.g. texture, viscosity, colour, odour
15. Quality standards of raw material/in-process products and resulting mixture
16. Food safety standards, e.g. cross-contamination, allergens
17. Process flow from start to finish, for example:
    - impact of preceding stage on current process stage
    - effect of current process stage on next stage
18. Importance of meeting task completion timeline

Variables, Range of Context

1. Type and number of product(s) being produced
2. Changeover product specifications
3. Different capacities, sizes and configurations of product feed and processing equipment
4. Changeover standards, depending on type of changeover product
5. Availability of raw materials/ingredients
6. Skill levels of personnel
7. Size of operation, e.g. amounts being packaged
8. Level of automation, e.g. number of packaging lines
9. Equipment configuration, e.g. portioning and packaging together

Glossary

- Changeover time: period required to prepare a device, machine, process or system to change from producing the last good/product of the batch to producing the first good piece of the new batch. A changeover is different than a set-up, although a changeover can include a set-up.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
	X	X	X			

Job Competency

G.1.5 Troubleshoot minor food processing equipment problems

Reference Number: 2930

Purpose of the Task

It is important to be proactive and recognize when equipment is not functioning optimally. Troubleshooting minor issues can prevent costly repairs and equipment downtime. Operators must recognize when equipment is malfunctioning and required protocols that must be followed.

Performance

1. Use required Personal Protective Equipment (PPE), e.g. safety glasses, safety footwear
2. Identify problem area, for example:
    - unusual sounds
    - gauges reading incorrectly
    - misalignment
    - changes in synchronization
    - timing that is off
    - equipment wear
    - heat fluctuations, e.g. too hot or not hot enough
    - discolouration of lubricants
    - bad or unusual smells
    - product is not meeting specifications, e.g. incorrect volume, wrong colour
3. Verify safety components are operational on equipment
4. Assess potential sources of problem
5. Determine likely cause of problem:
    - begin by eliminating common issues as possible causes
    - use systematic process to eliminate other possible causes
6. Lock/tag- out equipment, if required
7. Address cause of problem, if possible, e.g. adjust equipment or settings to maintain operational parameters
8. Observe the equipment to identify signs of dysfunction:
    - use all senses, e.g. smell, sight, hearing
9. Collaborate with others to solve problem, if appropriate, e.g. supervisor, co-worker
10. Contact others with expertise (e.g. supervisor, facility maintenance) if problem cannot be solved:
    - explain step-by-step what issues were observed and what actions were taken
11. Document defects or problems and solutions, as required

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Types of equipment
4. How system operates and how components are connected, i.e. closed or open systems
5. Strengths and weaknesses/limitations of equipment and new technology
6. Equipment parameters
7. Equipment component functions
8. Process requirements, e.g. temperature, time
9. Equipment hazards
10. Lock/tag-out procedures
11. Ingredient/product quality standards and customer specifications for in-process and finished products
12. Common equipment problems and their indicators, e.g. incorrect product colour
13. Indicators of wear
14. Effects of over/under lubrication
15. Indicators of parts/component wear
16. Indicators of need for oil/lubrication

17. Level of personal authority to address issues and solve equipment problems, i.e. parameters within which troubleshooting can be performed

Variables, Range of Context

1. Types of equipment
2. Operating parameters of equipment
3. Food processing requirements for different types of foods
4. Equipment hazards
5. Component configurations and types of connections

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
			X			X

H. Sanitation

H1. Handle and Prepare Chemicals

H.1.1 Handle chemicals

Job Competency

H.1.1 Handle chemicals

Reference Number: 2950

Purpose of the Task

Safe and proper handling of chemicals and agents used for sanitation protects personal safety and prevents hazards in the workplace.

Performance

1. Determine chemicals required for cleaning application to be performed
   - confirm cleaning agent will not damage surface to be cleaned
2. Wear appropriate PPE, e.g. rubber gloves to avoid contact with skin, apron, special footwear when cleaning floors, face shields when spraying or fogging
3. Read application directions on chemical labels
4. Follow appropriate first aid procedures if contact is made, e.g. flushing of the skin or eyes
5. Dispense chemicals according to Safety Data Sheets (SDS), labels and WHMIS guidelines:
   - use designated containers with proper labels
6. Ensure adequate ventilation when applying chemicals to prevent unsafe concentrations of toxic vapours
7. Adhere to WHMIS guidelines for the use of each chemical

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Location of Safety Data Sheets (SDS) for each chemical being mixed
5. WHMIS and specific chemical hazards and associated controls, e.g. PPE
6. PPE required for handling chemicals
7. Storage location of chemicals
8. Safe chemical transport procedures
9. Chemical mixing location
10. Location of first aid station and services should unintentional contact with chemicals occur

Variables, Range of Context

1. Level of automation, e.g. Clean-in-place systems
2. Number of chemicals being used
3. Compatibility of chemicals

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

H. Sanitation

H2. Clean Food Processing Equipment and Tools

H.2.1 Prepare bakery processing equipment for cleaning and sanitization

Job Competency

H.2.1 Prepare bakery processing equipment for cleaning and sanitization

Reference Number: 3435

Purpose of the Task

Bakery processing equipment must be properly prepared for cleaning and sanitization. While cleaning crews (or individuals with these specialized skills) may be responsible for the full cleaning and/or sanitization of equipment and tools, production line workers may be expected to prepare the equipment and tools (complete the 'hand off') so that they are ready for cleaning and sanitization. This may be completed at the end of a shift, at the end of a day, or when changing product lines. It is critical that equipment is emptied completely to maintain compliance with traceability. If this task is not completed correctly it can result in wasted resources and production delays because the cleaning/sanitizing crews/individuals need more time to do their jobs as sanitizing is less effective on dirty equipment.

Performance

1. Use required PPE, e.g. safety glasses
2. Use required food safety and hygiene equipment, e.g. hair nets, beard nets, aprons, gloves, smocks
3. Disassemble equipment or components, as required, e.g. bowls, dough hook, foot contact parts
4. Dispose of:
    - excess doughs, batters and ingredients that cannot be reused
    - garbage
    - recyclables
5. Rinse equipment/tools using high or low-pressure water hoses:
    - ensure equipment is free of debris
6. Wash, rinse and sanitize contact parts, as required, e.g. use pan washer:
    - ensure correct temperatures are used

Knowledge

1. Standard Operating Procedures (SOPs)
2. Good Manufacturing Practices (GMP)
3. Occupational Health and Safety practices
4. Food safety standards, e.g. sanitization temperatures
5. Workplace Hazardous Material Information System (WHMIS)
6. Potential allergens
7. Equipment components and disassembly requirements for cleaning

Variables, Range of Context

1. Cross-contamination issues, e.g. allergens, foot traffic
2. Types of food processing equipment
3. Amounts being processed
4. Certification requirements, e.g. kosher, organic

Glossary

- LOCKOUT/TAG OUT: a safety procedure which is used in industry and research settings to ensure that dangerous machines are properly shut off and not started up again prior to the completion of maintenance or servicing work.
- WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS): a comprehensive plan for providing information on the safe use of hazardous materials used in Canadian workplaces. Information is provided by means of product labels, safety data sheets (SDS) and work education programs.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Importance

Extremely Important	Very Important	Important
		X

Frequency

Continuously	Every hour or more	Hourly	Once per Shift	Once per Day	Once per Week	Once per Month	Once per Year
			X	X			

I. Waste Management

I1. Comply with Recycling Program

I.1.1 Comply with recycling program

Job Competency

I.1.1 Comply with recycling program

Reference Number: 2998

Purpose of the Task

Compliance with the recycling program helps the organization minimize waste, protect the environment and ensures that regulatory requirements are met.

Performance

1. Attend recycling program training, if applicable
2. Differentiate between waste, recyclable and reusable materials in work area
3. Dispose of recyclables in appropriate collection bins
4. Encourage co-workers to follow program
5. Inform maintenance staff when recycling bins are, for example:
    - overflowing
    - damaged
    - unlabelled, e.g. signage is illegible
    - inaccessible
6. Keep up to date with changes to program
7. Provide feedback to waste management staff on program, for example:
    - suggest improvements to recycling program in relation to own department/work area
    - report non-compliance with recycling program, if required

Knowledge

1. Types of recyclables being collected
2. Locations of collection bins in work area
3. Overall goals of facility recycling program
4. Communication protocols for issues with bins, program, collection times/frequency
5. Value of recycling to organization

Variables, Range of Context

1. Types and sizes of recyclables being collected
2. Frequency of collection
3. Co-workers unfamiliar with recycling concepts

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

J. Health and Safety

J1. Comply with Occupational Health and Safety Program

J.1.1 Follow occupational health and safety program
J.1.2 Participate in emergency preparation
J.1.3 Participate in accident/incident investigations

Job Competency

J.1.1 Follow occupational health and safety program

Reference Number: 3099

Purpose of the Task

When all employees adhere to the occupational health and safety program the risk of the occurrence of accidents and injuries significantly decreases, leading to enhanced productivity and worker safety.

Performance

1. Comply with organization policies and procedures regarding occupational health and safety
2. Wear personal protective equipment (PPE) as required
3. Use machinery, equipment and materials only as authorized
4. Follow written work procedures
5. Use safe ergonomic practices, e.g. safe lifting, repetitive strain avoidance
6. Use safe work principles, e.g. avoid rushing or taking shortcuts, making safety the top priority
7. Conduct safety check prior to beginning each shift, as required
8. Report accidents, incidents and near misses
9. Report all injuries for first aid, regardless of severity
10. Cooperate with the Joint Occupational Health and Safety Committee (JOHS) or Health and Safety Representative
11. Follow warning signs on equipment and machinery
12. Report hazards, unsafe conditions or actions to supervisor

Knowledge

1. Personal legal responsibility for following Occupational Health and Safety Program
2. Worker's Compensation program, including purpose, responsibilities, compensation and benefits
3. Importance of occupational health and safety
4. Potential Hazards with the workplace
5. Workplace Hazardous Materials Information System (WHMIS) and applicable Safety Data Sheets (SDS)
6. Safe ergonomic practices
7. Types of common accidents/incidents and their causes
8. Locations of safety equipment within facility, e.g. eye wash station, first aid kit, emergency exits
9. Joint Occupational Health and Safety Committee (JOHS) members and Health and Safety Representative
10. Reporting procedures for hazards, accidents, near misses

Variables, Range of Context

1. Provincial/territorial and federal occupational health and safety regulations
2. Types of PPE will vary depending upon organization, product and processes, e.g. hard hats, apron, gloves, safety footwear
3. Types of chemicals
4. Types of equipment

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

J.1.2 Participate in emergency preparation

Reference Number: 3100

Purpose of the Task

Emergency preparedness is critical for all employees to ensure that in the event of an accident or incident, all involved parties are aware of the protocols and procedures to ensure safety.

Performance

1. Locate fire exits and muster/gathering points throughout the facility
2. Locate first aid stations, eye wash stations, Safety Data Sheet (SDS), emergency phones
3. Identify individuals training in CPR and first aid
4. Use safe handling procedures for handling facility materials, i.e. according to Workplace Hazardous Material Information System (WHMIS)
5. Use lock out tag out procedures for equipment
6. Participate in emergency drills, e.g. fire, chemical spills, evacuations, critical accidents simulations

Knowledge

1. Organization's policies and procedures, e.g. evacuation plans
2. Locations of all first aid stations, eye wash stations, Safety Data Sheet (SDS), emergency phones and muster points throughout the facility
3. Emergency contact information, e.g. security system, gas/utilities, fire, Ministry of Environment, Ministry of Labour, senior management, employee emergency contacts
4. Workplace Hazardous Materials Information System (WHMIS) and the applicable Safety Data Sheet (SDS)
5. Types of common accidents and their causes
6. Reporting procedures for emergencies

Variables, Range of Context

1. Size and layout of facility
2. Number of employees
3. Range of potential emergency situations

Glossary

- **MUSTER POINT:** a muster point is a designated place or an area where all employees, passengers, or a large crowd assemble in case of an emergency in an installation, building, public place or a watercraft. It is also known as an emergency assembly point (EAP), or, simply, assembly or gathering point.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

J.1.3 Participate in accident/incident investigations

Reference Number: 3102

Purpose of the Task

In the aftermath of an accident/incident at an organization's worksite, all personnel must cooperate with external and internal investigators and follow standard operating procedures.

Performance

1. Notify relevant personnel immediately of accident/incident, e.g. supervisor
2. Complete documentation according to standard operating procedures, for example:
   - use specified form
   - obtain assistance to complete, if required, e.g. interpreter for ESL staff
   - be honest and as complete as possible
3. Provide documentation to investigative authorities
4. Cooperate with investigators:
   - explain processes and procedures when asked
   - answer questions honestly
   - provide employee safety training records, if required
5. Continue to carry out work as normal, if possible
6. Provide records and documentation as requested, i.e. Worker's Compensation reports, paystubs
7. Follow organization's policies and procedures regarding communications

Knowledge

1. Applicable legislation and regulations for organization, e.g. food safety protocols (SOPs), Occupational Health and Safety standards
2. Organization's functional areas
3. Protocols for external personnel on site, e.g. security
4. Roles and responsibilities of workforce
5. Organization's physical plant layout
6. Equipment information, e.g. maintenance records, age

Variables, Range of Context

1. Size of organization
2. Nature and severity of incident/accident
3. Past incidents, e.g. number, severity, resolutions

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

J. Health and Safety

J2. Comply with Facility Security Program

J.2.1 Follow facility security program
J.2.2 Participate in security exercises and drills

Job Competency

J.2.1 Follow facility security program

Reference Number: 3106

Purpose of the Task

Adherence to security programs and procedures is important for the protection of the organization's assets and the safety of workers.

Performance

1. Attend security program training
2. Provide required information for security protocols/features
3. Follow required security procedures, for example:
   - access and egress to and from facility areas and facility grounds
   - reporting for work, i.e. signing in and off work/shifts
   - visitors, e.g. sign in log, visitors pass
   - reporting presence of strangers without visitor documentation/badge
   - removal of facility equipment
4. Protect intellectual property of organization, e.g. recipes, formulations, product specifications:
   - follow communication protocols for media, if applicable
5. Report loss of keys/electronic pass cards immediately
6. Report unusual occurrences, e.g. suspicious packages
7. Report unusual use or consumption of regulated chemical and raw materials, e.g. ethanol, cannabis

Knowledge

1. Security program protocols
2. What information is proprietary
3. Confidentiality rights and responsibilities
4. Indicators of unusual behaviour and activities
5. Cyber-security

Variables, Range of Context

1. Number of employees
2. Levels of employee responsibility and authority

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

J.2.2 Participate in security exercises and drills

Reference Number: 3107

Purpose of the Task

Practice of security procedures enhances the efficiency and effectiveness of employee response during actual security breaches.

Performance

1. Attend security exercises and drill training
2. Identify type of emergency response required, e.g. lockdown
3. Take action based on assigned role for type of emergency, for example:
    - shut down equipment
    - clear and lockdown areas
    - report to muster areas
4. Provide feedback to supervisors regarding:
    - activity completion time
    - areas for improvement
5. Keep up to date with changes to procedures

Knowledge

1. Security program protocols
2. Types of security breaches
3. Roles and responsibilities based on security situation
4. Potential security risks
5. Locations of security features, e.g. locks

Variables, Range of Context

1. Quantity and types of security risks will vary based on organization's product and facility, e.g. number of access and egress points

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

K. Record Management

K1. Complete Record Management Tasks

K.1.1 Complete forms

Job Competency

K.1.1 Complete forms

Reference Number: 3268

Purpose of the Task

Forms need to be completed to so that data is available to be reported. Information on forms must be clear, concise and accurate to ensure correct records are kept. Accurately completed forms are critical for monitoring and recording food safety measures, monitoring production yields, and inventory control. Forms may be electronic, in which case how to use the computer/interface will be necessary.

Performance

1. Ensure availability of required forms for task, e.g. temperature logs
2. Complete forms at designated times, as required, e.g. hourly, per shift
3. Ensure information is current and accurate, e.g., dates, calculations, inventory counts
4. Ensure information on forms is legible if handwritten
5. Store or deliver forms, as directed, e.g. keep with equipment, give to supervisor
6. Sign forms, as necessary

Knowledge

1. Policies and procedures of the organization
2. Importance of correct documentation

Variables, Range of Context

1. Technology used in the record management process will vary

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
						X

L. Organizational Policies and Procedures

L1. Comply with Organizational Policies and Procedures

L.1.1 Comply with organizational policies and procedures/SOPs

Job Competency

L.1.1 Comply with organizational policies and procedures/SOPs

Reference Number: 3170

Purpose of the Task

Personnel must actively engage in policy and SOP compliance in order to ensure quality assurance and food safety, as well as ensuring safety legislation and company key performance indicators are met.

