Food Manufacturing

ESSENTIAL SKILLS PROFILE

PRODUCTION SUPERVISOR
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Production Supervisor Definition

Production supervisors make sure the plant operates smoothly, safely and efficiently to produce products that meet the needs of customers and adhere to high quality standards. They are employed in all sectors of the food-processing industry in both large and small companies.

The Production Supervisor in food manufacturing essential skills profile was based on essential skills profile for Supervisors, Food, Beverage and Tobacco Processing (NOC 9213) developed by the Government of Canada department of Employment and Social Development Canada.

The most important Essential Skills for Production Supervisors are:
- Oral Communication.
- Thinking Skills (Decision Making)
- Thinking Skills (Job Task Planning and Organizing)

Keys to Understanding Essential Skills Profiles

The profiles are organized by essential skill. Each essential skill section contains the following key elements:

- **Example tasks**: a list of essential skills-related tasks. This list describes the different types of tasks workers may be expected to do for each essential skill in an occupation.

- **Complexity ratings**: the number found in brackets beside each example task. These estimated numbers range from Level 1 (basic) to Level 5 (advanced), depending on how difficult the task is. The complexity levels may vary based on the requirements of the workplace.

- **Essential skill function overviews**: describe the purpose and/or use of each essential skill (except for Thinking). This section, usually presented in a table format, is omitted from short versions of the profiles.

- **Impact of digital technology**: updated profiles include new information on the effect digital technology has on the essential skills-related tasks required in an occupation.
  - In long versions of the updated profiles, this information is found after the list of example tasks for each essential skill.
  - In short versions of the updated profiles, this information is summarized at the end of the profile in an "Impact of Digital Technology" summary.
The following icons are used to identify the 9 components of the Essential Skills Profiles:

<table>
<thead>
<tr>
<th>READING</th>
<th>DOCUMENT USE</th>
<th>WRITING</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMERACY</td>
<td>ORAL COMMUNICATION</td>
<td>THINKING SKILLS</td>
</tr>
<tr>
<td>DIGITAL TECHNOLOGY</td>
<td>WORKING WITH OTHERS</td>
<td>CONTINUOUS LEARNING</td>
</tr>
</tbody>
</table>

**Definitions & Complexity Levels**

**Reading**

*Definition*

Reading refers to the skills needed to understand and apply information found in sentences and paragraphs.

At work, people use reading skills to locate and use information from memos, emails, manuals, reports, proposals and other written material.

*Complexity Level*

The level of difficulty of reading tasks ranges between being able to read short texts to find a single piece of information (complexity Level 1), to being able to understand and use long and complicated texts, like contracts or reports (complexity Level 5).

The ability to read at a complexity Level 3 is essential for most jobs - even for those that do not require a college diploma, university degree or specialized training. For example, this level of reading is needed for workers to succeed in job-specific training and read safety-related information.
Document Use

**Definition**
Document use refers to the skills needed to find, enter and use letters, numbers, symbols and images in electronic and paper formats.

At work, people use document use skills to find and enter information in electronic and paper visual displays, such as forms, lists, tables, graphs, maps and drawings.

**Complexity Level**
The document use complexity scale ranges from Level 1 to Level 5 based on the number, type and structure of documents; how information is found and entered (and whether or not the information is modified in order to be used); and the worker’s thought process and their previous knowledge of the content.

In some cases, tasks that require document use skills may also require other essential skills. For example, reading skills might also be required for a document that includes a paragraph of text (e.g. on a label). In a similar way, writing skills might be needed when a document requires the entry of words, phrases, sentences and paragraphs.

Writing

**Definition**
Writing refers to the skills needed to compose handwritten or typed text to communicate information and ideas.

At work, people use writing skills to compose texts, such as notes, memos, bulletins, email messages, instructions, procedures and reports.

**Complexity Level**
The writing complexity scale is organized into themes, which explain the complexity requirements of writing tasks:
- length and purpose,
- style and structure, and
- content

Writing tasks may range from writing short and informal notes (complexity Level 1) to writing longer, technical documents based on many different sources of information and adapted to a specific audience (complexity Level 5).
**Numeracy**

**Definition**
Numeracy refers to the skills needed to make sense of and apply mathematical concepts and information.

At work, people use numeracy skills to tally costs, create budgets, calculate lengths and volumes, analyze data, estimate times and manage the other mathematical demands of different situations.