Performance

1. Review organization's policies and SOPs handbook
2. Participate in orientation as a new hire
3. Take advantage of on-the-job training opportunities
4. Complete all tasks according to policies/SOPs
5. Communicate with supervisor regularly regarding new and updated SOPs:
    - ensure SOP being applied is most recent version
6. Provide feedback on current policies/SOPs:
    - identify challenges with compliance
    - put forward ideas for revisions that to procedures still comply with policy

Knowledge

1. Difference between a policy and a procedure (SOPs)
2. Applicable policies and SOPs for work area
3. Importance of compliance
4. Own role and responsibilities and those of others, e.g. supervisor, apprentices

Variables, Range of Context

1. Size of organization
2. Roles and responsibilities of personnel
3. Complexity of production (may require more SOPs)
4. Level of automation

Glossary

- **Policy:** A written statement that clearly indicated the position and values of the organization on a specific topic. It contains rules and stipulates what to do.
- **Standard Operating Procedure (SOP):** A written set of instruction that describes how to perform the required steps for a particular task or sequence of tasks.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
	X	X				

M. Leadership

M1. Manage Organizational Change

M.1.1 Support organizational change

Job Competency

M.1.1 Support organizational change

Reference Number: 3179

Purpose of the Task

All employees need to embrace change at an individual level. It is important to support organizational change as an individual to contribute to the team and the organization's success. Resistance to change results in a poor work environment and low productivity.

Performance

1. Be willing to try new ways to carry out tasks:
   - approach change objectively
   - keep an open mind
2. Take training for new processes/equipment operations
3. Provide feedback on effectiveness of change, e.g. observations, outcomes
4. Speak positively about potential outcomes and benefits of change
5. Determine how change is beneficial to own work situation
6. Explain benefits of change to others
7. Adapt if implemented changes do not have the anticipated outcomes

Knowledge

1. Reasons for change
2. Barriers to change
3. Implications of change
4. Organizational resources

Variables, Range of Context

1. Size of organization
2. Management style of organization
3. Union or non-union work environment
4. Empowerment of employees
5. Level of stakeholder engagement
6. Degree and type of change

Glossary

- **Stakeholder:** anyone that can be affected by a company's actions, objectives, and policies. This includes both internal stakeholders, such as employees and managers, and external stakeholders, such as shareholders, suppliers, customers, surrounding communities, creditors, government representatives, etc.

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

M. Leadership

M2. Demonstrate Professionalism

M.2.1 Collaborate with team members
M.2.2 Develop professionally
M.2.3 Exhibit professional and ethical conduct
M.2.4 Manage own stress
M.2.5 Contribute to a solution-focused workplace

Job Competency

M.2.1 Collaborate with team members

Reference Number: 3180

Purpose of the Task

Collaboration is often a crucial part of a business, as it is often necessary for colleagues to work well together, trying their best in any circumstance. Collaboration means that people will try to cooperate, using their individual skills and providing constructive feedback, despite any personal conflict between individuals to achieve the goals of the team and ultimately the mission of the organization. "Team" refers not only to a small work group, but to the organization as a whole.

Performance

1. Support others:
   - share knowledge with others
   - provide feedback in a constructive, timely and professional manner
   - be receptive to other's opinions
   - respect individual differences, e.g. strengths and limitations, cultural differences, language requirements, physical needs and limitations
2. Collaborate with representatives from other functional areas of organization, e.g. maintenance, quality control:
   - share expertise, information and resources
   - work together on broader organizational objectives
3. Work together to achieve goals and resolve issues:
   - actively participate in team activities, e.g. contribute ideas, carry out tasks
   - share credit and recognition for achievements
   - resolve inconsistencies and errors together
4. Identify ways to continuously improve own collaboration skills:
   - reflect on successes and challenges

Knowledge

1. Purpose/goal of team
2. Mission statement and values of organization
3. Benefits of teamwork
4. Strengths and limitations of self and other team members
5. Team dynamics
6. Other teams in organization
7. Relationships between different functional areas of the organization
8. Level of personal authority to address issues and solve problems

Variables, Range of Context

1. Size of organization
2. Management style of organization
3. Union or non-union work environment
4. Empowerment of employees
5. Level of team member engagement

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

M.2.2 Develop professionally

Reference Number: 3181

Purpose of the Task

In order to advance in one's career, prevent skills obsolescence, improve knowledge and skills, it is critical to take advantage of development opportunities and make time to keep up with advances in the industry. Organizations support professional development of their employees for succession planning, to maximize the skills and knowledge of their personnel and to develop/maintain a competitive edge.

Performance

1. Recognize ongoing need for professional development:
   - review personal skill set
   - identify personal short- and long-term training needs
   - assess current and future professional development needs
   - assess current trends and best practices
2. Engage in formal and in-formal training and development activities, for example:
   - research professional development opportunities
   - enroll in educational and professional seminars, courses, workshops and certification programs
   - participate in mentorship programs
   - volunteer
   - read industry publications
   - participate in local trade and business organizations
   - network with industry members
3. Access organizational support, e.g. time off, reimbursement of course fees
4. Assess the effectiveness of development activities
5. Review and update professional development goals

Knowledge

1. Professional goals
2. Trade and business organizations
3. Organizational support for professional development, e.g. time off, course fees
4. Available educational and professional seminars, courses, workshops and certification programs

Variables, Range of Context

1. Organizational support
2. Personal assessment
3. Union or non-union work environment
4. Position and role of individual

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

M.2.3 Exhibit professional and ethical conduct

Reference Number: 3182

Purpose of the Task

Professional and ethical conduct promotes a positive image of the industry, organization, brand and oneself and helps to earn the respect of stakeholders, including peers. Being professional also helps to create a positive work environment and sets an example for others.

Performance

1. Represent organization's mission, vision, and values through professional conduct
2. Demonstrate professional characteristics, for example:
    - courtesy
    - dedication
    - integrity
    - efficiency
    - enthusiasm
    - fairness
    - flexibility
    - objectivity
    - trustworthiness
    - curiosity
    - Initiative
    - creativite
3. Set example for co-workers, colleagues and industry
4. Comply with business standards, policies and procedures
5. Comply with organization's Code of Ethics, if applicable
6. Maintain confidentiality
7. Respect diversity
    - monitor personal biases
8. Respect co-workers, colleagues, customers and competitors

Knowledge

1. Organization's code of conduct and expectations
2. Ethical principles
3. Organization's code of ethics
4. Stereotypes (e.g. cultural, racial, sexual, gender) and their impact on the workplace
5. Personal biases
6. Level of authority

Variables, Range of Context

1. Organizational expectations
2. Position of individual in organizational structure

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

M.2.4 Manage own stress

Reference Number: 3184

Purpose of the Task

Strategies to manage one's own stress are important to ensuring sustained, healthy employment. These strategies prevent burnout and employee turnover. It is important to be realistic about what one person can reasonably take on in terms of workload and timelines

Performance

1. Attend to own personal, physical, emotional and spiritual needs
2. Maintain a sense of humour
3. Establish a comfortable work environment
4. Practice being flexible and adaptable to new situations, e.g. demonstrate calm approach
5. Take action to reduce stress, e.g. balance home and work life, set realistic goals, engage in hobbies
6. Ask for assistance when needed

Knowledge

1. Personal limitations
2. Personal stress indicators and triggers
3. How own stress and attitude affects others
4. When and how to say "no"

Variables, Range of Context

1. Personality types
2. Corporate culture
3. Union or non-union work environment
4. Position and role of individual

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

M.2.5 Contribute to a solution-focused workplace

Reference Number: 3267

Purpose of the Task

Being able to adjust to new situations and technology, identify risks and solve problems are critical skills in the current workplace and the workplace of the future. Organizations that foster a solution-focused workplace are more efficient, experience fewer operational issues, and are able to quickly adjust to shifting customer requirements.

Performance

1. Ask questions regarding requirements and expectations
2. Identify signs of potential risk to the operation or product(s)
3. Identify signs of potential customer issues or dissatisfaction
4. Identify issues that have the potential to cause conflict within the team or organization
5. Take initiative to solve common problems:
    - enact solutions that have been successfully used in the past
6. Communicate signs of potential risk and potential solutions to appropriate individuals, e.g. supervisor, co-workers, managers:
    - describe issues and problems clearly and concisely
    - outline potential solutions and the rationale behind them
    - use questions to generate discussion
    - respect others' input and opinions
7. Work together to solve issues and problems:
    - be open to different approaches
    - ensure roles and responsibilities to enact solution are clear
8. Address conflict as it happens:
    - respect others' viewpoints
    - communicate directly but courteously
    - report abusive behaviour
9. Keep focused on positive outcomes:
    - redirect negative comments or discussion
10. Reflect on the process and solution:
    - make suggestions for continuous improvement
11. Celebrate successes:
    - recognize those who have contributed to the problem-solving process, e.g. acknowledge publicly, thank privately

Knowledge

1. Organization's structure, roles and responsibilities within it
2. Level of authority to address issues and solve problems
3. Organization's policies and procedures
4. Ethical principles
5. Cultural sensitivity
6. Organization's code of ethics
7. Industry trends and technology

Variables, Range of Context

1. Organizational expectations and culture
2. Position of individual in organizational structure
3. Types of issues and problems

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

N. Communications

N1. Communicate Effectively

N.1.1 Use active listening skills
N.1.2 Use speaking skills
N.1.3 Use hand signals
N.1.4 Use writing skills

Job Competency

N.1.1 Use active listening skills

Reference Number: 3186

Purpose of the Task

To ensure messages and information are understood and to prevent misunderstandings that could result in costly errors.

Performance

1. Assess situation and timing/location of potential conversation
2. Focus complete attention on speaker:
   - be open-minded
   - use attentive body language and verbal cues
   - demonstrate patience, i.e. listen without interruption until message is completed
3. Watch for nonverbal indicators that reinforce or contradict message, e.g. nods
4. Respond to speaker:
   - acknowledge message, e.g. thank speaker
   - offer comments
   - use effective questions to seek additional information or clarify details, e.g. open-ended or closed questions, probing or mirror questions
   - re-word message in paraphrased terms to confirm understanding

Knowledge

1. Questioning techniques
2. Paraphrasing
3. Nonverbal cues, i.e. body language
4. Culturally-sensitive communication styles or practices, e.g. use of humour
5. Appropriate listening environments for various conversations

Variables, Range of Context

1. Barriers to listening, e.g. poor hearing, noisy work environments
2. Interpretations of nonverbal cues, i.e. culturally-determined information
3. Interpreters or translators may be used if the speakers and listeners have different first languages

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

N.1.2 Use speaking skills

Reference Number: 3187

Purpose of the Task

To ensure messages and information are understood and to prevent misunderstandings that could result in costly errors.

Performance

1. Determine appropriate time and place to deliver message, e.g. away from noisy equipment
2. Respect needs and limitations of listeners:
   - recognize cultural differences in communication
   - respect schedule and potential time restrictions
   - anticipate potential emotional responses
3. Organize ideas before speaking
4. Determine appropriate format, e.g. formal, informal, group, individual, telephone
5. Communicate message:
   - speak clearly
   - make eye contact
   - vary tone, volume, pauses, and rate of speech
   - use appropriate language, e.g. do not use slang, jargon, profanity or sarcasm
   - exhibit appropriate non-verbal behaviour
6. Engage listeners by promoting input, e.g. put employee at ease
7. Confirm listener(s)'s understanding:
   - encourage and answer questions
   - watch for nonverbal cues, e.g. questioning looks

Knowledge

1. Purpose of communication
2. Speaking techniques
3. Nonverbal cues, i.e. body language
4. Proper terms for industry/organizational jargon
5. Appropriate delivery of message for situation
6. Culturally-sensitive communication styles and practices

Variables, Range of Context

1. Barriers to listening, e.g. poor hearing, noisy work environments
2. Listeners with special needs, e.g. English as a Second Language (ESL), impaired hearing, foreign language audience members
3. Interpretations of nonverbal cues
4. Personality traits, e.g. shy, soft-spoken, assertive/aggressive
5. Emotional states of listeners
6. Types of messages, e.g. coaching session, training, positive reinforcement, sharing of information
7. Interpreters or translators may be used if the speakers and listeners have different first languages

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

N.1.3 Use hand signals

Reference Number: 3188

Purpose of the Task

The use of universally understood hand signals throughout the facility helps to ensure safe and effective communication among crew members and prevent the damage of goods or personal injury.

Performance

1. Provide clear and recognized hand signals
2. Communicate intention to move self or objects to all personnel, as necessary
3. Respond appropriately to received hand signals

Knowledge

1. Meaning of hand signals
2. Situations when hand signals are warranted
3. Accepted and recognized hand signals within the facility

Variables, Range of Context

1. Congestion within the facility

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

Job Competency

N.1.4 Use writing skills

Reference Number: 3189

Purpose of the Task

Effective written communication skills help to ensure that messages and information are clear and understood by the intended audience. Written information is also a permanent record that can be kept as evidence of discussions, actions and/or results.

Performance

1. Determine purpose of message
2. Use format, tone and style suited to purpose
3. Consider reader's:
    - perceptions
    - reading ability
    - needs
    - technical understanding
    - preferred language
4. Adapt content and structure of material to suit reader(s), as required
5. Ensure handwritten documents are clear and legible
6. Ensure written communication is:
    - well-organized and has logical flow
    - clear and concise

Knowledge

1. Protocol for different writing formats, e.g. incident reports, e-mails, reports
2. Public and internal formats and requirements
3. Grammar, punctuation, spelling and sentence structure
4. Characteristics of readers

Variables, Range of Context

1. Barriers to writing, e.g. English as a Second Language, education
2. Different purposes
3. Informal/formal
4. Formatted documents
5. Writing by hand versus using technology

Level of Complexity | Bloom's Taxonomy

Recall, Remember	Understand	Apply	Analyze	Evaluate	Create, Transform	Autonomy
		X				X

GLOSSARY

Accounts receivable aging - Process of determining which customers are paying on time, which are not, and how far they are behind the payment date This analysis assists in estimating bad debts and in establishing credit guidelines

Adductor muscle - The main muscular system in bivalve mollusks, i.e. in clams, scallops, mussels, oysters, etc.

Adenosine-5'-triphosphate (ATP) - is the energy currency of cells (animal, plant, bacteria, yeast, mould)

Aggregate demand - the total amount of product to be produced during a given time frame

Allergen - a substance that, through exposure or ingestion, can trigger an immune system response resulting in an allergic reaction in some people. Food allergies to eggs, nuts, peanuts, and shellfish can trigger a life-threatening anaphylactic shock; less severe allergies can result in intestinal discomforts, such as lactose intolerance, or skin rashes from citrus peel oils

Aquastat - An aquastat is a device used in hydronic heating systems for controlling water temperature. To prevent the boiler from firing too often, aquastats have a high-limit temperature and a low limit

Arbitration - a process of settling an argument or disagreement in which the people or groups on both sides present their opinions and ideas to a third person or group

Artificial demand - is created when an end user is supplied air pressure higher than required for the application

Aseptic packaging - Process in which a food product, such as ultra high temperature (UHT) milk) and its package are sterilized separately and then combined and sealed under sterilized atmosphere.

Atomization - separation of substance into fine particles; in the case of spray dryers, heated milk concentrate is subjected to pressure and pushed through a small nozzle that disperses the liquid in a spray of fine particles

ATP Test - a process of rapidly measuring actively growing microorganisms through detection of adenosine triphosphate, or ATP

Auger - a device with a helical shaft used for moving loose material

Autoclave - a large piece of equipment that uses heat and steam and/or water to batch sterilize

containers of food in a process also referred to as retorting. This process extends the shelf life of food by destroying microorganisms and inactivating food enzymes. Process can be applied to a wide range of containers including cans, glass jars, pouches.

Bacterial cultures - live non-toxic, beneficial bacteria, yeasts and moulds used to carry out the fermentation process in food production. Specific bacteria are used in different food mediums to create the specific fermented foods, for example yogurt, cheese, beer, wine

Bactofugate - milk solids and undesired microorganisms that collect on discs of bactofuge, also referred to as sludge

Bactofugation - the use of a centrifugal force to remove the microorganisms, especially spores that are heat resistant from milk; equipment is like a milk separator, but specifically designed to remove microorganisms

Bag filter - equipment used in milk and whey powder production to separate and collect powder from the air streams of spray dryers

Bar codes - machine-readable codes on goods used to validate transactions, determine inventory levels, verify bills of lading, etc. They are often used with electronic data interchange

Barnacle - A marine crustacean with an external shell, which attaches itself permanently to a variety of surfaces, like crab shells.