**Complexity Level**
The level of difficulty of a numeracy task is determined by the math task performed, as well as the knowledge needed to perform the task properly. There is a difference between a worker’s ability to work with numbers and their understanding of when they should use certain types of math. For example, a worker can take a number from a computer printout and put it in a report without knowing how it was calculated. Also, some numeracy tasks require workers to make sense of mathematical information found in text or media and not just simply perform mathematical operations.

Numeracy example tasks are assessed across four (estimation) to five (calculation) levels of difficulty and depend on many factors, such as:

- the number, type and difficulty of mathematical operations needed to find a solution to a problem;
- the amount of information available and the level of accuracy required; and,
- the consequence of making a mistake.

**Oral communication**

**Definition**
Oral communication refers to the skills needed to exchange thoughts and information with other people by speaking, listening and using non-verbal cues, such as body language.

At work, people use oral communication skills to talk to customers, discuss products with suppliers, explain work procedures to co-workers, participate in virtual sales meetings with clients, and other activities that involve verbal exchanges.

**Complexity Level**
The level of difficulty related to oral communication tasks is based on four factors:

- the range and complexity of oral communication required from giving basic instructions (Level 1) to carrying out complicated negotiations (Level 4);
- the range and complexity of information communicated from a familiar, simple topic (Level 1) to complex, highly detailed technical information (Level 4);
- the range and complexity of the communication context from communicating with one person at a time in an everyday situation (Level 1) to communicating with a new and challenging audience in an unfamiliar setting (Level 4); and,
- the risks involved with not being able to communicate properly from minor inefficiencies (Level 1) to the loss of life or serious injury (Level 4).
### Thinking Skills

**Definition**
Thinking refers to the skills needed to solve problems, make decisions, think critically, plan, remember details, and find information.

At work, people use thinking skills to do tasks, such as solving electronic equipment problems, assessing the safety of a jobsite, deciding who to hire, planning meetings, memorizing passwords, and finding the information needed to estimate the cost of a project.

**Complexity Level**
The four levels of complexity for various thinking-related activities are based on these factors:

- the steps involved in problem solving, from identifying a problem to finding and assessing a solution;
- what is involved in decision making, i.e. the consequence of making a mistake, the extent to which information is available, procedures are explained, similar examples exist and judgment is needed to make a decision;
- the criteria, assessment and effects of critical thinking processes;
- to what extent workers need to plan and organize their own tasks and the impact this might have on the total efficiency of a project; and
- the difficulty of finding, selecting, understanding and processing information.

### Digital Technology

**Definition**
Digital technology refers to the skills needed to understand and use digital systems, tools and applications, and to process digital information.

At work, people use digital technology skills to input, access, analyze, organize, create and communicate information and ideas using computers, software, point-of-sale equipment, email, podcasts, web applications, smart phones and other digital devices.

**Complexity Level**
Digital skills are currently being assessed against levels defined for computer use. As complexity levels are defined through digital skills research, both the methodology and the profiles will be updated as needed.
Working with Others

**Definition**
Working with others refers to the skills needed to interact with other people (one or more).

At work, people work with others in pairs and in small and large groups to coordinate tasks, share resources, plan, make decisions, negotiate, solve conflicts and complete other activities that involve teamwork.

**Complexity Level**
Complexity levels are not assigned to this essential skill.

Continuous Learning

**Definition**
Continuous learning refers to the skills needed to continually develop and improve one's skills and knowledge in order to work effectively and adapt to changes.

At work, people use continuous learning skills to identify and develop the knowledge and skills they need to perform well, build careers, prepare for and adapt to changes in processes, technology, regulations, employer demands, etc.

**Complexity Level**
Complexity levels are not assigned to this essential skill.

Additional Information

**Definition**
The additional information section provides a summary of information collected during interviews with workers. It may contain the following main sub-sections: working with others, continuous learning, digital skill requirements, physical aspects and attitudes.

Digital skills requirements describes the extent to which workers rely on specific types of digital skills to do their work. It may include both current and projected requirements.

Physical aspects explains the physical requirements of an occupation: the psychomotor (i.e. the link between mental activity and the physical movement of the body) and sensory aspects of a job. Physical attitudes summarizes answers to the question, "What attitudes should someone have to do this job well?"
PRODUCTION SUPERVISOR
1. Reading Text

The typical text reading tasks of Production Supervisors are at Complexity Level 1 to 3. Their most complex text reading tasks are at Complexity Level 4.

**Production Supervisors:**

- Read faxes and e-mail messages from customers asking about orders and making special requests. (1)
- Read brochures from companies that offer training seminars. (1)
- Read letters from suppliers and contractors to find out about new equipment or changes to products. (2)
- Read meeting minutes, e.g. supervisory meetings or safety council meetings, to determine topic points and action items relating to production. (2)
- Read product formulations to determine requirements for raw ingredients, machinery and personnel. (2)
- Read product recipes to determine types and amounts of required raw ingredients for each batch of product. (2)
- Read newsletters, trade magazines and journals to keep up-to-date with new materials, procedures and research. (3)
- May read material on Internet sites related to products and competitors to make sure their company is competitive. (3)
- Refer to equipment manuals to learn how to operate, adjust or repair equipment. (3)
- Read regulations to determine procedures such as HACCP protocols and CFIA regulations. (3)
- Read reports from government departments to keep up with studies and research being done and familiarize themselves with new regulations. (4)

<table>
<thead>
<tr>
<th>Reading Profile</th>
<th>Purpose for Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Text</strong></td>
<td>To scan for specific information/To locate information.</td>
</tr>
<tr>
<td>Forms</td>
<td>✓</td>
</tr>
<tr>
<td>Labels</td>
<td>✓</td>
</tr>
<tr>
<td>Notes, Letters, Memos</td>
<td>✓</td>
</tr>
<tr>
<td>Manuals, Specifications, Regulations</td>
<td>✓</td>
</tr>
<tr>
<td>Reports, Books, Journals</td>
<td>✓</td>
</tr>
</tbody>
</table>

FPHRC ES Profile – Production Supervisor
2. Document Use

The typical document use tasks of Production Supervisors are at Complexity Levels 1 to 3. Their most complex document use tasks are at Complexity Level 3.

**Production Supervisors:**

- May verify packing lists to see that orders are accurately filled. (1)
- Read lists of ingredients and recipes to check that the correct ingredients are used. (1)
- May consult supplier price lists to find costs of raw materials. (1)
- Read labels on raw materials to determine if they are compatible with the products they produce. (1)
- Scan lot codes and batch codes to verify accuracy. (1)
- Check material catalogues to locate quality raw materials. (2)
- Read customer orders to plan production schedules. (2)
- Read tables, such as pest control records or tables of product sales per item per month. (2)
- Read inventory forms to determine supply needs and amounts of product on hand to meet special orders. (2)
- May consult tables to confirm the volume of ingredients to be used for a different batch size. (2)
- May interpret graphs, such as a production graphs, for the purpose of continuous improvement. (2)
- Read operation manuals to verify specific procedures. (3)
- May read blueprints to plan renovations such as installing a new floor or changing the location of a door or sink. (3)
- May scan schematics to identify elements of equipment on their production lines. (3)

**Other Document Use Tasks**

**Production Supervisors:**

- Develop daily production schedules, either on their own or in collaboration with a production planner, to specify the resources and processes required for each shift.
- May create Standard Operating Procedures (SOPs).
- May draw floor plans when changing equipment layouts.
- May create forms such as 'clean-up protocol' checklists, 'parameters for equipment operation' tables, or 'equipment maintenance' forms.
Document Use Profile

*Production Supervisors:*

- Read signs, labels or lists.
- Complete forms by marking check boxes, recording numerical information or entering words, phrases, sentences or texts of a paragraph or more.
- Read completed forms containing check boxes, numerical entries, phrases, addresses, sentences or texts of a paragraph or more.
- Read tables, schedules or other table-like text.
- Create tables, schedules or other table-like text.
- Enter information on tables, schedules or other table-like text.
- Obtain specific information from graphs or charts.
- Interpret information on graphs or charts.
- Interpret schematics.
- Make sketches

3. Writing

The typical writing tasks of Production Supervisors are at Complexity Levels 1 to 3. Their most complex writing tasks are at Complexity Levels 3 and 4.