Batch processing - the performing of an industrial process on material in batches of a limited quantity or number

Beneficiary - The person to whom the insurer must pay none if damaged to or loss of the goods occurs Bill of Lading

Bill of Lading - The primary trade transport document required to ensure the security of goods shipped by an exporter It serves as 1) the carrier's receipt to the shipper that the goods have been received for shipment, 2) a memorandum of the terms and conditions of the contract between the carrier and the shipper for the transportation of the goods to a specified destination, and 3) evidence of title to the goods A B/L may be negotiable or non-negotiable; various types include air bill, ocean bill, highway bill and rail waybill (see Clean, Order, Straight, Unclean bills of lading) When sent to a foreign bank as part of a sight draft, the bank is authorized to release the B/L (which represents the title to the goods) to the buyer only when payment has been received from the buyer

Biosolids - are a solid product from sewage treatment processes and have been treated in a way to make them safe for further use

Blanching - process where a product, like lobster, is scaled in boiling water, removed after a brief, timed interval and the transferred into iced water or halt the process. Lobster is not considered cooked after blanching

Blowdown - Boiler blowdown is water intentionally wasted from a boiler to avoid concentration of impurities during continuing evaporation of steam The water is blown out of the boiler with some force by steam pressure within the boiler Bottom blowdown used with early boilers caused abrupt downward adjustment of boiler water level and was customarily expelled downward to avoid the safety hazard of showering hot water on nearby individuals

Brand equity - the amount of money that customers are willing to pay just because it's an organization's brand

Brine, to - to soak or saturate a product, like lobster meat, with salty water

Buffer stock - inventory that is established to ensure supply while stock levels are being replenished

Butter - a water-in-oil emulsion made up of cream (milk fat)

Bylined articles - can be any length, and they tend to be based on opinion. They articulate views and opinions that are clearly the writer's own, without requiring objectivity

Byssal hair - The bundle of filaments that are secreted by mussels to help them attach to a solid surface, like other mussels or mussel socks. Also known as the mussel 'beard.'

Calibration - includes measures taken to ensure that an instrument is accurate by adjusting to a known standard. If instrument measurement has an impact on food safety, it must be included in a calibration program

Carcinogen - any substance or agent that tends to produce a cancer

Carrier - any person or company, which, under a contract of carriage, undertakes to perform or procure the carriage agree to by rail, road, sea, air, inland waterway, or by a combination of such modes

Carriers - the materials that form the base or vehicle for the food being tested and can more broadly refer to any other food that accompanies the one being tested so they are ingested too

Casein - protein found in milk, a nutritional component of milk and associated products made from milk

Cash flow - Incomings and outgoings of cash, representing the operating activities of an organization In accounting, cash flow is the difference in amount of cash available at the beginning of a period (opening balance) and the amount at the end of that period (closing balance)

Casing - natural, clean, sanitized intestine skin of sheep, or hogs, or man-made materials that are used to hold stuffings, usually ground meats for sausages or other similar products

Challenge testing - A test that simulates what happens to a product during processing, distribution and subsequent preparation and handling should it become contaminated, to determine if the organisms would present a potential health hazard or spoilage risk

Changeover time - period required to prepare a device, machine, process or system to change from producing the last good/product of the batch to producing the first good piece of the new batch. A changeover is different than a set-up, although a changeover can include a set-up

CIP/Clean-in-Place - a method of cleaning the interior surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly

Class I Recall - is a situation in which there is a reasonable probability that the use of, or exposure to, a violative product will cause serious adverse health consequences or death

Class II Recall - is a situation in which the use of, or exposure to, a violative product may cause temporary adverse health consequences or where the probability of serious adverse health consequences is remote Class III Recall

Class III Recall - is a situation in which the use of, or exposure to, a violative product is not likely to cause any adverse health consequences

Cleaning - Cleaning is the removal of unwanted material (commonly called soils) from production equipment and production areas Removing leftover particles eliminates many microbes, their food source and other physical debris that can contaminate future batches of food Appropriate cleaning chemicals may be applied manually or mechanically to equipment that remains assembled (clean-in-place) or that is partially or fully disassembled (clean-out-of-place) Most often, a combination of methods is used

Clean-in-place (CIP) - a method of cleaning the interior surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly

Cloaca - A common cavity at the end of the digestive tract (poultry)

Coaching - a short-term relationship with employees for the development of specific skills or competencies

Coagulation or curdling - the process where suspended solids in fluid, under certain conditions are attracted together and separate from the fluid. In the case of milk, under specific conditions and specific additives, the milk protein casein, clots or thickens separating from the fluid in milk called whey

Coagulum - the mass of solids that forms under specific conditions

Code of Ethics - a document outlining the mission and values of the business or organization, how professionals are supposed to approach problems, the ethical principles based on the organization's core values and the standards to which the professional will be held

Cold claws - Process of picking/shucking lobster claws that have been cooled after being cooked

Collective agreement - a written contract of employment covering a group of employees who are represented by a trade union. This agreement contains provisions governing the terms and conditions of employment It also contains the rights, privileges and duties of the employer, the trade union and the employees

Commissioning - Process by which an equipment, facility, or plant (which is installed, or is complete or near completion) is tested to verify if it functions according to its design objectives or specifications

Compensation package - Sum of direct benefits (such as salary, allowances, bonus, commission) and indirect benefits (such as insurance, pension plans, vacations) that an employee receives from an employer

Complaints - consumer complaints about product

Consignee - Also known as the importer, or buyer, this is the individual or company to whom the goods are shipped

Consignor - see shipper

Consumer panel - is selected from the public according to the demographics necessary to test the product

Contact systems - the process where compressed air is used as a part of the production and processing including packaging and transportation of safe food production

Contamination - introduction or occurrence of an unwanted organism, taint or substance to packaging,

food or the food environment. Contamination includes physical, chemical, biological and allergen contamination

Contingency inventory - inventory established to ensure against unusual and catastrophic events Continuous Improvement

Continuous Improvement - ongoing effort to improve products, services or processes; can be "incremental" improvement over time or "breakthrough" improvement all at once

Continuous processing - the performing of continuous production in large quantities, usually on a dedicated production line

Contract - a written or oral promissory agreement between two or more persons to do a particular activity or enter into a relationship, which is enforceable by law

Corn syrup - a glucose food syrup made from corn. Can be further refined to high-fructose corn syrup. Used to sweeten foods, prevent sugar crystallization, and alter the texture of foods

Cream - milk fat

Crème fraiche - a fermented dairy product similar to sour cream, inoculated with a bacterial culture. Crème fraiche has a higher fat content than sour cream and no additional additives or thickeners resulting in a thicker, less acidic product than sour cream

Critical Control Points (CCP) - a step at which control can be applied and is essential to prevent or eliminate a food or product safety hazard or reduce it to an acceptable level

Critical limit - a criterion that separates acceptability from unacceptability

Cross-contamination - the passing of bacteria, microorganisms, or other potentially harmful substances indirectly from one person or product to another through the use of improper or unsterile equipment, procedures, or products, example: cross contamination can occur when food is touched by hands or in contact with food contact surfaces, such as cloth towels, cutting boards, sponges, utensils that have not been cleaned and then touch ready-to-eat foods

Crystallization - separation of solids from liquids by the formation of structured solids, crystals as a result of changes in temperature or concentration of solutions

Cyclone - equipment used to separate particles from air, gas, or liquid using high speed air rotation or vortex movement; used in the production of milk and whey powders to remove particles of product

from dryers

Dealer loader - An incentive given to induce a retailer to purchase and display a product

De-clumping - Separating the mussels that have clumped together while growing in a mussel sock

Demand - flow of air under specific conditions required at a particular point

Demand profile - identifies the quantities of air/gas used as a function of time, for the compressor

Demonstration technique - show that customer's objection is incorrect

Demurrage - the charge levied to a ship or railway car for a delay past the scheduled departure time due the charterer's failure to load or unload on time

Depositor - specialized food processing equipment that ejects a specified quantity of in-process product onto or into another food product to be wrapped or into moulds or onto pans

Descriptive panel - commonly used to determine differences between food samples. The descriptive panelist is experienced in the type of food being tested and receives extensive training prior to the testing Descriptive tests

Descriptive tests - concerned with trying to provide description of the sensory qualities of food Deviation

Deviation - a failure to meet required critical limits for a critical control point, or a failure to meet a standard identified in a prerequisite program or a process control

Direct denial technique - tactfully indicate objection is not valid

Discrimination tests - aim to evaluate specific attributes, i e. characteristics of products (crunchiness) They are objective tests and include pair comparison, duo trio and triangle

Diversity - understanding that all people are equal and have the same rights and responsibilities, regardless of race, religious belief, colour, gender, sexual orientation, physical disability, mental disability, age, ancestry, place of origin, marital status, source of income, or family status

Divider - a machine for cutting bulk dough into equal portions

Electronic Data Interchange (EDI) - a computer-to-computer system that transits information and documents without human intervention

Employee equity - fairness in compensation among employees in the same job, or whose positions are

classified at the same job grade or level

Emulsification - a suspension of small globules of one liquid in a second liquid with which the first will not mix, e g. an emulsion of oil in vinegar

Emulsifiers - a food additive commonly used in ice cream production that helps maintain the distribution of fat and air throughout the frozen product by partially destabilizing the fat causing the fat to form structures between the incorporated air bubbles that contribute to the smooth texture of ice cream

Encrusted - specialized food processing equipment that extrudes a filling that is encased in another product at the same time

Enrober - specialized food processing equipment that coats an in-process product with another in-process product, e g. coating granola bars in chocolate This equipment can also be designed to temper the chocolate as well

Enrobing - the process of covering a product with liquid chocolate or other coating, by pouring the coating over the product

Enterprise Resource Planning (ERP) - is business process management software that allows an organization to use a system of integrated applications to manage the business and automate many back- office functions related to technology, services and human resources

Evaporated milk - also known as unsweetened condensed milk, is a canned milk product with a long shelf life produced by evaporating over half of water from fresh milk followed by homogenization, canning and sterilization

Explanation technique - tactfully ask customers to explain objection/ upon realizing objection is incorrect, customers will often retract the objection

External equity - fair and competitive compensation with respect of the market value of a job

Extra processing - any processing that does not add value to the product or is the result of inadequate technology, sensitive materials or quality prevention

Farmed oysters - Oysters that are cultivated from larvae and matured in hatcheries, as opposed to wild oysters.

Feedwater - Boiler feedwater is water used to supply ("feed") a boiler to generate steam or hot water.

At thermal power stations the feedwater is usually stored, pre-heated and conditioned in a feedwater tank and supplied to the boiler by a boiler feedwater pump

FIFO (First In, First Out) - A FIFO warehouse system is an inventory management system in which the first or oldest stock is used first and the stock or inventory that has most recently been produced or received is only used or shipped out until all inventory in the warehouse or store before it has been used or shipped out.

Fillet - The flesh of a fish which has been cut or sliced away from the bone by cutting lengthwise along one side of the fish parallel to the backbone

Fish steak - Alternatively known as a fish cutlet, is a cut of fish which is cut perpendicular to the spine and can either include the bones or be boneless

Flue gas - is the gas exiting to the atmosphere via a flue, which is a pipe or channel for conveying exhaust gases from a fireplace, oven, furnace, boiler or steam generator

Fluid bed dryer - equipment used in the production of milk and whey powders. Uses hot air, and sometimes vibration on a spray of milk or whey concentrate to create fine dry powder particles and with addition of steam cause fine powder particles to stick to each other to create larger powder particles with greater surface areas that are easier to dissolve

Fluid mild and fluid milk products - Milk commonly sold as fresh liquid milks or creams. Includes flavoured milk, concentrated milk, skim milk, fortified milk, buttermilk, milk drinks and cream products. The most perishable form of milk.

Flushometer - A device for flushing toilets that uses system pressure rather than gravity and automatica lly shuts off after a measured amount of water flow in order to conserve water

Food additives - substances added to food to preserve flavour or enhance its taste and appearance. Some additives have been used for centuries; for example, preserving food by pickling (with vinegar), salting, as with bacon, preserving sweets or using sulphur dioxide as with wines

Force majeure - act of God; circumstances beyond human control, such as a natural disaster or a civil war. The parties to a sales contract or insurance policy may agree to a clause, which provides that a contracting party will not be liable for non-execution of a contract as a result of force majeure

Formula - The calculated ratios of milk fat, non-fat solids, sweetener, emulsifier, stabilizer, and water which equals 100%. The formula also includes the ration of total solids to the volume of the finished

frozen product. Used to make adjustments to recipes when new ingredients are added

Geographic target market segment - a target audience that does business in a particular language, city, state/province, or country

Gills - The paired respiratory organ of fishes and some amphibians

Glazing - The application of a protective layer of ice formed at the surface of a frozen product (e.g. frozen split lobster) by spraying it with, or dipping it into, clean seawater, potable water or potable water with approved additives.

Grading - involves the inspection, assessment and sorting of various foods regarding quality, freshness, legal conformity and market value. Food grading often occurs by hand, in which foods are assessed and sorted. Machinery is also used to grade foods, and may involve sorting products by size, shape and quality.

GSFI - Global Food Safety Initiative

Hardening - the process of cooling ice cream to -25°C as quickly as possible to freeze remaining water. Rapid freezing of water promotes growth of small ice crystals. Storage at this temperature also helps to stabilize the ice crystals and maintain product quality

Hazardous Analysis Critical Control (HACCP) - Food production, storage, and distribution monitoring system for identification and control of associated health hazards It is aimed at prevention of contamination, instead of end-product evaluation In place of relying on food inspectors to detect food safety problems, HACCP shifts the responsibility to the food producer to ensure that the product is safely consumable

Hazardous waste - waste that poses substantial or potential threats to public health or the environment

Health claim - any claim made on the label or in labelling of a food, including a dietary supplement, that expressly or by implication, including "third party" references, written statements (e g. a brand name including a term such as "heart"), symbols (e g., a heart symbol), or vignettes, characterizes the relationship of any substance to a disease or health-related condition

Hemolymph - The white congealed substance that appears when lobsters are cooked; hemolymph is the protein substance that lobsters have instead of blood and intestines.

High Temperature Short Time (HTST) - a food processing technology that kills pathogenic bacteria in food, by heating to above 72°C for a short time of at least 15 seconds. Commonly used for milk pasteurization. The changes to milk characteristics are not as significant as UHT treated milk, however HTST dairy products have a shorter shelf life of about 2 weeks and must be refrigerated

Hock - The joint between the drumstick and the shank of poultry feet; comparable to the ankle joint in humans. It is the point where poultry "feet" also referred to as "hocks" are removed during poultry processing

Hold - in-process product that is held back until cleared to proceed or removed from process stream

Holding time - the minimum and maximum time after preparation that a product can be used for a sensory test

Homogenization - to reduce particles and disperse throughout a fluid; to make uniform in consistency, especially to render (milk) uniform in consistency by emulsifying the fat content

Homogenization - the process of breaking up and dispersing fat globules into fluid (emulsification) to prevent the separation of the fat from the fluid and create a consistent product

Hopper - a container for a bulk material, e g. flour, which typically tapers downward and is able to discharge its contents at the bottom

Hot claws - Process of picking/shucking lobster claws that are hot from the cooker

In process rework - waste material such as trims that are fed back into the process

Incubation - the period of time and the controlled environment that is optimal for the growth and development of specific bacterial cultures used in the production of fermented foods

In-line tubular screen - a relatively large mesh filter that is part of pumping system that transfers milk from tank carriers to plant storage system, used to remove debris from milk

Inoculum - in microbiology, the cells, tissue or viruses that are used to inoculate a new culture

In-process product - also known as 'work in progress' (WIP); product not yet ready for the consumer

Insurance certificate - see insurance document

Insurance document - the document issued by the insurance underwriter and provides proof that the goods are insured as they are being transported

Insurance policy - the contract of insurance between the insurer and insured where the insurer promises to pay the insured for damage to or loss of the gods due to a particular risk

Insurance premium - the amount of money the insured must pay to the insurer in consideration of the insurer entering into and issuing the insurance policy

Insured - the person who is being insured against a particular risk

Insured goods - the goods which are the subject of the insurance against a particular risk

Insurer - the person insuring a particular risk

Intermodal/multimodal transport - the use of two or more modes of transportation to move goods from their point of origin to their destination

Internal equity - fair compensation with respect to how different positions within the organization relate to each other

Invoice - A nonnegotiable commercial document issued by the seller to a buyer It identifies both parties and provides a list that describes and quantifies the number of items sold, the date of shipment, mode of transportation, discounts and delivery and payment terms In certain cases it may serve as a demand for payment and becomes a document of title when paid in full Types of invoices include commercial invoice, consular invoice, pro forma invoice, bill of sale, contract of sale

Kefir - a fermented beverage that can be made from milk inoculated with a combination of yeasts, milk proteins and bacteria and incubated at a lower temperature than yogurt. It has a higher fat, protein, and probiotic content that yogurt with a thinner consistency, ideal for consumption as a beverage

Key Performance Indicator - A set of quantifiable measures that a company or industry uses to gauge or compare performance in terms of meeting their strategic and operational goals KPIs vary between companies and industries, depending on their priorities or performance criteria

Kneading - to work and press (a soft substance, such as bread dough) into a uniform mixture

Lactose - naturally occurring sugar in milk

Last chance close technique - method to close sale that puts time limitation on the deal, e g. “Our promotion ends Friday”

Lay Off - is the temporary suspension or permanent termination of employment of an employee or (more commonly) a group of employees for business reasons, such as when certain positions are no

longer necessary or when a business slow-down occurs

Lead-time - time taken from placing order to fulfilling order

Levels of risk - based on probability and severity of potential injury caused by defective food product will impact the time frame to deal with defective product, e g. high risk requires immediate action

LIFO - last in, first out stock rotation system

Lock-out/tag-out - A safety procedure which is used in industry and research settings to ensure that dangerous machines are properly shut off and not started up again prior to the completion of maintenance or servicing work.