*Production Supervisors:*

- Write notes to themselves about irregularities in products or equipment operation. (1)
- Write entries of a paragraph or more on forms such as inspection reports. (1)
- Write memos to employees to notify them of changes in schedules, special tasks to be completed or to inform them of production errors. (1)
- Write daily journal or log entries to record production efficiency or describe specification changes. (2)
- Write records in journals of different procedures that have been tried such as using partly frozen raw material in baking, and the results. (2)
- Write letters to suppliers to request information about production equipment, materials or packaging. (2)
- Write reports. For example, they prepare daily production reports outlining production processes and outputs; they prepare incident reports to outline issues encountered on the line and corrective action taken; they prepare down-time reports when production is stopped due to mechanical issues. (2)
- May write product descriptions for promotional purposes. (3)
- Write letters to federal government departments to seek approval for label changes. (3)
- Write proposals to authorities presenting rationale or justification for plant expansions or renovations. (4)
### Writing Profile

<table>
<thead>
<tr>
<th>Purpose for Writing</th>
<th>To organize/to remember</th>
<th>To keep a record/to document</th>
<th>To inform/to request information</th>
<th>To persuade/to justify a request</th>
<th>To present an analysis or comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texts requiring less than one paragraph of new text</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texts rarely requiring more than one paragraph</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Longer texts</td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

### 4. Numeracy

The Numerical Calculation Rating Scale ranges from Level 1 (least complex) to Level 5 (most complex). The numeracy tasks of Production Supervisors involve:

- Scheduling or Budgeting and Accounting Math at Complexity Levels 1 to 2
- Measurement and Calculation Math at Complexity Level 1 to 2
- Data Analysis Math at Complexity Levels 2 and 3

**Production Supervisors:**

- Monitor inventories to ensure that products move to customers within the shelf life parameters. (Scheduling or Budgeting and Accounting Math) (1)
- Compare monthly sales, supply orders and payroll to business plans. (Scheduling or Budgeting and Accounting Math) (1)
- Prepare and adjust production schedules according to orders received. (Scheduling or Budgeting and Accounting Math) (2)
- Prepare daily work schedules and adapt based on absenteeism or unexpected changes in production schedules. (Scheduling or Budgeting and Accounting Math) (2)
- Weigh or measure products to ensure they meet product specifications, e.g. measure total weight of product and compare to parameters. (Measurement and Calculation Math) (1)
- Measure temperatures to ensure heating or cooling equipment are functioning properly. (Measurement and Calculation Math) (1)
- Calculate the amount of ingredients needed to change batch sizes. (Measurement and Calculation Math) (2)
- Calculate the cost of products according to yields and cost of raw materials. (Measurement and Calculation Math) (2)
- Interpret results from tests, such as bacteria counts, in comparison to food safety standards. (Data Analysis Math) (2)
* Compare results from different production runs to informs adjustments for optimum quality. (Data Analysis Math) (3)

**Numerical Estimation**

The Numerical Estimation Rating Scale ranges from Level 1 (least complex) to Level 4 (most complex). The numerical estimation tasks of Production Supervisors are at Complexity Levels 1 to 2.

**Production Supervisors:**

- May estimate how much time is required to complete a run to give clients possible delivery times. (1)
- May estimate recovery rates for finished product based on input of raw ingredients and required production processes. (2)
- May estimate product quantities required for peak periods such as holiday seasons. (2)

**Math Skills Profile**

a. **Mathematical Foundations Used**

<table>
<thead>
<tr>
<th>Production Supervisors:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number Concepts</strong></td>
</tr>
<tr>
<td>Whole Numbers</td>
</tr>
<tr>
<td>read and write, count, round off, add or subtract, multiply or divide whole numbers. For example, add quantities to see how much product is needed to fill an order, reading code numbers, reading weights of products, determining the number of man hours lost on production due to a down-time by multiplying the amount of down time (e.g. 1 hour) by the number of workers affected (e.g. 8) = 8 man hours.</td>
</tr>
<tr>
<td>Integers</td>
</tr>
<tr>
<td>read and write, add or subtract, multiply or divide integers. For example, calculating if inventory of raw materials will be in negative supply for a large order, reading positive or negative temperatures.</td>
</tr>
<tr>
<td>Rational Numbers Fractions</td>
</tr>
<tr>
<td>read and write, add or subtract fractions, multiply or divide by a fraction, multiply or divide fractions. For example, increasing or decreasing a batch size by a fraction.</td>
</tr>
<tr>
<td>Rational Numbers Decimals</td>
</tr>
<tr>
<td>read and write, round off, add or subtract decimals, multiply or divide by a decimal, multiply or divide decimals. For example, adding the dollar cost of supplies.</td>
</tr>
<tr>
<td>Rational Numbers Percent</td>
</tr>
<tr>
<td>read and write percents, calculate the percent one number is of another, calculate a percent of a number. For example, adjusting the moisture content of a product to the required percentage, calculating labour variances, e.g. 3%+</td>
</tr>
<tr>
<td>Equivalent Rational Numbers</td>
</tr>
<tr>
<td>Convert between fractions and decimals or percentages, convert between decimals and percentages. For example, converting fractions to decimals for ease of multiplication.</td>
</tr>
<tr>
<td><strong>Patterns and Relations</strong></td>
</tr>
<tr>
<td>Equations and Formulae</td>
</tr>
<tr>
<td>use formulae by inserting quantities for variables and solving. For example, finding the expected yield from a raw product by using a formula.</td>
</tr>
<tr>
<td>Use of Rate, Ratio and Proportion</td>
</tr>
<tr>
<td>use a rate showing comparison between two quantities with different units, use a ratio showing comparison between two quantities with the same units, use a proportion showing comparison between two ratios or rates in order to solve problems. For example, adding a 'seed' ingredient to a batch in the right amount to produce an acceptable product; identifying the production pace, e.g. X strokes/minute</td>
</tr>
<tr>
<td><strong>Shape and Spatial Sense</strong></td>
</tr>
<tr>
<td>Measurement Conversions</td>
</tr>
<tr>
<td>perform measurement conversions. For example, converting weights on labels from metric to imperial measure for American customers.</td>
</tr>
<tr>
<td>Areas, Perimeters, Volumes</td>
</tr>
<tr>
<td>calculate areas, calculate perimeters, calculate volumes. For example, calculating the size of container needed for a batch of product.</td>
</tr>
<tr>
<td><strong>Statistics and Probability</strong></td>
</tr>
<tr>
<td>Summary Calculations</td>
</tr>
<tr>
<td>calculate averages, calculate rates other than percentage, calculate proportions or ratios. For example, comparing sales over a period of time to determine profit.</td>
</tr>
<tr>
<td>Statistics and Probability</td>
</tr>
<tr>
<td>use statistics and probability. For example, working out baking time needed when a product is thawed for 20 minutes and predicting baking times for different stages of thawing.</td>
</tr>
</tbody>
</table>
b. How Calculations Are Performed

Production Supervisors make calculations:

- In their head.
- Using a pen and paper.
- Using a calculator.
- Using a computer.

c. Measurement Instruments Used

Production Supervisors measure:

- Time - For example, using a clock or watch.
- Weight or mass - For example, using digital and analog scales.
- Liquid volume - For example, using a graduated cylinder, calibrated vat or pipe-valve volume monitor.
- Temperature - For example, using a temperature probe, digital thermometer or infrared gun.
- Pressure - For example, using a pressure gauge.
- Flow rates - For example, using a digital or ultrasonic flow meter.
- Density - For example, using a spectral refractometer.

They use:

- The metric measurement system.
- The imperial measurement system.

5. Oral Communication

The typical oral communication tasks of Production Supervisors are at Complexity Levels 1 to 3. Their most complex oral communication tasks are at Complexity Level 3.

Production Supervisors:

- May discuss orders and pricing with suppliers. (1)
- May speak with distributors to promote or introduce new products. (2)
- Give instructions to workers about production changes and problems; brief workers about a new products; provide worker feedback. (2)
• Instruct new employees about food safety, Standard Operating Procedures (SOPs), Good Manufacturing Practices (GMPs) and company policies and procedures. (2)

• May communicate with production schedulers/planners on a weekly basis to determine numbers of required workers for upcoming shifts based on production plans. (2)

• Speak with plant/operations managers to discuss disciplinary issues as they arise. (2)

• Participate in meetings, such as production, supervisory or safety meetings, to address concerns, provide updates and answer questions related to production. (2)