Luminometer - a sensitive photometer used for measuring very low light levels (as those produced in a luminescent process)

Management Information Systems (MIS) - broadly refers to a computer-based system that provides managers with the tools to organize, evaluate and efficiently manage departments within an organization. A management information system that can include software to help in decision making, databases to track trends over time, hardware to run the system, people management and project management applications, and any computerized processes that enable the organization to run efficiently

Manifest - B/L or any other cargo control document (waybill, etc)

Mantle - A significant part of the anatomy of mollusks. It is the dorsal body wall which covers the visceral mass and usually protrudes in the form of flaps well beyond the visceral mass itself.

Marinade - a liquid mixture, usually of vinegar or wine, to break down meat collagen and oil with various spices and herbs for flavouring, in which meat, fowl, fish or vegetables are soaked before cooking

Mastering - The process of final packaging

Material safety data sheet (MSDS) - a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product

Membrane filtration - the use of membranes with pores of varying sizes and pressure used to separate water and dissolved solids at the molecular level. Membrane filtration used in milk and whey processing are used to separate out different substances such as protein, lactose, fat, and minerals. Membranes of

varying pore size are used for microfiltration, ultrafiltration, and nanofiltration. Diafiltration is the second ultrafiltration of the solids from the first ultrafiltration diluted with water

Mentoring - an ongoing formal/informal relationship of a more senior, experienced person within the organization providing support and guidance to younger employees. Often a means to pass on knowledge, experience, and open doors for younger employees

Microfiltration - use of polymer-based or ceramic based membranes with openings of 1.4 micro-millimetres used to filter milk to remove undesirable particulates from milk using a temperature and pressure controlled closed system

Milk composition - The chemical components of milk, i.e. water, fat, protein, calcium and milk sugar lactose

Milk fat - a complex mixture of triglycerides and fatty acids, the main component of milk cream, also referred to as butterfat

Milk grading - sensory evaluation process of fluid milk, based primarily on smell, appearance, feel and taste; may be required to be conducted by certified milk graders in some jurisdictions

Milk solids - the solids in milk other than milk fat and water, i.e. protein, lactose and minerals. Dried, concentrated milk proteins typically extracted from whey

Milt - The seminal fluid of male fish

Modes of transportation - refers to the use of airplanes, rail cars, trucks and ships to carry goods from one destination to another via air, rail, road and waterways

Most probable number - the number of organisms that are most likely to have produced laboratory results in a particular test. The MPN methods is used to quantify the concentration of viable microorganisms in a sample and involves inoculating decimal dilutions into tubes of a broth medium, observing the results and using a standard MPN table

Mussel socks - Long mesh tubes or 'socks' in which seeded mussels grow to maturity under water.

Muster point - A muster point is a designated place or an area where all employees, passengers, or a large crowd assemble in case of an emergency in an installation, building, public place or a watercraft. It is also known as an emergency assembly point (EAP), or, simply, assembly point

Mutagenic - in genetics, a mutagen is a physical or chemical agent that changes the genetic material,

usually DNA, of an organism and thus increases the frequency of mutations above the natural background level. As many mutations cause cancer, mutagens are therefore also likely to be carcinogens

Neutralizer - Neutralizer is a substance or material used in the neutralization of acidic water. It is a common designation for alkaline materials such as calcite (calcium carbonate) or magnesia (magnesium oxide) used in the neutralization of acid waters

Non-conforming product - finished and in-process product that does not conform to specifications

Non-contact systems - the process where compressed air is exhausted into the local atmosphere of the food preparation, production, processing, packaging or storage

Non-fat milk solids - the solids in milk other than milk fat and water, i.e. protein, lactose and minerals

Non-Potable Water - Water that has not been examined, properly treated, and not approved by appropriate authorities as being safe for consumption

Nutrient content claim (NCC) - a claim on a food product that directly or by implication characterizes the level of a nutrient in the food (e g., "low fat," "high in oat bran," or "contains 100 calories"

Online presence - An online presence is the sum of all the identities you've created (can be both personal and business-driven) and the interactions those identities have established, and participated in, online

Opercular plate - The bony plate that covers and protects the gills of most bony fish. Also called the gill cover

Operculum - The gill cover of a fish

Organoleptic - Refers to any sensory properties of a product involving taste, colour, odour and feel – organoleptic testing involves inspection through visual examination, feeling and smelling of products

Overrun - the percentage increase in volume of the ice cream than the original volume of mix used, for example if 1 litre of mix is used to create 1.5 litres of ice cream, the volume was increased by 50% which means the overrun is 50%

Packing list - Itemized list of articles usually included in each shipping package. Provides quantity, description and weight of contents Prepared by shipper and sent to consignee for accurate account of delivered goods Also referred to as packing slip or unpacking note

Pasteurization - the process of heating a food, such as mussels, milk or beer, to a specific temperature

for a specific period of time in order to kill microorganisms that could cause disease, spoilage or undesired fermentation

Pathogen - any disease-producing agent, especially a virus, bacterium or other microorganism

Pathogenic bacteria - bacteria that can cause infection. Although most bacteria are harmless or often beneficial, several are pathogenic

Pay equity - difference in pay between males and females

Pectoral fins - Each of a pair of fins situated on either side just behind a fish's head, helping to control the direction of movement during locomotion

Performance validation - testing equipment to ensure that expected performance is being met e g. temperature, metal detector is functional

Peritoneum - The membrane lining the cavity of the abdomen and covering the abdominal organs of a fish

Permeate - The liquid that passes through a filter or membrane filter

Pests - insects, rodents and birds

Physico-chemical parameters - pertaining to both physical and chemical properties, changes and reactions

Pin bones - The fine bones found down the centre of fish fillets

Point-of-purchase displays - Used to create the urge of "impulse" buying and selling your product on the spot

Policy - A written statement that clearly indicated the position and values of the organization on a specific topic. It contains rules and stipulates what to do

Potable Water - Drinking water or potable water is water safe enough to be consumed by humans or used with low risk of immediate or long-term harm

Preference tests - supply information about people's likes and dislikes of a product. They are not intended to evaluate specific characteristics, such as crunchiness or smoothness They are subjective tests and include pair comparison, hedonic and scoring

Pressure dew point - the temperature at which water will begin to condense out of air at a given

pressure. To ensure that no liquid water is present, the pressure dew point must be less than the lowest temperature to which the compressor air will be exposed

Pressure drops - the loss or pressure in a compressed air system due to friction or flow restriction

Pricing strategy - Activities aimed at finding a product's optimum price, typically including overall marketing objectives, consumer demand, product attributes, competitors' pricing, and market and economic trends

Probiotics - live bacteria and yeasts that occur naturally in the human digestive tract and aid in digestion. Often added to foods such as yogurt to promote digestive health

Product cost - The sum of all costs associated with the production of a specific quantity of a good or service

Product returns - ability to record and track returned products and reason for return by consumers

Production code - a numbering/lettering system used to identify the particular batch, which includes a date code and may include a plant identifier The date code can refer to production date, or sell by date, or best-before/use by/expiration date, and can be in a user-friendly familiar date format, or another format, e g Julian code, which uses the number of days since January 1 of the production/use by year

Programmable Logic Controller (PLC) - a digital computer used for automation of typically industrial electromechanical processes, such as control of machinery on factory assembly lines, amusement rides, or light fixtures

Prototype - a first, typical or preliminary model of something, especially a machine, from which other forms are developed or copied

Public relations - the management function which evaluates public attitudes, identifies the policies and procedures of an individual or an organization with the public interest, and plans and executes a program of action to earn public understanding and acceptance

Purchase order - A buyer-generated document that authorizes a purchase transaction. When accepted the seller it becomes a contract binding both parties. A purchase order states the descriptions, quantities, prices, discounts, payment terms, date of performance or shipment and other associated terms and conditions

Push money - also known as "spiffs". An extra commission paid to retail employees to push products

Qualified health claim - A claim authorized by the US Food and Drug Administration (FDA) that must be supported by credible scientific evidence regarding a relationship between a substance (specific food or food component) and a disease or health-related condition

Qualitative Analysis - defines consequence, probability and level of risk by significance levels such as 'high', 'medium' and 'low', may combine consequence and probability and evaluates the resultant level of risk against qualitative criteria

Quantitative Analysis - estimates practical values for consequences and their probabilities and produces values of the level of risk in specific units defined when developing context. Full quantitative analysis may not always be possible or desirable

Radio Frequency Identification (RFID) - is the wireless use of electromagnetic fields to transfer data, for the purposes of automatically identifying and tracking tags attached to objects

Raw material - food inputs into the process

Raw milk - milk that has not been pasteurized

Recall - an action taken by an organization to remove potentially unsafe food products or products from the market that do not comply with relevant laws. It is the responsibility of organization to remove the product from sale or distribution

Recipe - The amounts of ingredients required to mix a batch of product base/blend; based on formula ratios

Recovery CIP - Cleaning solution used in CIP is not very dirty after one cleaning cycle, and it can be reused in the CIP process

Retentate - The components of a liquid that are retained or collected by a filter or membrane filter. The sludge created by the accumulation of undesired particulates, including microorganisms, on microfiltration membranes that milk passes through

Retort a closed vessel used to sterilize canned food products by raising the temperature by hot water or steam and pressure.

Return on investment - a profitability measure that evaluates the performance of a business by dividing net profit by net worth

Reverse Osmosis - also known as RO, is a water purification technology that uses a semipermeable

membrane

Rework - product that initially has been removed production and is able to be returned into the production stream to be re-processed

Rework due to error - process is redone to meet specifications, e g. packaging

RFID tags - radio frequency identification tags, typically clipped to ears of cattle that contain an electronic chip that contains that particular animal's information, e g. type of animal, what farm it is from, owner, used for traceability purposes

Ripening - incubation period of cream inoculated with bacterial culture for a specified period time at a specified temperature used to produce cultured butter

Roe - unfertilized eggs found within the body cavity and tail of a female lobster

Roe - The unfertilized eggs of female fish

Root cause - highest level cause of a problem, that if removed will prevent the problem from re-occurring

Root cause analysis - a term that describes a wide range of investigative approaches, tools and techniques used to identify the cause of problem or factor that has caused a non-conformance or deviation from specifications

Sales Lead - A prospective consumer of a product or service that is created when an individual or business shows interest and provides his or her contact information

Salinometer - A device designated to measure the salinity, or dissolved salt content, of a solution. Also known as a 'brine tester.'

Sanitation Standard Operating Procedure (SSOP) - An SSOP is a written procedure that explains exactly how a certain cleaning task is completed. These procedures may vary from farm to farm The purpose of the SSOP is to provide enough detail so employees can perform the task correctly by reading the procedure without any additional instruction

Sanitizer - A substance or preparation for killing germs, designed for use especially on food-processing equipment. The treatment of a clean surface with a chemical or physical agent (e.g. heat) to reduce microorganisms that cause disease and/or spoilage to levels considered safe for public health. By definition, sanitizing a food contact surface must reduce the population of specific bacteria by 99.999

percent in 30 seconds. Non-food contact surfaces require a reduction of 99.9 percent, also with 30 seconds. When microbial populations are reduced to these levels, the surfaces are considered to be microbiologically clean

Sanitizing - is the treatment of a clean surface with a chemical or physical agent (e g heat) to reduce microorganisms that cause disease and/or spoilage to levels considered safe for public health By definition, sanitizing a food contact surface must reduce the population of specific bacteria by 99 999 percent in 30 seconds Non-food contact surfaces require a reduction of 99 9 percent, also with 30 seconds When microbial populations are reduced to these levels, the surfaces are considered to be microbiologically clean

Scaling - Removing the scales from the outer skin of a fish using manual scaling tools or scaling machinery

Seed crystals - small solid crystals added to solution that provide a nucleus for crystal formation, often used to encourage the growth of larger crystals

Semi-Quantitative Analysis - use numerical rating scales for consequence and probability and combine them to produce a level of risk using a formula. Scales may be linear or logarithmic, or have some other relationship; formulae can also vary

Sensory analysis - a scientific discipline that applies principles of experimental design and statistical analysis to the use of human senses (sight, smell, taste, touch and hearing) for the purposes of evaluating consumer products The discipline requires panels of human assessors, on whom the products are tested, and recording the responses made by them

Shelf-life - the length of time for which the product remains saleable, i e. fit for consumption, and ideally, retaining the majority of its peak quality characteristics

Shelf-life studies - studies conducted on various types of products to determine the length of time a product will retain certain qualities, including microbial counts, taste, appearance, vitamin levels and odor

Shipper - Sometimes known as “exporter”, “consignor” or “sender”, this term refers to the individual or company who owns or is supplying the goods being shipped

Single-use CIP - Cleaning solutions used in CIP are immediately disposed of after use.

Siphon - Siphons in molluscs are tube-like structures in which water flows. The water flow is used for

one or more purposes such as movement, feeding, breathing and reproduction. The siphon is part of the mantle of the clam.

Slotting - the process of defining the quantity and size of all forward pick and reserve locations

Smoulder spots - spots in in dryers, especially fluid bed dryers that are potential fire hazards due to the combustible nature of fine air particles and high temperatures

Sort boards - plastic board used by animal handlers to divide groups of animals and guide animals in the direction they need to go

Stabilizers - a group compounds such as polysaccharide food gums used to prevent food emulsions from separating, or crystalizing and to aid in maintaining the dispersions of flavourings and/or air. Most commonly used in ice creams and other frozen products

Stakeholder - anyone that can be affected by a company's actions, objectives, and policies. This includes both internal stakeholders, such as employees and managers, and external stakeholders, such as shareholders, suppliers, customers, surrounding communities, creditors, government representatives, etc

Stakeholder approach - the impact of business operations on a wide range of issues, not just profit; including, but not limited to: profit, reputation, employees, supplies, customers, shareholders, the environment, and the communities where the company conducts business The length of concern for changes in business operations is usually short-term and long-term; such as understanding the need to meet business objectives on a quarterly or annual basis, but also appreciating the need to focus on the impact on the company beyond just an annual time-frame

Standard - criteria or specifications that can be judged or evaluated and that define the limits of acceptability associated with prerequisite programs and process controls

Standard Operating Procedure (SOP) - A written set of instruction that describes how to perform the required steps for a particular task or sequence of tasks

Standardized milk/standardization - milk or the process of adjusting the milk fat or non-fat milk solids content to different levels than what was received from the dairy. Typically, raw milk is centrifuged to separate the cream from the milk. The two constituents, milk fat and skim milk are recombined to specified levels to produce different fluid milk products, e.g. cream, half and half, whole milk, 2% milk, 1% milk, skim

Steam Quality - Steam quality ranges from 0 to 100% - and is defined as the ratio of the amount of saturated steam vapor to the total steam amount (which may consist of both saturated steam vapor and liquid). A 100% steam quality translates to zero amount of saturated steam liquid and, in this condition, the steam is termed to be “dry”

Sterilization - treatment to make free from live bacteria or other microorganisms. The application of heat to food that kills food spoilage microorganisms and inactivates food enzymes, resulting in food products with a long shelf life

Stock Keeping Unit - SKU' - A store's or catalog's product and service identification code, often portrayed as a machine-readable bar code that helps the item to be tracked for inventor

Stock-out - when there is insufficient stock available to meet demand

Storage insects - beetles, weevils, moths and borers

Sub-standard - below or not meeting the requirements of the standard

Succession planning - is the Identification and development of potential successors for key positions in an organization, through a systematic evaluation process and training. Unlike replacement planning (which grades an individual solely on the basis of his or her past performance) succession planning is largely predictive in judging an individual for a position he or she might never have been

Sucrose - common table sugar from refined sugar cane or sugar beets

Superior point technique - acknowledge objection is valid and counter with superior sales point or benefit

Sustainability - a business strategy that mandates the inclusion of environmental and social issues in the business model as part of long-term corporate growth

Sweetened condensed milk - a concentrated, sweet, thick, darker coloured milk product, resulting from the loss of water during heating and a sweeter flavour from the addition of sugar

Sweeteners - substance used to make foods taste sweeter, i.e. sugar, honey, syrups, artificial compounds such as saccharin,

Tempering - the process of melting and then cooling the melted chocolate so that it will form beta crystals, which give hard chocolate the desired characteristics of sheen, hardness and mouth feel

Tenderize - to make meat tender by pounding it to break down the fibres, by steeping it in a marinade,

or by treating with a tenderizer, such as papain, a plant enzyme

Terminal privileges - fees paid by carriers for vehicles and airplanes to load and unload at airports, railway stations, ports

Testimonial technique - use testimony of satisfied clients to answer objection

Thorax - Part of the lobster anatomy located between the head and the tail. Together, the head and the thorax of the lobster (i.e. the cephalothorax) are often referred to as the 'body' of the lobster.