• Suggest improvements and discuss changes in work procedures with plant/operations managers. (3)

• May speak to colleagues in other companies about products used and changes in food safety policies. (3)

• May deal with suppliers over conflicts. For example, they may explain to suppliers why raw products just received are unacceptable and how the shipment differs from previous purchases. (3)

• Communicate with Canadian Food Inspection Agency (CFIA) inspectors during routine audits to verify and illustrate compliance with regulations and requirements. (3)

**Modes of Communication Used**

**Production Supervisors communicate:**
- In person.
- Using the telephone.
- Using a two-way radio or other such means.

**Environmental Factors Impacting Communication**
Production Supervisors sometimes must communicate in areas where noisy equipment is operating. Occasionally they speak with workers wearing face and/or ear protection. This may interfere with the clarity of communication.

**Oral Communication Profile**

<table>
<thead>
<tr>
<th>Purpose for Oral Communication</th>
<th>To provide/ receive information, explanation, direction</th>
<th>To seek, obtain information</th>
<th>To co-ordinate work with that of others</th>
<th>To reassure, comfort</th>
<th>To discuss (exchange information, opinions)</th>
<th>To persuade</th>
<th>To instruct, install understanding, knowledge</th>
<th>To negotiate, resolve conflict</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaking (little or no interaction)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interact with co-workers</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interact with those you supervise or direct</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interact with supervisor/</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
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</tr>
</tbody>
</table>

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6. Thinking Skills

6.1 Problem Solving:

Involves problems that require solutions; most problems concern mechanical challenges, people or situations.

The typical problem solving tasks of Production Supervisors are at Complexity Levels 1 to 3. Their most complex problem solving tasks are at Complexity Level 4.

Production Supervisors:

- Encounter problems meeting production deadlines because an automated process fails during a batch. They may finish the batch manually. (1)
- Receive a request for a product that isn't currently available. They look at the raw products on hand and determine if they can produce what has been requested. (2)
- Encounter transportation issues. For example, when located in remote locations, they may experience challenges in sourcing transportation services for both the supply of ingredients and materials and delivery of finished products. To ensure timely receipt and delivery of shipments, they often have to make several calls to various transportation companies to negotiate logistics and rates for transportation. (2)
- Encounter personnel shortages. For example, they find that a number of workers have not showed up for their shifts causing a shortage on the production lines. They consider ways to rotate and re-assign the workers present, determine the need to call in additional workers and may go on the line themselves to fill absences. (2)
- Discover a shortage of materials on the production line. For example, while monitoring production, they may notice that there will be a shortage of packaging materials required to finish the order. They speak with the production planner to discuss how to mitigate the issue, e.g. arrange for more
materials to be brought to the line, and how long the line can remain running with the materials that are left. (2)

- Find that a machine is not producing a product to meet specifications. They observe and analyse, then make adjustments to the equipment or to the product mix so they can produce a quality product. (3)
- Encounter difficulties in an assembly line process with containers bunching and collapsing and the product consequently spilling. They adjust the machine or check with suppliers to find a sturdier container. (3)
- Find that a new machine part is not compatible with existing equipment. They call for technical support and attempt to make appropriate adjustments so that the equipment will operate properly. (3)
- Find out that there has been a recall of a raw ingredient used in their product. They immediately trace the raw ingredient in their inventory database to identify the lot code, where the product was used, how many units were affected and where the units are currently housed (e.g. in the warehouse or shipped to customers). They then arrange for the affected products to be pulled and disposed of according to the recall. (4)
- Receive a complaint from a customer that a product has spoiled before its expiry date. They will replace the product and investigate to find whether the problem occurred at the production point, during transportation or at the retail site because of improper storage. (4)

6.2 Decision Making:

Refers to making a choice among options.

The typical decision making tasks of Production Supervisors are at Complexity Levels 1 to 3. Their most complex decision making tasks are at Complexity Level 3.