Titration - A titration is a technique where a solution of known concentration is used to determine the concentration of an unknown solution. Typically, the titrant (the know solution) is added from a buret to a known quantity of the analyte (the unknown solution) until the reaction is complete

Traceability - ability to trace and follow raw materials, components and products, through all stages of receipt, production, processing and distribution, both forwards and backwards

Trade allowances - short term incentive offered to induce a retailer to stock up on a product

Trade contest - A contest to reward retailers that sell the most product

Trade sales promotion - Sales promotions targeted at retailers and wholesalers

Training programs - dealer employees are trained in selling the product

Troubleshooting - A form of problem solving, often applied to repair failed products or processes It is a logical, systematic search for the source of a problem so that it can be solved, and so the product or process can be made operational again Troubleshooting is needed to develop and maintain complex systems where the symptoms of a problem can have many possible causes

Turn negative into positive technique - turn objection into benefit, especially when objection is based on sales point

Ultrasonic acoustic tester - a testing device that recognizes the high frequency hissing sounds associated with air leaks. These portable units consist of directional microphones, amplifiers and audio filters and usually have either visual indicators or earphones to detect leaks

Union steward - Employee elected by his or her co-workers to act as the onsite union representative Stewards are generally responsible for handling grievances, resolving disputes, and overseeing the implementation of the terms of the collective- bargaining agreement Validation- a system by which you determine if processes and procedures are working

Vacuum deaeration - the removal of air and other dissolved gases found in fluid milk using temperature to create a vacuum that causes the release of air and non-condensable gases, which are removed from the product

Value-added - the process of changing or transforming a product from its original state to a more valuable state

Variance - A periodic measure used by governments, corporations or individuals to quantify the difference between budgeted and actual figures for a particular accounting category. A favorable budget variance refers to positive variances or gains; an unfavorable budget variance describes negative variance, meaning losses and shortfalls Budget variances occur because forecasters are unable to predict the future with complete accuracy

Vendor Managed Inventory system (VMI) - vendor (or supplier) manages the inventory that is held at the client's sites The vendor monitors inventory levels and organizes the replenishment of stock when required The client only pays for the inventory when it is used; the vendor and the client must use linked computer systems, usually using electronic data interchange (EDI) to enable the vendor to monitor inventory levels at the client site and submit invoices for payment automatically

Vent - The common outside opening of the cloaca in birds through which the digestive, excretory and reproductive tracts empty, i.e. anus

Vent-cutting - The process of cutting the skin and tissue around the anus in order to release and remove the viscera of poultry and game birds without rupturing

Verification - a process to determine if a task is completed according to the specified process

Viscera - The internal organs in the main body of the fish

Volatile aromas - gases with an odour that is easily released and detected. These odours may or may not be desirable. In butter making, volatile aromas tend to be the result of specific dairy feed at certain times of the year, which produce undesirable odours in butter. These gases are removed using vacuum deaeration

Warehouse Management System (WMS) - a software application that supports the day-to-day operations in a warehouse

Waybill - See Bill of lading

Weight break - a shipment's weight break is the point at which the weight of a shipment is large enough to be assessed the lower freight rates which are applicable to larger shipments, as per the carrier's tariff

Wet storage - Storing separated mussels in tanks of sea water or brine until ready for further processing.

Whey - the fluid that remains after curdling, considered a by-product of cheese making. Whey can be sweet or sour depending on the curdling pH and the use of rennet and/or LAB. Cheese can be made from whey, although the most common use is for concentrated whey protein powders

Whey butter - fat separated from whey liquid separation that is commercially processed into a spread product similar to a butter

Whey/whey liquid - the fluid that remains after coagulation or curdling, a by-product of cheesemaking and yogurt production. Whey can be sweet or sour (acidic) depending on the curdling pH and the use of rennet and/or lactic acid bacteria (LAB). Most common use if for the production of concentrated whey protein powders, although it can also be used to product whey cheese and whey butter

WHMIS - The short form for Workplace Hazardous Materials Information System. It is a comprehensive plan for providing information on the safe use of hazardous materials used in Canadian workplaces. Information is provided by means of product labels, safety data sheets (SDS) and worker education programs.

Wild oyster - Oysters that grow naturally in waterways (as opposed to farmed oysters) that are harvested by fisherpersons and processed in oyster processing facilities.

Workplace hazardous materials information system (WHMIS) - a comprehensive plan for providing information on the safe use of hazardous materials used in Canadian workplaces. Information is provided by means of product labels, material safety data sheets (MSDS) and worker education programs

Wrap - specialized food processing equipment designed with rollers and flippers that can wrap one in-process product around another in-process product that has been deposited on it

"Yes and…" technique - agree with customer’s objection and tactfully provide answer

Yield - ratio of amount of primary product output to the amount of raw material input expressed as a percentage

APPENDICES

APPENDIX A: USING FOOD PRODUCTION JOB COMPETENCIES FOR BAKERY PRODUCTION LINE WORKERS IN FOOD MANUFACTURING

The Bakery Production Line Worker in Food Manufacturing national occupational standard and its competency units can be used by owners, managers and supervisors, and trainers in creating interview guides, orientation checklists, performance evaluations and training curriculum as follows:

INTERVIEW GUIDES

The details in a NOS document provide an excellent summary of topics for an interview. This information touches upon job-specific skills and characteristics that can be framed as questions for potential employees.

Sample Interview Questions

JOB TITLE: Bakery Production Line Workers in Food Manufacturing
DEPARTMENT: Production Line Worker
INCUMBENT: Candidate Name
REPORTS TO: Supervisor

Attitude

1. What does professionalism mean to you?
2. Do you think teamwork is an important part of this job? Why or why not?
3. In addition to your skills and knowledge, what positive contributions do you think you will make to our company?

Skills

1. Tell me about the process you would take to batch raw materials/ in-process products?
2. Tell me about the types of commercial techniques used by production line workers in baking. Which are the most challenging and why?
3. Tell me about the kind of preparation you perform, and which kind of ingredients you use. Please include all safety procedures, sanitation procedures, as well as waste disposal in the response.
4. Please describe the different products you would make with the dough.

Knowledge

1. Can you name the Standard Operating Procedures?
2. Do you know the Good Manufacturing Practices?

ORIENTATION CHECKLIST

The skills outlined in a NOS can also be applied to the orientation program of an organization. Checklists highlighting key practices and responsibilities can be utilized to inform new employees of their specific tasks and duties.

Sample Orientation Checklist for New Hires

JOB TITLE: Bakery Production Line Workers in Food Manufacturing

DEPARTMENT: Food Production
REPORTS TO: Supervisor

Day 1

- Tour plant
- Introduce co-workers
- Show location of first aid stations
- Show waste disposal areas
- Explain organizational policies, procedures and practices
- Explain company's policies regarding waste disposal
- Explain company's policies regarding health and safety
- Food production facility, including:
    - Inventory
    - Production lines

PERFORMANCE REVIEW

The details in the standards are also useful as measurable criteria for occupations. The larger standards categories and subskills can be formatted into checklists for performance evaluations or reviews.

Sample Bakery Production Line Worker in Food Manufacturing Evaluation

Prepare Ingredients for Bakery Products

- □ Sieve/sift flour
- □ Scale ingredients

Use Commercial Baking Techniques

- □ Mix bakery ingredients
- □ Extrude dough
- □ Bulk ferment dough
- □ Divide dough
- □ Preshape and rest the dough
- □ Sheet/roll dough
- □ Laminate dough
- □ Cut sheeted / laminated dough
- □ Final shape dough
- □ Proof/final-proof bakery products
- □ Deposit batter
- □ Apply toppings/ decorations to unbaked products
- □ Deposit/inject filling into bakery products
- □ Boil bakery products
- □ Steam bakery products
- □ Bake/par-bake bakery products
- □ Fry bakery products
- □ Cool bakery products

Produce Commercial Bakery Products

- □ Prepare raw dough products
- □ Prepare yeast-leavened bakery products
- □ Prepare unleavened bakery products
- □ Prepare crackers
- □ Prepare quick bread
- □ Prepare cookies
- □ Prepare cakes
- □ Prepare pastries
- □ Prepare Choux pastries
- □ Prepare layered pastry products

APPENDIX B: JOB COMPETENCIES FOR FOOD MANUFACTURING

Food Processing Skills Canada (FPSC) - Online Skills Database

FPSC hosts the **National Online Skills Library** for the Food and Beverage Manufacturing industry. The skills Library provides employers and workers access to hundreds of documents, including National Occupational Standards, essential skills, job descriptions, skills assessment checklists, language benchmarks, and more for job positions in:

- ❖ Food Safety
- ❖ Equipment & Facilities Maintenance
- ❖ Research & Development
- ❖ Food Production
- ❖ Supply-chain & Logistics
- ❖ Marketing, Sales, HR and Finance

The FPSC SKILLS DATABASE has competencies needed for 635 tasks in the food industry. These tasks are organized under task groups and major task areas for easy identification.

Each of the 635 tasks has a description of **performance indicators** and **knowledge requirements** used to assess **job competency** in the task. Each task document can be downloadable in Word/PDF format at the **National Online Skills Library**.

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
COMMERCIAL BAKING	Prepare Ingredients for Bakery Products	1	Sieve/sift flour
COMMERCIAL BAKING	Prepare Ingredients for Bakery Products	2	Scale ingredients
COMMERCIAL BAKING	Use Commercial Baking Techniques	3	Mix bakery ingredients
COMMERCIAL BAKING	Use Commercial Baking Techniques	4	Extrude dough
COMMERCIAL BAKING	Use Commercial Baking Techniques	5	Bulk ferment dough
COMMERCIAL BAKING	Use Commercial Baking Techniques	6	Divide dough
COMMERCIAL BAKING	Use Commercial Baking Techniques	7	Preshape and rest dough
COMMERCIAL BAKING	Use Commercial Baking Techniques	8	Sheet/roll dough
COMMERCIAL BAKING	Use Commercial Baking Techniques	9	Laminate dough
COMMERCIAL BAKING	Use Commercial Baking Techniques	10	Cut sheeted/laminated dough
COMMERCIAL BAKING	Use Commercial Baking Techniques	11	Final shape dough
COMMERCIAL BAKING	Use Commercial Baking Techniques	12	Proof/final-proof bakery products
COMMERCIAL BAKING	Use Commercial Baking Techniques	13	Deposit batter
COMMERCIAL BAKING	Use Commercial Baking Techniques	14	Apply toppings/ decorations to unbaked products
COMMERCIAL BAKING	Use Commercial Baking Techniques	15	Deposit/inject filling into bakery products
COMMERCIAL BAKING	Use Commercial Baking Techniques	16	Boil bakery products
COMMERCIAL BAKING	Use Commercial Baking Techniques	17	Steam bakery products
COMMERCIAL BAKING	Use Commercial Baking Techniques	18	Bake/par-bake bakery products
COMMERCIAL BAKING	Use Commercial Baking Techniques	19	Fry bakery products
COMMERCIAL BAKING	Use Commercial Baking Techniques	20	Cool bakery products
COMMERCIAL BAKING	Use Commercial Baking Techniques	21	Apply icing/ glazes/ washes/ toppings/ decorations to bakery products
COMMERCIAL BAKING	Use Commercial Baking Techniques	22	Freeze bakery products
COMMERCIAL BAKING	Produce Commercial Bakery Products	23	Prepare raw dough products
COMMERCIAL BAKING	Produce Commercial Bakery Products	24	Prepare yeast-leavened bakery products
COMMERCIAL BAKING	Produce Commercial Bakery Products	25	Prepare unleavened bakery products
COMMERCIAL BAKING	Produce Commercial Bakery Products	26	Prepare crackers
COMMERCIAL BAKING	Produce Commercial Bakery Products	27	Prepare quick breads
COMMERCIAL BAKING	Produce Commercial Bakery Products	28	Prepare cookies
COMMERCIAL BAKING	Produce Commercial Bakery Products	29	Prepare cakes
COMMERCIAL BAKING	Produce Commercial Bakery Products	30	Prepare pastries
COMMERCIAL BAKING	Produce Commercial Bakery Products	31	Prepare Choux pastry
COMMERCIAL BAKING	Produce Commercial Bakery Products	32	Prepare short crust pastry products

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
COMMUNICATIONS	Communicate Effectively	33	Use active listening skills
COMMUNICATIONS	Communicate Effectively	34	Use speaking skills
COMMUNICATIONS	Communicate Effectively	35	Use hand signals
COMMUNICATIONS	Communicate Effectively	36	Use writing skills
COMMUNICATIONS	Communicate Effectively	37	Conduct meetings and presentations
COMMUNICATIONS	Communicate Effectively	38	Manage internal and external communication
COMMUNICATIONS	Communicate Effectively	39	Maintain Internal communication
COMMUNICATIONS	Communicate Effectively	40	Use computers and/or electronic devices
CRUSTACEAN PROCESSING	Process Whole Lobster	41	Clean whole lobster
CRUSTACEAN PROCESSING	Process Whole Lobster	42	Net whole lobster
CRUSTACEAN PROCESSING	Process Whole Lobster	43	Prepare brined whole lobster
CRUSTACEAN PROCESSING	Process Raw Lobster Tails	44	Remove raw lobster tails
CRUSTACEAN PROCESSING	Process Raw Lobster Tails	45	Clean raw lobster tails
CRUSTACEAN PROCESSING	Process In-Shell Lobster Segments	46	Separate/Split lobster into segments
CRUSTACEAN PROCESSING	Process In-Shell Lobster Segments	47	Clean in-shell lobster segments
CRUSTACEAN PROCESSING	Process Lobster Meat	48	Pick/Shuck lobster meat
CRUSTACEAN PROCESSING	Process Lobster Meat	49	Clean lobster meat
CRUSTACEAN PROCESSING	Process Lobster Meat	50	Brine cooked lobster meat
CRUSTACEAN PROCESSING	Process Lobster Meat	51	Prepare lobster mince
CRUSTACEAN PROCESSING	Process Crab	52	Butcher crab
CRUSTACEAN PROCESSING	Process Crab	53	Prepare crab meat
CRUSTACEAN PROCESSING	Process Crab	54	Prepare crab mince
CRUSTACEAN PROCESSING	Process Shrimp	55	Prepare shrimp for primary processing
CRUSTACEAN PROCESSING	Process Shrimp	56	Cook and peel shrimp using automated equipment
DAIRY PROCESSING	Receive Raw Milk	57	Receive Raw Milk
DAIRY PROCESSING	Process Fluid Milk	58	Remove micro-organisms from milk
DAIRY PROCESSING	Process Fluid Milk	59	Remove micro-organisms from milk for cheesemaking
DAIRY PROCESSING	Process Fluid Milk	60	Separate Milk
DAIRY PROCESSING	Process Fluid Milk	61	Standardize Milk
DAIRY PROCESSING	Process Fluid Milk	62	Pasteurize/heat-treat milk
DAIRY PROCESSING	Process Fluid Milk	63	Homogenize Milk
DAIRY PROCESSING	Process Fluid Milk	64	Batch milk for cheesemaking
DAIRY PROCESSING	Prepare Base/Blend	65	Prepare ingredients to add to dairy products
DAIRY PROCESSING	Prepare Base/Blend	66	Batch ingredients for dairy products
DAIRY PROCESSING	Use Dairy Processing Techniques	67	Produce butter
DAIRY PROCESSING	Use Dairy Processing Techniques	68	Produce cultured/fermented dairy products
DAIRY PROCESSING	Use Dairy Processing Techniques	69	Produce condensed dairy blend products
DAIRY PROCESSING	Use Dairy Processing Techniques	70	Produce milk powder products
DAIRY PROCESSING	Use Dairy Processing Techniques	71	Produce whey products
DAIRY PROCESSING	Use Dairy Processing Techniques	72	Produce lactose products
DAIRY PROCESSING	Use Dairy Processing Techniques	73	Produce frozen dairy products
DAIRY PROCESSING	Use Dairy Processing Techniques	74	Finish frozen dairy products
DAIRY PROCESSING	Use Cheese Making Techniques	75	Add coagulating agents and other additives
DAIRY PROCESSING	Use Cheese Making Techniques	76	Process coagulum
DAIRY PROCESSING	Use Cheese Making Techniques	77	Form cheese products
DAIRY PROCESSING	Use Cheese Making Techniques	78	Salt in-process cheese
DAIRY PROCESSING	Use Cheese Making Techniques	79	Prepare ingredients to add to cheese
DAIRY PROCESSING	Use Cheese Making Techniques	80	Complete post-production cheese-making tasks
DAIRY PROCESSING	Use Cheese Making Techniques	81	Age in-process cheese products
DAIRY PROCESSING	Use Cheese Making Techniques	82	Prepare whey-based cheese products
DAIRY PROCESSING	Evaluate Dairy Products	83	Perform sensory evaluation of cheese
DAIRY PROCESSING	Evaluate Dairy Products	84	Perform tests on cheese
DAIRY PROCESSING	Evaluate Dairy Products	85	Evaluate Dairy Products

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
EQUIPMENT AND TOOLS	Operate Food Processing Equipment	86	Conduct pre-operation check on food processing equipment
EQUIPMENT AND TOOLS	Operate Food Processing Equipment	87	Start up food processing equipment
EQUIPMENT AND TOOLS	Operate Food Processing Equipment	88	Monitor food processing equipment operation
EQUIPMENT AND TOOLS	Operate Food Processing Equipment	89	Perform food processing changeovers
EQUIPMENT AND TOOLS	Operate Food Processing Equipment	90	Perform minor maintenance on food processing equipment
EQUIPMENT AND TOOLS	Operate Food Processing Equipment	91	Troubleshoot minor food processing equipment problems
EQUIPMENT AND TOOLS	Use Food Processing Hand and Power Tools	92	Use food processing hand and power tools
EQUIPMENT AND TOOLS	Use Food Processing Hand and Power Tools	93	Use knives and saws
EQUIPMENT AND TOOLS	Operate Materials Handling Equipment	94	Conduct pre-operation check on materials handling equipment
EQUIPMENT AND TOOLS	Operate Materials Handling Equipment	95	Start up materials handling equipment
EQUIPMENT AND TOOLS	Operate Materials Handling Equipment	96	Monitor materials handling equipment operation
EQUIPMENT AND TOOLS	Operate Materials Handling Equipment	97	Perform minor maintenance on materials handling equipment
EQUIPMENT AND TOOLS	Operate Materials Handling Equipment	98	Troubleshoot minor materials handling equipment problems
EQUIPMENT AND TOOLS	Use Materials Handling Hand and Power Tools	99	Use materials handling hand and power tools
EQUIPMENT AND TOOLS	Lock out Equipment	100	Lock out equipment
EQUIPMENT AND TOOLS	Maintain Equipment	101	Develop preventative maintenance program
EQUIPMENT AND TOOLS	Maintain Equipment	102	Conduct preventative maintenance
EQUIPMENT AND TOOLS	Maintain Equipment	103	Conduct shutdown maintenance
EQUIPMENT AND TOOLS	Maintain Equipment	104	Maintain parts inventory
EQUIPMENT AND TOOLS	Repair Equipment	105	Troubleshoot equipment malfunctions
EQUIPMENT AND TOOLS	Repair Equipment	106	Complete equipment repairs
EQUIPMENT AND TOOLS	Operate Quality Control Monitoring Equipment	107	Calibrate quality control monitoring equipment
EQUIPMENT AND TOOLS	Operate Quality Control Monitoring Equipment	108	Use quality control monitoring equipment
FACILITY MAINTENANCE AND REPAIRS	Maintain Heating, Ventilation, Air Conditioning and Refrigeration System (HVAC-R)	109	Oversee design of facility HVAC-R system
FACILITY MAINTENANCE AND REPAIRS	Maintain Heating, Ventilation, Air Conditioning and Refrigeration System (HVAC-R)	110	Install facility HVAC-R system
FACILITY MAINTENANCE AND REPAIRS	Maintain Heating, Ventilation, Air Conditioning and Refrigeration System (HVAC-R)	111	Monitor facility HVAC-R system
FACILITY MAINTENANCE AND REPAIRS	Maintain Heating, Ventilation, Air Conditioning and Refrigeration System (HVAC-R)	112	Maintain facility HVAC-R system
FACILITY MAINTENANCE AND REPAIRS	Maintain Heating, Ventilation, Air Conditioning and Refrigeration System (HVAC-R)	113	Repair facility HVAC-R system
FACILITY MAINTENANCE AND REPAIRS	Maintain Electrical System	114	Oversee design of facility electrical system
FACILITY MAINTENANCE AND REPAIRS	Maintain Electrical System	115	Install electrical system equipment and components
FACILITY MAINTENANCE AND REPAIRS	Maintain Electrical System	116	Maintain electrical system
FACILITY MAINTENANCE AND REPAIRS	Maintain Electrical System	117	Service electrical system
FACILITY MAINTENANCE AND REPAIRS	Maintain Electrical System	118	Repair lighting systems
FACILITY MAINTENANCE AND REPAIRS	Maintain Electrical System	119	Evaluate potential to conserve electricity
FACILITY MAINTENANCE AND REPAIRS	Maintain Electrical System	120	Conserve electrical energy
FACILITY MAINTENANCE AND REPAIRS	Maintain Piping System	121	Oversee design of process piping system
FACILITY MAINTENANCE AND REPAIRS	Maintain Piping System	122	Install process piping system
FACILITY MAINTENANCE AND REPAIRS	Maintain Piping System	123	Maintain piping system
FACILITY MAINTENANCE AND REPAIRS	Maintain Piping System	124	Repair piping system
FACILITY MAINTENANCE AND REPAIRS	Maintain Water System	125	Oversee design of facility water flows
FACILITY MAINTENANCE AND REPAIRS	Maintain Water System	126	Install water purification system
FACILITY MAINTENANCE AND REPAIRS	Maintain Water System	127	Maintain water purification system
FACILITY MAINTENANCE AND REPAIRS	Maintain Water System	128	Evaluate potential to conserve water
FACILITY MAINTENANCE AND REPAIRS	Maintain Water System	129	Conserve water
FACILITY MAINTENANCE AND REPAIRS	Maintain Water System	130	Monitor water flows
FACILITY MAINTENANCE AND REPAIRS	Maintain Wastewater System	131	Oversee design of facility wastewater management system
FACILITY MAINTENANCE AND REPAIRS	Maintain Wastewater System	132	Install process facility wastewater system
FACILITY MAINTENANCE AND REPAIRS	Maintain Wastewater System	133	Monitor facility wastewater management system
FACILITY MAINTENANCE AND REPAIRS	Maintain Wastewater System	134	Repair facility wastewater management system

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
FACILITY MAINTENANCE AND REPAIRS	Maintain Plumbing System	135	Oversee design of facility plumbing system
FACILITY MAINTENANCE AND REPAIRS	Maintain Plumbing System	136	Install plumbing equipment and components
FACILITY MAINTENANCE AND REPAIRS	Maintain Plumbing System	137	Maintain plumbing system
FACILITY MAINTENANCE AND REPAIRS	Maintain Plumbing System	138	Service plumbing system
FACILITY MAINTENANCE AND REPAIRS	Maintain Steam System	139	Oversee design of steam system
FACILITY MAINTENANCE AND REPAIRS	Maintain Steam System	140	Install steam system
FACILITY MAINTENANCE AND REPAIRS	Maintain Steam System	141	Maintain steam system
FACILITY MAINTENANCE AND REPAIRS	Maintain Steam System	142	Repair steam system
FACILITY MAINTENANCE AND REPAIRS	Maintain Steam System	143	Evaluate potential to conserve steam
FACILITY MAINTENANCE AND REPAIRS	Maintain Steam System	144	Conserve steam
FACILITY MAINTENANCE AND REPAIRS	Maintain Compressed Air and Gas System	145	Oversee design of compressed air and gas system
FACILITY MAINTENANCE AND REPAIRS	Maintain Compressed Air and Gas System	146	Install compressed air and gas system
FACILITY MAINTENANCE AND REPAIRS	Maintain Compressed Air and Gas System	147	Maintain compressed air and gas system
FACILITY MAINTENANCE AND REPAIRS	Maintain Compressed Air and Gas System	148	Repair compressed air and gas system
FACILITY MAINTENANCE AND REPAIRS	Maintain Compressed Air and Gas System	149	Evaluate potential to conserve compressed air/gas
FACILITY MAINTENANCE AND REPAIRS	Maintain Compressed Air and Gas System	150	Conserve compressed air/gas
FINANCIAL MANAGEMENT	Manage Finances	151	Develop budget
FINANCIAL MANAGEMENT	Manage Finances	152	Forecast Food Safety and Quality Assurance (FSQA) expenditures
FINANCIAL MANAGEMENT	Manage Finances	153	Monitor budget performance
FINANCIAL MANAGEMENT	Manage Finances	154	Monitor production line's budget performance
FINANCIAL MANAGEMENT	Manage Finances	155	Develop product costing
FINANCIAL MANAGEMENT	Manage Finances	156	Manage cash flow
FINANCIAL MANAGEMENT	Manage Finances	157	Generate financial reports
FINANCIAL MANAGEMENT	Manage Finances	158	Obtain alternative sources of funds
FINANCIAL MANAGEMENT	Complete Financial Tasks	159	Process payroll
FINANCIAL MANAGEMENT	Complete Financial Tasks	160	Administer benefits
FINANCIAL MANAGEMENT	Complete Financial Tasks	161	Process receivables
FINANCIAL MANAGEMENT	Complete Financial Tasks	162	Process payables
FISH PROCESSING	Dress Fish	163	Manually scale fish
FISH PROCESSING	Dress Fish	164	Operate automated systems to scale fish
FISH PROCESSING	Dress Fish	165	Manually gut fish
FISH PROCESSING	Dress Fish	166	Operate automated systems to gut fish
FISH PROCESSING	Dress Fish	167	Manually de-head fish
FISH PROCESSING	Dress Fish	168	Operate automated systems to de-head fish
FISH PROCESSING	Dress Fish	169	Manually trim fish
FISH PROCESSING	Dress Fish	170	Operate automated systems to trim fish
FISH PROCESSING	Dress Fish	171	Operate automated systems to skin fish
FISH PROCESSING	Dress Fish	172	Debone fish
FISH PROCESSING	Portion Fish	173	Manually steak-cut whole fish
FISH PROCESSING	Portion Fish	174	Manually fillet round-body fish
FISH PROCESSING	Portion Fish	175	Manually fillet flat-body fish
FISH PROCESSING	Portion Fish	176	Operate automated systems to fillet fish
FISH PROCESSING	Portion Fish	177	Manually portion fish fillets
FISH PROCESSING	Portion Fish	178	Operate automated systems to portion fish
FISH PROCESSING	Portion Fish	179	Operate automated systems to mince fish or offal
FOOD PACKAGING	Package Product	180	Prepare packaging materials
FOOD PACKAGING	Package Product	181	Portion/Weigh product
FOOD PACKAGING	Package Product	182	Fill and seal packages
FOOD PACKAGING	Package Product	183	Bottle/can in-process products
FOOD PACKAGING	Package Product	184	Label products
FOOD PACKAGING	Package Product	185	Tray/Box products
FOOD PACKAGING	Package Product	186	Palletize products
FOOD PACKAGING	Package Product	187	Perform packaging materials changeover

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
FOOD PACKAGING	Package Product	188	Perform packaging equipment change over
FOOD PACKAGING	Package Product	189	Operate aseptic packaging system
FOOD PROCESSING	Prepare Raw Materials/In-process Products	190	Thaw/Break-up ingredients/products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	191	Clean raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	192	Prepare surfaces of raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	193	Size raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	194	Shape raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	195	Crush/Grind raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	196	Separate/Filter/Press raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	197	Emulsify raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	198	Dry/Dehydrate raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	199	Re-hydrate raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	200	Sort/Categorize/Grade raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	201	Chill/Freeze raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	202	Age raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	203	Sterilize/Pasteurize raw materials/in-process products
FOOD PROCESSING	Prepare Raw Materials/In-process Products	204	Marinade/Tenderize tougher meat cuts
FOOD PROCESSING	Prepare Raw Materials/In-process Products	205	Temper chocolate
FOOD PROCESSING	Prepare Raw Materials/In-process Products	206	Brine-freeze crustaceans
FOOD PROCESSING	Prepare Raw Materials/In-process Products	207	Freeze fish, crustaceans and mollusks
FOOD PROCESSING	Prepare Raw Materials/In-process Products	208	Pasteurize mussels
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	209	Batch raw materials/in-process products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	210	Mix/Blend raw materials/in-process products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	211	Knead dough
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	212	Add seasonings, flavourings and other additives
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	213	Bread/Batter/Sauce in-process products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	214	Ferment/Proof/Cure in-process products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	215	Cook in-process products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	216	Smoke in-process products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	217	Add CO2 to raw materials/in-process products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	218	Fill/stuff/encrust/wrap in-process materials
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	219	Assemble/Finish products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	220	Salt Fish
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	221	Retort food products
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	222	Cook crustaceans/mollusks
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	223	Cool crustaceans/mollusks
FOOD PROCESSING	Transform Raw Materials/ In-Process Products	224	Blanch crustaceans
FOOD PRODUCTION MANAGEMENT	Plan for Equipment	225	Design plant equipment layout
FOOD PRODUCTION MANAGEMENT	Plan for Equipment	226	Provide input for food processing equipment purchases
FOOD PRODUCTION MANAGEMENT	Plan for Equipment	227	Define process capacity
FOOD PRODUCTION MANAGEMENT	Install Equipment	228	Install equipment
FOOD PRODUCTION MANAGEMENT	Install Equipment	229	Commission equipment
FOOD PRODUCTION MANAGEMENT	Set Strategic Direction for Food Production	230	Develop production plan
FOOD PRODUCTION MANAGEMENT	Set Strategic Direction for Food Production	231	Develop production schedule
FOOD PRODUCTION MANAGEMENT	Set Strategic Direction for Food Production	232	Review production reports
FOOD PRODUCTION MANAGEMENT	Set Strategic Direction for Food Production	233	Predict yield for cheese-making
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	234	Monitor production workflow
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	235	Monitor yield
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	236	Manage production problems
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	237	Adjust production workflow
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	238	Implement food processing changeovers

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	239	Implement strategies to maximize personnel and equipment use
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	240	Assess availability of raw materials and packaging supplies
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	241	Support improvement of manufacturing processes
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	242	Support use of excess raw materials and by-products
FOOD PRODUCTION MANAGEMENT	Implement Production Plan	243	Prepare production reports
FOOD PRODUCTION MANAGEMENT	Monitor Dairy Product Processing Environment	244	Monitor cheese-making production environment
FOOD PRODUCTION MANAGEMENT	Monitor Storage Conditions of In-Process Fish and Seafood	245	Monitor storage conditions of in-process fish and seafood
FOOD SAFETY MANAGEMENT SYSTEM	Develop Prerequisite Programs and Supporting Documentation	246	Develop prerequisite program for premises
FOOD SAFETY MANAGEMENT SYSTEM	Develop Prerequisite Programs and Supporting Documentation	247	Develop prerequisite program for transport, storage, purchasing, shipping and receiving
FOOD SAFETY MANAGEMENT SYSTEM	Develop Prerequisite Programs and Supporting Documentation	248	Develop prerequisite program for equipment and preventative maintenance
FOOD SAFETY MANAGEMENT SYSTEM	Develop Prerequisite Programs and Supporting Documentation	249	Develop prerequisite program for personnel and training
FOOD SAFETY MANAGEMENT SYSTEM	Develop Prerequisite Programs and Supporting Documentation	250	Develop prerequisite program for sanitation and pest control
FOOD SAFETY MANAGEMENT SYSTEM	Develop Prerequisite Programs and Supporting Documentation	251	Develop prerequisite program for recalls
FOOD SAFETY MANAGEMENT SYSTEM	Develop Prerequisite Programs and Supporting Documentation	252	Develop prerequisite program for other operational control programs
FOOD SAFETY MANAGEMENT SYSTEM	Establish Prerequisite Programs	253	Establish prerequisite program for premises
FOOD SAFETY MANAGEMENT SYSTEM	Establish Prerequisite Programs	254	Establish prerequisite program for transportation, purchasing, shipping, receiving and storage
FOOD SAFETY MANAGEMENT SYSTEM	Establish Prerequisite Programs	255	Establish prerequisite program for Equipment
FOOD SAFETY MANAGEMENT SYSTEM	Establish Prerequisite Programs	256	Establish prerequisite program for personnel and training
FOOD SAFETY MANAGEMENT SYSTEM	Establish Prerequisite Programs	257	Establish prerequisite program for sanitation and pest control
FOOD SAFETY MANAGEMENT SYSTEM	Establish Prerequisite Programs	258	Establish prerequisite program for recalls
FOOD SAFETY MANAGEMENT SYSTEM	Establish Prerequisite Programs	259	Establish operational prerequisite control program
FOOD SAFETY MANAGEMENT SYSTEM	Establish Prerequisite Programs	260	Establish SOPs and documentation for prerequisite programs
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	261	Assemble team
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	262	Describe products and intended uses
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	263	Create process flow diagram and plant schematic
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	264	Verify process flow and plant schematic
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	265	Conduct hazard analysis
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	266	Determine critical control points
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	267	Establish critical limits
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	268	Establish procedures to monitor each critical control point (CCP)
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	269	Establish procedures to take corrective action
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	270	Establish verification and validation procedures
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	271	Establish record keeping and documentation control procedures
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	272	Conduct Gap Analysis
FOOD SAFETY MANAGEMENT SYSTEM	Develop HACCP Plan(s) or Equivalent Food Safety Plan(s)	273	Validate CCPs
FOOD SAFETY MANAGEMENT SYSTEM	Develop Food Defense Plan	274	Develop food defense plan
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Safety Management System	275	Communicate food safety management systems to management staff
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Safety Management System	276	Verify food safety programs and tasks are being completed as required
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Safety Management System	277	Review and validate food safety management system
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Safety Management System	278	Update program documentation