Production Supervisors:

- Decide when to order raw materials and when to bring in additional staff to keep production flowing. (1)
- Decide how and when to cycle workers for breaks to ensure production levels remain steady. (2)
- Decide whether to make a policy change regarding the amount of time spent on a part of a production process. (2)
- Decide to change the sequencing of production to improve efficiency by reducing the number of individual clean-up times. (2)
- Decide when and how to discipline employees who are breaking policies/rules. (3)
- Decide whether to increase production or lay off staff based on the percentage of labour costs. (3)
6.3 Critical Thinking:
Refers to the process of evaluating ideas or information, using a rational, logical thought process, and referring to objective criteria, to reach a rational judgment about value, or to identify strengths and weaknesses.

The Critical Thinking Complexity Rating Scale ranges from Level 1 (least complex) to Level 4 (most complex). The typical critical thinking tasks of Production Supervisors are at Complexity Levels 2 to 3. Their most complex critical thinking tasks are at Complexity Level 3.

Production Supervisors:
- Assess product quality. For example, they may conduct blind checks or random sampling of products throughout various stages of the production cycle to verify various aspects of product quality (e.g. size, texture, colour, packaging, labelling, etc.). If deficits are noted, they will take corrective action to ensure quality standards are met. (2)
- Assess preparedness for production start-up. For example, prior to the first shift of the day, they evaluate the sanitation of the equipment, verify pre-operational inspections and ensure the availability of raw materials required for production and materials required for packaging. They evaluate the results of their inspections to determine if the line can start-up as planned. If issues are discovered, they collaborate with the required personnel, such as maintenance, sanitation or warehouse operations, to remedy any issues for a timely start-up. (2)
- Evaluate production for continuous improvement. For example, they analyze all aspects of product production, including materials, line configuration, processes, equipment, packaging and personnel employed to identify areas where potential changes could be made to enhance the overall quality of the product and the cost-effectiveness and efficiency of production. They may collaborate with managers and supervisors from various departments to determine opportunities for continuous improvement. (3

6.4 Job Task Planning and Organizing:
Refers to the extent to which Production Supervisors plan and organize their own tasks.

The Job Task Planning and Organizing Rating Scale ranges from Level 1 (least complex) to Level 4 (most complex). Production Supervisors plan and organize their job tasks at Complexity Level 3.

Description
Production Supervisors are responsible for quality, efficiency, cost effectiveness and the smooth and safe operation of the plant. They prepare the daily schedule of production so that they fill customer’s orders with minimum wastage. They ensure that they have the necessary supplies, raw materials and workers available so that the plant runs as efficiently as possible. They ensure that employees have the training and resources to meet all requirements for safety, quality and production. They adjust the production schedule to accommodate special situations and communicate changes in routine to the front-line workers.

Production Supervisors deal with emerging problems, such as machinery breakdowns, to maintain continuous production. They ensure that their production method meets regulations and their product is of satisfactory quality for their customers.
6.5 Significant Use of Memory

*Production Supervisors:*

- Remember what a previously purchased raw product was like in quality, colour, size and/or shape to compare it with newly received raw product.
- Remember when regular clients last ordered so they can anticipate when their orders will come in again. Remember how particular customers like their order filled.
- Remember information about suppliers such as which supplier is slow in responding to requests and anticipate how long it will take to fill the order.

6.6 Finding Information

Production supervisor’s tasks that involve finding information are at Complexity Levels 2 to 3.

*Production Supervisors may:*

- get information from a specialist, such as a chemist, about environmental standards for waste management or a food scientist to find out how to improve a product. (2)
- look up information in a manual. For example, find out about company policies or sanitizing procedures. (2)
- find information about new production methods in magazines or books. (3)

7. Working with Others

The Working with Others Complexity Rating Scale ranges from Level 1 (least complex) to Level 4 (most complex). Production Supervisors work with others at Complexity Level 4.

*Description:*

Production Supervisors must work with many different people. They plan the tasks of the production staff and often are personally involved in the production process. They provide orientation for new employees and encourage employee participation in the company’s success. They share information with the owners and respond to their requests. Production Supervisors also deal with suppliers to secure raw materials and other necessary supplies to ensure a quality product. They interact with customers to identify concerns, needs and desires. They participate in discussions with inspectors and regulatory bodies to provide a safe, acceptable product.

*Participation in Supervisory or Leadership Activities*

*Production Supervisors:*

- Participate in formal discussions about work processes or product improvement.
- Have opportunities to make suggestions on improving work processes.
- Monitor the work performance of others.
Inform other workers or demonstrate to them how tasks are performed.
Orient new employees.
Make hiring decisions.
Select contractors and suppliers.
Assign routine tasks to other workers.
Assign new or unusual tasks to other workers.
Identify training that is required by, or would be useful for, other workers.
Deal with other workers’ grievances or complaints.

8. Digital Technology

The Digital Technology Rating Scale ranges from Level 1 (least complex) to Level 5 (most complex). The Digital Technology tasks of Production Supervisors are at Complexity Levels 1 and 2.

**Production Supervisors:**

- Use word processing software. For example, they write letters to suppliers requesting information. (1)
- Use spreadsheets. For example, they may use Excel to fill in details to adjust recipes for different amounts. (2)
- Use automated equipment. For example, they use equipment that requires them to enter information on a programmable logic controller (PLC). They may have to change the set-up for different operations. (2)
- Use communications software. For example, they receive and respond to e-mail messages. (2)
- Use manufacturing software. For example, they monitor performance throughout their shifts using Daily Manufacturing Systems (DMS).
- Use business management software. For example, they input data (e.g. inventory, production numbers, etc.) into an Enterprise Resource Planning (ERP) application.
- Use the Internet. For example, they may source information about new materials and equipment on through Internet searching

9. Continuous Learning

The Continuous Learning Complexity Rating Scale ranges from Level 1 (least complex) to Level 4 (most complex). Industrial Meat Cutters perform Continuous Learning tasks at Level 1.

**Description:**

The Continuous Learning Complexity Rating Scale ranges from Level 1 (least complex) to Level 4 (most complex). Production Supervisors perform Continuous Learning tasks at Level 2.
Description
Production supervisors learn on the job through trial and error. They also learn from interaction with their superiors, colleagues, suppliers and other professionals in their field. They learn from reading information in magazines and from professional organizations. A trainer may come to the workplace to provide specialized training on new equipment or new processes. They attend training seminars such as HACCP training or Food Safe. They may take evening or weekend courses that relate to their job, such as supervision or human relations training.

How the Learning Occurs

Learning may be acquired:
- As part of regular work activity
- From co-workers
- Through training offered in the workplace
- Through reading or other forms of self-study:
  - at work
  - using materials available through work
  - using materials obtained through a professional association
  - using materials obtained on worker’s own initiative
- Through off-site training:
  - during working hours at no cost to the worker
Other Information

In addition to collecting information for this Essential Skills Profile, our interviews with job incumbents also asked about the following topics.

I. Physical Aspects

Production Supervisors spend their days on their feet, walking throughout their facilities. They may have to lift and carry cases or cartons of materials. They must have upper limb co-ordination to demonstrate processes to their lead hands and labourers and to manipulate food processing equipment. They need to have moderate strength for lifting and carrying materials and must utilize safe lifting techniques. Production Supervisors rely on their senses to make decisions regarding the quality of raw materials and final products. They use their eyes to judge appearance for colour, size and irregularities. They use their ears to listen to machinery. They may use their sense of taste to assess flavour, texture or tenderness of samples of their finished products. They use their sense of smell to judge wholesomeness, freshness and product appeal.

II. Attitudes

Production Supervisors should have energy, be flexible and be willing to work long hours. They should have good interpersonal skills and be open to change and able to accept new ideas. They should recognize the times when they can be flexible and when they must follow rules. Production Supervisors should have analytical skills that help ensure accuracy and efficiency.

III. Future Trends Affecting Essential Skills

In the future, Production Supervisors will face an increase in paperwork as more companies in the food processing industry implement food safety programs, such as HACCP and ISO systems, BRC and SQF that rely on the documentation of processes. As more automated equipment is introduced to the workplace, Production Supervisors may need to improve their reading skills in order to handle the technical documents involved. Additional computerized equipment will call for increased digital technology skills as well. Production Supervisors may need to enhance their supervisory skills so that they can ensure their employees are trained to deal with changing work roles and increased demands for reading, digital technology and oral communication skills.
Other Essential Skills Profiles:

- Front Line Worker
- Import/Export Clerk
- Industrial Meat Cutter
- Production Lead Hand
- Material Handler
- Millwright
- Quality Control Manager
- Process Control & Machine Operator
- Food Science Technologist
- Production Supervisor
- Shipper/Receiver
- Sanitation
- HACCP

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