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Safety Management System	279	Communicate details of food safety management systems to production staff
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Safety Management System	280	Participate in food safety incident investigations
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Safety Management System	281	Coordinate food safety incident investigations
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Safety Management System	282	Monitor and verify food safety programs and tasks are being completed as required
FOOD SAFETY MANAGEMENT SYSTEM	Implement Food Defense Plan	283	Implement food defense plan
FOOD SAFETY MANAGEMENT SYSTEM	Support Organizational Food Safety Culture	284	Establish organizational food safety culture
FOOD SAFETY MANAGEMENT SYSTEM	Support Organizational Food Safety Culture	285	Support organizational food safety culture
FOOD SAFETY MANAGEMENT SYSTEM	Comply with Food Safety Management System	286	Comply with food safety management system
FOOD SAFETY MANAGEMENT SYSTEM	Comply with Food Safety Management System	287	Comply with Food Safety Standards, Programs and Regulations system
FOOD SAFETY MANAGEMENT SYSTEM	Manage Audits	288	Develop system to manage audits
FOOD SAFETY MANAGEMENT SYSTEM	Manage Audits	289	Develop tracking tool(S)
FOOD SAFETY MANAGEMENT SYSTEM	Manage Audits	290	Prepare for audits
FOOD SAFETY MANAGEMENT SYSTEM	Manage Audits	291	Participate in audits
FOOD SAFETY MANAGEMENT SYSTEM	Manage Audits	292	Prepare for internal audits
FOOD SAFETY MANAGEMENT SYSTEM	Manage Audits	293	Conduct internal audits
FOOD SAFETY MANAGEMENT SYSTEM	Manage Audits	294	Oversee external audits
FOOD SAFETY MANAGEMENT SYSTEM	Manage Audits	295	Oversee audit follow-up
FOOD TRACEABILITY	Manage Food Traceability	296	Create food traceability system
FOOD TRACEABILITY	Manage Food Traceability	297	Implement food traceability system
FOOD TRACEABILITY	Manage Food Traceability	298	Maintain food traceability program
FOOD TRACEABILITY	Manage Food Traceability	299	Monitor food traceability on production line
FOOD TRACEABILITY	Comply with Food Traceability system	300	Comply with food traceability system
HEALTH AND SAFETY	Manage Occupational Health and Safety Program	301	Develop occupational health and safety program
HEALTH AND SAFETY	Manage Occupational Health and Safety Program	302	Lead emergency preparation
HEALTH AND SAFETY	Manage Occupational Health and Safety Program	303	Conduct safety inspections
HEALTH AND SAFETY	Manage Occupational Health and Safety Program	304	Evaluate occupational health and safety program
HEALTH AND SAFETY	Manage Occupational Health and Safety Program	305	Conduct safety inspections on production line
HEALTH AND SAFETY	Comply with Occupational Health and Safety Program	306	Follow occupational health and safety program
HEALTH AND SAFETY	Comply with Occupational Health and Safety Program	307	Participate in emergency preparation
HEALTH AND SAFETY	Comply with Occupational Health and Safety Program	308	Direct accident/incident investigations
HEALTH AND SAFETY	Comply with Occupational Health and Safety Program	309	Participate in accident/incident investigations
HEALTH AND SAFETY	Manage Facility Security	310	Develop facility security system
HEALTH AND SAFETY	Manage Facility Security	311	Conduct security exercises and drills
HEALTH AND SAFETY	Manage Facility Security	312	Monitor adherence to facility security program
HEALTH AND SAFETY	Comply with Facility Security Program	313	Follow facility security program
HEALTH AND SAFETY	Comply with Facility Security Program	314	Participate in security exercises and drills
HEALTH AND SAFETY	Manage Worker's Compensation	315	Administer Worker’s Compensation account
HEALTH AND SAFETY	Manage Worker's Compensation	316	Manage Worker’s Compensation claims
INFORMATION TECHNOLOGY (IT) SYSTEMS	Set Strategic Direction of IT Systems	317	Develop IT plan
INFORMATION TECHNOLOGY (IT) SYSTEMS	Set Strategic Direction of IT Systems	318	Develop IT policies and procedures

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
INSPECTIONS AND PRODUCT TESTING	Conduct Inspections	319	Conduct incoming inspections
INSPECTIONS AND PRODUCT TESTING	Conduct Inspections	320	Conduct pre-operational inspections
INSPECTIONS AND PRODUCT TESTING	Conduct Inspections	321	Monitor use of tools and equipment
INSPECTIONS AND PRODUCT TESTING	Conduct Inspections	322	Monitor Critical Control Points
INSPECTIONS AND PRODUCT TESTING	Conduct Inspections	323	Conduct changeover inspection
INSPECTIONS AND PRODUCT TESTING	Conduct Inspections	324	Conduct storage inspection
INSPECTIONS AND PRODUCT TESTING	Conduct Inspections	325	Conduct outgoing inspections
INSPECTIONS AND PRODUCT TESTING	Oversee Inspections and Product Testing	326	Oversee inspections and product testing
INSPECTIONS AND PRODUCT TESTING	Conduct Product Tests	327	Conduct organoleptic (visual, touch, smell taste) product testing
INSPECTIONS AND PRODUCT TESTING	Conduct Product Tests	328	Conduct microbiological product sampling
INSPECTIONS AND PRODUCT TESTING	Conduct Product Tests	329	Conduct analytical product testing
INSPECTIONS AND PRODUCT TESTING	Conduct Product Tests	330	Conduct allergen sampling of finished products
LEADERSHIP	Provide Leadership	331	Develop strategic vision
LEADERSHIP	Provide Leadership	332	Develop organizational sustainability plan
LEADERSHIP	Provide Leadership	333	Develop action plans
LEADERSHIP	Provide Leadership	334	Implement action plans
LEADERSHIP	Provide Leadership	335	Delegate tasks
LEADERSHIP	Provide Leadership	336	Make decisions
LEADERSHIP	Provide Leadership	337	Provide training
LEADERSHIP	Manage Organizational Change	338	Promote continuous improvement
LEADERSHIP	Manage Organizational Change	339	Develop change management plan
LEADERSHIP	Manage Organizational Change	340	Develop Food Safety and Quality Assurance (FSQA) change management plan
LEADERSHIP	Manage Organizational Change	341	Implement organizational change
LEADERSHIP	Manage Organizational Change	342	Support organizational change
LEADERSHIP	Manage Organizational Change	343	Keep up to date with changes in the industry
LEADERSHIP	Demonstrate Professionalism	344	Facilitate collaboration of work teams
LEADERSHIP	Demonstrate Professionalism	345	Collaborate with team members
LEADERSHIP	Demonstrate Professionalism	346	Develop professionally
LEADERSHIP	Demonstrate Professionalism	347	Exhibit professional and ethical conduct
LEADERSHIP	Demonstrate Professionalism	348	Mentor/coach others
LEADERSHIP	Demonstrate Professionalism	349	Manage own stress
LEADERSHIP	Demonstrate Professionalism	350	Manage own time
LEADERSHIP	Demonstrate Professionalism	351	Contribute to a solution-focused workplace
LEADERSHIP	Demonstrate Professionalism	352	Collaborate with external organizations/agencies
LEADERSHIP	Demonstrate Professionalism	353	Demonstrate negotiation skills
LEADERSHIP	Demonstrate Professionalism	354	Demonstrate mediation skills
LEADERSHIP	Demonstrate Professionalism	355	Demonstrate leadership
LEADERSHIP	Demonstrate Professionalism	356	Solve problems
LEADERSHIP	Demonstrate Professionalism	357	Liaise with regulatory agencies/ bodies /organizations
LEADERSHIP	Demonstrate Professionalism	358	Liaise with suppliers
LEADERSHIP	Demonstrate Professionalism	359	Liaise with customers and consumers
LEADERSHIP	Demonstrate Professionalism	360	Liaise with contractors
LOGISTICS	Manage Inventory	361	Establish inventory system
LOGISTICS	Manage Inventory	362	Maintain inventory system
LOGISTICS	Manage Inventory	363	Manage problem inventory

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
LOGISTICS	Manage Inventory	364	Complete Cycle Counts
LOGISTICS	Handle Inventory	365	Pick and pack orders
LOGISTICS	Handle Inventory	366	Prepare product for shipping
LOGISTICS	Handle Inventory	367	Load product
LOGISTICS	Handle Inventory	368	Receive product
LOGISTICS	Handle Inventory	369	Unload product
LOGISTICS	Handle Inventory	370	Provide inventory to production
LOGISTICS	Handle Inventory	371	Follow storage procedures
LOGISTICS	Handle Inventory	372	Receive live fish and seafood
LOGISTICS	Manage Warehouse	373	Plan warehouse operations
LOGISTICS	Manage Warehouse	374	Develop warehouse plan
LOGISTICS	Manage Warehouse	375	Oversee warehouse operations
LOGISTICS	Manage Transportation	376	Design transportation network
LOGISTICS	Manage Transportation	377	Determine carrier requirements
LOGISTICS	Manage Transportation	378	Select carrier
LOGISTICS	Manage Transportation	379	Obtain transportation insurance
MARKETING	Set Strategic Direction for Marketing	380	Conduct situational analysis
MARKETING	Set Strategic Direction for Marketing	381	Develop integrated marketing strategy
MARKETING	Set Strategic Direction for Marketing	382	Develop branding
MARKETING	Set Strategic Direction for Marketing	383	Develop pricing strategy
MARKETING	Set Strategic Direction for Marketing	384	Monitor implementation of marketing strategy
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	385	Provide information about products and services
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	386	Advertise products and services
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	387	Produce marketing/promotional materials
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	388	Distribute marketing/promotional materials
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	389	Develop marketing/promotional events
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	390	Oversee promotional events
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	391	Develop online presence
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	392	Develop contests
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	393	Develop trade sales promotions
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	394	Participate in industry shows
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	395	Conduct public relations activities
MARKETING	Execute Marketing, Public Relations and Media Relations Strategies	396	Manage crises and controversies
MEAT ANIMAL SLAUGHTERING	Prepare Animals for Dressing and Evisceration	397	Receive animals
MEAT ANIMAL SLAUGHTERING	Prepare Animals for Dressing and Evisceration	398	Slaughter animals
MEAT ANIMAL SLAUGHTERING	Dress and Eviscerate Animals	399	Prepare surfaces of slaughtered animals
MEAT ANIMAL SLAUGHTERING	Dress and Eviscerate Animals	400	Eviscerate slaughtered beef/veal
MEAT ANIMAL SLAUGHTERING	Dress and Eviscerate Animals	401	Eviscerate slaughtered pork
MEAT ANIMAL SLAUGHTERING	Dress and Eviscerate Animals	402	Eviscerate slaughtered lamb and other small ruminants
MEAT ANIMAL SLAUGHTERING	Dress and Eviscerate Animals	403	Eviscerate slaughtered farmed game animals
MEAT ANIMAL SLAUGHTERING	Dress and Eviscerate Animals	404	Clean carcasses
MEAT CUTTING	Use Meat Cutting Techniques	405	Use required cutting method
MEAT CUTTING	Use Meat Cutting Techniques	406	Size meat cuts
MEAT CUTTING	Use Meat Cutting Techniques	407	Shape meat cuts
MEAT CUTTING	Use Meat Cutting Techniques	408	Produce ground meat

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
MEAT CUTTING	Fabricate Meat Cuts for Beef/Veal	409	Breakdown beef/veal carcass into primal cuts
MEAT CUTTING	Fabricate Meat Cuts for Beef/Veal	410	Cut beef/veal sub-primal cuts
MEAT CUTTING	Fabricate Meat Cuts for Beef/Veal	411	Cut beef/veal retail cuts
MEAT CUTTING	Fabricate Meat Cuts for Pork	412	Breakdown pork carcass into primal cuts
MEAT CUTTING	Fabricate Meat Cuts for Pork	413	Cut pork sub-primal cuts
MEAT CUTTING	Fabricate Meat Cuts for Pork	414	Cut pork retail cuts
MEAT CUTTING	Fabricate Meat Cuts for Lamb	415	Breakdown lamb carcass into primal cuts
MEAT CUTTING	Fabricate Meat Cuts for Lamb	416	Cut lamb retail cuts
MEAT CUTTING	Fabricate Meat Cuts for Farmed Game Animals	417	Breakdown farmed games carcass into primal cuts
MEAT CUTTING	Fabricate Meat Cuts for Farmed Game Animals	418	Cut farmed game into retail cuts
MOLLUSK PROCESSING	Process Mussels	419	Strip mussels
MOLLUSK PROCESSING	Process Mussels	420	Prepare mussels for wet storage
MOLLUSK PROCESSING	Process Mussels	421	De-clump mussels
MOLLUSK PROCESSING	Process Mussels	422	De-byss mussels
MOLLUSK PROCESSING	Process Clams	423	Shuck clams
MOLLUSK PROCESSING	Process Clams	424	Separate clams
MOLLUSK PROCESSING	Process Oysters	425	Grade wild oysters
MOLLUSK PROCESSING	Process Oysters	426	Process wild and farmed oysters
MOLLUSK PROCESSING	Process Scallops	427	Prepare raw scallops
ORGANIZATIONAL POLICIES AND PROCEDURES	Comply with Legislation/Regulations	428	Determine applicable legislation/regulations
ORGANIZATIONAL POLICIES AND PROCEDURES	Comply with Legislation/Regulations	429	Assist regulatory agents/inspectors
ORGANIZATIONAL POLICIES AND PROCEDURES	Comply with Legislation/Regulations	430	Interact with regulatory agents/inspectors
ORGANIZATIONAL POLICIES AND PROCEDURES	Comply with Organizational Policies and Procedures	431	Develop organizational policies
ORGANIZATIONAL POLICIES AND PROCEDURES	Comply with Organizational Policies and Procedures	432	Develop Standard Operating Procedures (SOPs)
ORGANIZATIONAL POLICIES AND PROCEDURES	Comply with Organizational Policies and Procedures	433	Implement organizational policies and SOPs
ORGANIZATIONAL POLICIES AND PROCEDURES	Comply with Organizational Policies and Procedures	434	Comply with organizational policies and procedures/SOPs
ORGANIZATIONAL POLICIES AND PROCEDURES	Comply with Organizational Policies and Procedures	435	Oversee staff compliance with organizational policies and SOPs
PEST CONTROL	Manage Facility Pest Control Program	436	Develop pest control program
PEST CONTROL	Manage Facility Pest Control Program	437	Implement facility pest control program
PEST CONTROL	Manage Facility Pest Control Program	438	Monitor facility pest control program
PEST CONTROL	Manage Facility Pest Control Program	439	Oversee staff compliance with pest control program
PEST CONTROL	Comply with Facility Pest Control Program	440	Comply with facility pest control program
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	441	Receive poultry and game birds
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	442	Hang poultry and game birds
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	443	Stun poultry and game birds
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	444	Manually slaughter poultry and game birds
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	445	Monitor automated poultry and game bird slaughtering system
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	446	Monitor automated systems to prepare poultry/game bird carcasses for evisceration
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	447	Monitor automated hock removal system
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	448	Eviscerate poultry and game birds
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	449	Monitor automated poultry and game bird evisceration systems
POULTRY AND GAME BIRD PROCESSING	Slaughter Poultry and Game Birds	450	Chill cleaned poultry and game bird carcasses
POULTRY AND GAME BIRD PROCESSING	Fabricate Retail and Specialty Cuts for Poultry and Game Birds	451	Manually cut poultry and game birds
POULTRY AND GAME BIRD PROCESSING	Fabricate Retail and Specialty Cuts for Poultry and Game Birds	452	Monitor automated systems to cut poultry and game birds
POULTRY AND GAME BIRD PROCESSING	Fabricate Retail and Specialty Cuts for Poultry and Game Birds	453	Produce ground poultry meat

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
PURCHASING	Manage Purchasing	454	Research suppliers and prices
PURCHASING	Manage Purchasing	455	Choose suppliers
PURCHASING	Manage Purchasing	456	Oversee purchasing process
PURCHASING	Manage Purchasing	457	Issue claims to suppliers
PURCHASING	Complete Purchasing Tasks	458	Complete purchasing tasks
QUALITY MANAGEMENT	Develop Quality Management Systems	459	Develop quality manual
QUALITY MANAGEMENT	Develop Quality Management Systems	460	Benchmark best practices
QUALITY MANAGEMENT	Develop Quality Management Systems	461	Create deviation management system
QUALITY MANAGEMENT	Develop Quality Management Systems	462	Create corrective and preventative action (CAPA) system
QUALITY MANAGEMENT	Develop Quality Management Systems	463	Create complaint and inquiry system
QUALITY MANAGEMENT	Develop Quality Management Systems	464	Communicate quality assessment outcomes
QUALITY MANAGEMENT	Implement Quality Management System	465	Communicate quality management systems to management and staff
QUALITY MANAGEMENT	Implement Quality Management System	466	Monitor quality management systems
QUALITY MANAGEMENT	Implement Quality Management System	467	Collaborate with product development team
QUALITY MANAGEMENT	Implement Quality Management System	468	Communicate details of quality management system to production staff
QUALITY MANAGEMENT	Implement Quality Management System	469	Liaise with production staff regarding quality management
QUALITY MANAGEMENT	Implement Quality Management System	470	Provide input into improving quality on the production line
QUALITY MANAGEMENT	Monitor Product Quality	471	Monitor quality of raw ingredients and in-process products
QUALITY MANAGEMENT	Monitor Product Quality	472	Monitor quality of raw meat
QUALITY MANAGEMENT	Monitor Product Quality	473	Grade/Inspect finished products
QUALITY MANAGEMENT	Monitor Product Quality	474	Inspect finished meat, game and poultry products
QUALITY MANAGEMENT	Monitor Product Quality	475	Monitor foreign body detection and removal equipment
QUALITY MANAGEMENT	Monitor Product Quality	476	Take corrective action to ensure product quality
QUALITY MANAGEMENT	Monitor Product Quality	477	Handle product non-conformances
QUALITY MANAGEMENT	Monitor Product Quality	478	Grade/Inspect fish and seafood
QUALITY MANAGEMENT	Monitor Product Quality	479	Monitor quality of raw poultry and game birds
QUALITY MANAGEMENT	Monitor Product Quality	480	Grade/inspect fresh poultry and game bird carcasses
QUALITY MANAGEMENT	Monitor Product Packaging	481	Monitor quality of packaging
RECALLS	Manage Recalls	482	Develop recall plan
RECALLS	Manage Recalls	483	Manage recall
RECALLS	Follow Recall Plan	484	Follow recall plan
RECORD MANAGEMENT	Manage Record Management	485	Establish record management policies and procedures
RECORD MANAGEMENT	Manage Record Management	486	Monitor organization's record management systems
RECORD MANAGEMENT	Manage Record Management	487	Monitor department's record management system
RECORD MANAGEMENT	Manage Record Management	488	Monitor production line's record management
RECORD MANAGEMENT	Manage Record Management	489	Monitor Food Safety and Quality Assurance (FSQA) record management systems
RECORD MANAGEMENT	Complete Record Management Tasks	490	Keep records up-to-date
RECORD MANAGEMENT	Complete Record Management Tasks	491	Complete forms
RESEARCH AND DEVELOPMENT	Develop New Products	492	Manage new product development projects
RESEARCH AND DEVELOPMENT	Develop New Products	493	Research consumer markets
RESEARCH AND DEVELOPMENT	Develop New Products	494	Develop new product concepts
RESEARCH AND DEVELOPMENT	Develop New Products	495	Develop bench-top prototypes
RESEARCH AND DEVELOPMENT	Conduct Experiments and Tests	496	Conduct shelf-life studies
RESEARCH AND DEVELOPMENT	Conduct Experiments and Tests	497	Conduct microbiological challenge tests
RESEARCH AND DEVELOPMENT	Conduct Experiments and Tests	498	Conduct nutritional analyses

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
RESEARCH AND DEVELOPMENT	Conduct Experiments and Tests	499	Experiment with new food additives
RESEARCH AND DEVELOPMENT	Conduct Experiments and Tests	500	Conduct sensory analyses
RESEARCH AND DEVELOPMENT	Conduct Trials	501	Complete plant scale-ups
RESEARCH AND DEVELOPMENT	Conduct Trials	502	Analyze trial results
RESEARCH AND DEVELOPMENT	Commercialize Products	503	Provide input for equipment scoping and processes
RESEARCH AND DEVELOPMENT	Commercialize Products	504	Provide input into nutritional labelling
RESEARCH AND DEVELOPMENT	Commercialize Products	505	Provide input into product packaging
RESEARCH AND DEVELOPMENT	Improve Existing Products and Processes	506	Develop value-added products and processes
RESEARCH AND DEVELOPMENT	Improve Existing Products and Processes	507	Provide input into innovative uses for excess raw materials and by-products
RESEARCH AND DEVELOPMENT	Improve Existing Products and Processes	508	Provide input into cost optimization
RESEARCH AND DEVELOPMENT	Improve Existing Products and Processes	509	Provide input into improving manufacturing processes
RESEARCH AND DEVELOPMENT	Improve Existing Products and Processes	510	Provide input into product development and improvement
RISK MANAGEMENT	Manage Risk	511	Analyze risks of domestic operations
RISK MANAGEMENT	Manage Risk	512	Analyze risks of international operations
RISK MANAGEMENT	Manage Risk	513	Develop risk management plans
RISK MANAGEMENT	Manage Risk	514	Implement risk management plan
RISK MANAGEMENT	Manage Risk	515	Monitor implementation of risk management plan
SALES AND CLIENT RELATIONS	Manage Sales and Client Relations	516	Develop sales plan
SALES AND CLIENT RELATIONS	Manage Sales and Client Relations	517	Monitor sales plan
SALES AND CLIENT RELATIONS	Maintain Client Relationships	518	Provide customer service
SALES AND CLIENT RELATIONS	Maintain Client Relationships	519	Handle customer concerns or complaints
SALES AND CLIENT RELATIONS	Sell Products and Services	520	Qualify customer
SALES AND CLIENT RELATIONS	Sell Products and Services	521	Conduct sales calls and presentations
SALES AND CLIENT RELATIONS	Sell Products and Services	522	Overcome customer objections
SALES AND CLIENT RELATIONS	Sell Products and Services	523	Develop quotes
SALES AND CLIENT RELATIONS	Sell Products and Services	524	Close sales
SALES AND CLIENT RELATIONS	Sell Products and Services	525	Process sales
SALES AND CLIENT RELATIONS	Sell Products and Services	526	Follow up on sales
SANITATION	Handle and Prepare Chemicals	527	Prepare cleaning chemicals
SANITATION	Handle and Prepare Chemicals	528	Prepare sanitizer
SANITATION	Handle and Prepare Chemicals	529	Prepare chemical concentrations
SANITATION	Handle and Prepare Chemicals	530	Handle chemicals
SANITATION	Handle and Prepare Chemicals	531	Store chemicals
SANITATION	Handle and Prepare Chemicals	532	Manage chemical accidents
SANITATION	Handle and Prepare Chemicals	533	Conduct chemical risk assessment
SANITATION	Handle and Prepare Chemicals	534	Implement control measures
SANITATION	Handle and Prepare Chemicals	535	Develop chemical safety program
SANITATION	Clean Food Processing Equipment and Tools	536	Prepare for cleaning
SANITATION	Clean Food Processing Equipment and Tools	537	Conduct daily cleaning for food processing equipment and tools
SANITATION	Clean Food Processing Equipment and Tools	538	Deep clean food processing equipment and tools
SANITATION	Clean Food Processing Equipment and Tools	539	Verify food processing equipment, tools and work surface cleanliness
SANITATION	Clean Food Processing Equipment and Tools	540	Clean food processing equipment and tools out of place
SANITATION	Clean Food Processing Equipment and Tools	541	Prepare value-added meat processing equipment for cleaning and sanitizing
SANITATION	Clean Food Processing Equipment and Tools	542	Prepare bakery processing equipment for cleaning and sanitization
SANITATION	Sanitize Food Processing Equipment and Tools	543	Prepare for daily sanitizing of food processing equipment and tools

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
SANITATION	Sanitize Food Processing Equipment and Tools	544	Perform daily sanitizing of food processing equipment and tools
SANITATION	Sanitize Food Processing Equipment and Tools	545	Prepare for detailed sanitizing
SANITATION	Sanitize Food Processing Equipment and Tools	546	Conduct detailed sanitizing of food processing equipment and tools
SANITATION	Sanitize Food Processing Equipment and Tools	547	Sanitize fish & seafood work stations
SANITATION	Oversee Facility Cleanliness	548	Develop facility cleaning processes
SANITATION	Oversee Facility Cleanliness	549	Verify cleaning process
SANITATION	Oversee Facility Cleanliness	550	Monitor facility cleaning processes
SANITATION	Oversee Facility Cleanliness	551	Monitor cleaning processes on production line
SANITATION	Oversee Facility Cleanliness	552	Evaluate facility cleaning processes
SANITATION	Clean Facility	553	Clean facility
SANITATION	Clean Facility	554	Operate cleaning machinery and equipment
SANITATION	Clean Facility	555	Maintain cleaning machinery and equipment
SANITATION	Sanitize Facility	556	Develop facility sanitizing procedures
SANITATION	Sanitize Facility	557	Sanitize facility
SANITATION	Sanitize Facility	558	Monitor facility sanitizing processes
SANITATION	Sanitize Facility	559	Monitor sanitizing processes on production line
SANITATION	Implement Environmental Monitoring Process	560	Develop facility environmental monitoring process
SANITATION	Implement Environmental Monitoring Process	561	Conduct organoleptic inspection
SANITATION	Implement Environmental Monitoring Process	562	Conduct ATP hygiene monitoring
SANITATION	Implement Environmental Monitoring Process	563	Conduct microbiological sampling
SANITATION	Clean Closed Systems/Clean-in-Place (CIP)	564	Prepare CIP system for cleaning
SANITATION	Clean Closed Systems/Clean-in-Place (CIP)	565	Monitor CIP system
SANITATION	Clean Immediate Work Environment	566	Clean immediate work environment
SEA CUCUMBER PROCESSING	Process Sea Cucumbers	567	Eviscerate sea cucumbers
SEA CUCUMBER PROCESSING	Process Sea Cucumbers	568	Cook in-process sea cucumbers
SEA CUCUMBER PROCESSING	Process Sea Cucumbers	569	Dry/dehydrate sea cucumbers
SEA CUCUMBER PROCESSING	Process Sea Cucumbers	570	Brine-freeze sea cucumbers
SEA CUCUMBER PROCESSING	Process Sea Cucumbers	571	Freeze sea cucumbers
SEA CUCUMBER PROCESSING	Process Sea Cucumbers	572	Grade whole, dried sea cucumbers
VALUE-ADDED MEAT PRODUCT FABRICATION	Prepare Raw Meat Material and Other Ingredients for Value-Added Meat Products	573	Thaw/temper frozen raw meat material
VALUE-ADDED MEAT PRODUCT FABRICATION	Prepare Raw Meat Material and Other Ingredients for Value-Added Meat Products	574	Grind/flake/chop meat or meat by-products for value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Prepare Raw Meat Material and Other Ingredients for Value-Added Meat Products	575	Prepare non-meat ingredients/meat by-products for value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Prepare Raw Meat Material and Other Ingredients for Value-Added Meat Products	576	Mix/blend raw meat material/meat by-products and non-meat ingredients
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	577	Brine/marinate value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	578	Coat value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	579	Stuff value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	580	Cure/ferment value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	581	Dry value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	582	Shape value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	583	Smoke value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	584	Cook value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	585	Chill/freeze value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Use Value-Added Meat Production Techniques	586	Slice/cube finished value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Produce Value-Added Meat Products	587	Prepare whole muscle value-added meat products
VALUE-ADDED MEAT PRODUCT FABRICATION	Produce Value-Added Meat Products	588	Prepare restructured value-added meat products

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VALUE-ADDED MEAT PRODUCT FABRICATION	Produce Value-Added Meat Products	589	Prepare ground meat value-added products
VALUE-ADDED MEAT PRODUCT FABRICATION	Produce Value-Added Meat Products	590	Prepare sausages
VALUE-ADDED MEAT PRODUCT FABRICATION	Produce Value-Added Meat Products	591	Prepare fine comminuted/emulsified value-added meat products
WASTE MANAGEMENT	Manage Recycling Activities	592	Develop facility-wide recycling program
WASTE MANAGEMENT	Manage Recycling Activities	593	Implement recyclable collection program
WASTE MANAGEMENT	Manage Recycling Activities	594	Manage recycling program
WASTE MANAGEMENT	Manage Recycling Activities	595	Oversee staff compliance with recycling program
WASTE MANAGEMENT	Comply with Recycling Program	596	Comply with recycling program
WASTE MANAGEMENT	Manage Facility Waste (Solid and Liquid)	597	Develop facility waste management program
WASTE MANAGEMENT	Manage Facility Waste (Solid and Liquid)	598	Monitor facility waste management activities
WASTE MANAGEMENT	Manage Facility Waste (Solid and Liquid)	599	Oversee staff compliance with facility waste management program
WASTE MANAGEMENT	Comply with Facility Waste Management Program	600	Comply with facility waste management program
WASTE MANAGEMENT	Comply with Facility Waste Management Program	601	Complete facility waste collection activities
WASTE MANAGEMENT	Comply with Facility Waste Management Program	602	Handle hazardous waste
WORKFORCE MANAGEMENT	Set Strategic Direction for Workforce	603	Develop HR Plan
WORKFORCE MANAGEMENT	Set Strategic Direction for Workforce	604	Develop succession plan
WORKFORCE MANAGEMENT	Set Strategic Direction for Workforce	605	Allocate Human Resources
WORKFORCE MANAGEMENT	Set Strategic Direction for Workforce	606	Develop compensation packages
WORKFORCE MANAGEMENT	Set Strategic Direction for Workforce	607	Monitor implementation of HR plan
WORKFORCE MANAGEMENT	Set Strategic Direction for Workforce	608	Manage Diversity in the Workplace
WORKFORCE MANAGEMENT	Hire Staff	609	Provide input for job descriptions
WORKFORCE MANAGEMENT	Hire Staff	610	Develop job descriptions
WORKFORCE MANAGEMENT	Hire Staff	611	Assist with staff recruitment
WORKFORCE MANAGEMENT	Hire Staff	612	Recruit staff
WORKFORCE MANAGEMENT	Hire Staff	613	Screen candidates
WORKFORCE MANAGEMENT	Hire Staff	614	Interview candidates
WORKFORCE MANAGEMENT	Hire Staff	615	Hire employees
WORKFORCE MANAGEMENT	Train Staff	616	Develop or revise employee resources
WORKFORCE MANAGEMENT	Train Staff	617	Provide orientation to new staff
WORKFORCE MANAGEMENT	Train Staff	618	Plan training
WORKFORCE MANAGEMENT	Train Staff	619	Conduct training
WORKFORCE MANAGEMENT	Train Staff	620	Conduct one-on-one training
WORKFORCE MANAGEMENT	Monitor Staff Performance	621	Build a respectful workplace
WORKFORCE MANAGEMENT	Monitor Staff Performance	622	Maintain positive work environment
WORKFORCE MANAGEMENT	Monitor Staff Performance	623	Motivate staff
WORKFORCE MANAGEMENT	Monitor Staff Performance	624	Supervise staff on modified work duties
WORKFORCE MANAGEMENT	Monitor Staff Performance	625	Schedule staff
WORKFORCE MANAGEMENT	Monitor Staff Performance	626	Conduct Performance Reviews
WORKFORCE MANAGEMENT	Monitor Staff Performance	627	Address Performance Issues
WORKFORCE MANAGEMENT	Monitor Staff Performance	628	Promote staff

Major Task/Skill/Competency Category (Alphabetically)	Task/Skill/Competency Sub-category	#	Tasks/Skills/Competency Names
WORKFORCE MANAGEMENT	Facilitate Staff Departures	629	Dismiss Staff
WORKFORCE MANAGEMENT	Facilitate Staff Departures	630	Lay off Staff
WORKFORCE MANAGEMENT	Facilitate Staff Departures	631	Process Resignations
WORKFORCE MANAGEMENT	Manage Within a Union Environment	632	Comply with collective agreement
WORKFORCE MANAGEMENT	Manage within a Union Environment	633	Respond to grievances
WORKFORCE MANAGEMENT	Manage within a Union Environment	634	Maintain professional relationship with union
WORKFORCE MANAGEMENT	Manage within a Union Environment	635	Participate in Collective Bargaining

APPENDIX C
METHODOLOGY USED TO DEVELOP NATIONAL OCCUPATIONAL STANDARDS

National occupational standards (NOS) are voluntary. They are developed with a national objective and require pan-Canadian validation and endorsement to enable the recognition of qualifications across Canada. Quality NOS developed with both a sectoral and pan-labour market objective enables the recognition of workers' knowledge and skills across the entire Canadian labour market and facilitates labour mobility across Canadian sectors. Identifying and recognizing transferable knowledge and skills that can be applied within a variety of sectors and/or positions within a sector is especially important to individuals who are changing careers or have little work-related experience. Labour mobility within Canada allows workers to be employed in different provinces and territories, resulting in more choices and opportunities for workers and a broader selection of candidates for employers. NOS not only facilities labour mobility within Canada, but also provide information that is essential to recognize foreign credentials effectively and to enable foreign-trained workers to enter the Canadian workforce[1].

A rigorous methodology involving research and stakeholder consultation is used to set the competencies. The first phase involved extensive research, including a review of hundreds of existing standards, norms, curricula, job descriptions, etc., from Canada and around the world, resulting in a detailed dictionary of competencies for food safety. The second phase involved extensive consultations with 160 stakeholders through a focus group, phone interviews, surveys, and editorial reiterations. The stakeholders consulted are subject matter experts, and highly experienced food safety professionals, representing a broad range of individuals working in food processing from across Canada.

Planning and establishing a stakeholder engagement strategy	Approached experienced practitioners with a wide representation of plant sizes and geographical location
Researching and analyzing documentation	Reviewed existing competency framework charts, training program outlines, research papers and websites
Benchmarking	Benchmarked against standards to foreign qualifications and occupational standards
Creating, developing, and validating the competency framework	Conducted face-to-face focus groups, phone interviews and follow-up communication to create the NOS
Conducting further consultation	Conducted a survey to determine the relevance, importance and frequency rating of each task included in the standard
Ratification of the standard by the National Advisory Committee	Conducted a final online validation national survey

[1] Former Alliance of Sector Councils (TASC), Setting the Standards, Accepted Principles and Practices for National Occupational Standards, Certification Programs, and Accreditation Programs, 2010

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