

MANUFACTURING IN THE
**MEAT AND SEAFOOD
PROCESSING INDUSTRIES**



A guide on how to use this Industry Pack

Resource for teachers and students

This industry pack is a resource designed to support the Manufacturing Careers Short Course. It connects classroom lesson plans, assessment tasks and the Manufacturing Matters website: manufacturingmatters.com.au.

COVER PAGE

Identifies the main manufacturing industry explored in this pack. Each industry pack is assigned an alphanumeric code, such as M4, to assist in identifying the industry pathway pack in various printed and digital outputs. There are 14 pathways in total.

» Use to identify workplaces or industries of interest for Assessment 1.

PAGE 1

Provides an overview of the specific manufacturing industry. It briefly explains where the industry operates and provides a basic understanding of relevant industry subject matter. **Supports Lesson 1 & 3.**

» Use to identify key interests or targeted questions for Assessment 1.

PAGE 2

Features images and descriptions of the manufacturing industry. These examples support further independent research by providing clear visual references for inspiration. **Supports Lesson 1 & 3.**

» Use to direct independent research to prepare targeted questions for Assessment 1.

PAGE 3

A career story offers real-life insight into an individual working in the manufacturing industry. It highlights variability in career pathways and offers real-world context of roles and progression within the sector. **Supports Lesson 3.**

» Use for Assessment 1 & Assessment 2 to understand pathways and core skills, attributes and knowledge.

PAGE 4

Includes:

- A map of Queensland to prompt a guided Google Maps research activity into where manufacturing industries are located.
- Industry specific search strings to assist further independent research into the industry.
- Links to job search platforms to research employment opportunities in the industry in Queensland.

Supports Lessons 8 to 13 & 16.

» Use for Assessment 1 & Assessment 2 to identify local industries and support independent research into job skills, attributes and knowledge gathering search terms.

PAGE 5

Provides an overview of educational training pathways and connects to the Career Bullseye highlighting roles at various Levels on the following page. **Supports Lessons 16 & 17.**

» Use for Assessment 2 to understand pathways into specific roles.

PAGE 6

An interactive Career Bullseye indicates roles within the industry at various Level (1 – 4) and allows for quick cross-industry comparisons on flexible career pathways. **Supports Lessons 1 & 3.**

» Use for Assessment 2 to understand pathways into specific roles and cross-industry relevance.

PAGE 7

Focuses on the first career pathway theme: **“Leading Teams”**.

Highlights the skills, qualities and attributes required for leadership roles and provides a list of examples to support further independent research. **Support Lessons 11, 18 & 19.**

Note: More detailed job descriptions are available on the Manufacturing Matters website. These may be made available as printed copies also.

Note: Additional videos are available to support this section exploring select “Leadership” and “On the Tools” occupations.

» Use for Assessment 2 to identify skills, attribute, knowledge and/or experience as pathways into specific roles in interested manufacturing industries.

PAGE 8

Focuses on the second career pathway theme: **“On the Tools”**.

Highlights the skills, qualities and attributes required for hands-on roles and provides a list of examples to support further independent research. **Support Lessons 2, 6, 11.**

Note: More detailed job descriptions are available on the Manufacturing Matters website. These may be made available as printed copies also.

Note: Additional videos are available to support this section exploring select “Leadership” and “On the Tools” occupations.

» Use for Assessment 2 to identify skills, attribute, knowledge and/or experience as pathways into specific roles in interested manufacturing industries.

PAGE 9

Provides an overview of the Future of the Industry and how technology is changing it. The section highlights skills needed for the future and growing trends in the industry. **Supports Lessons 12 & 13.**

» Use to identify targeted questions for Assessment 1 and for Assessment 2 for planning careers pathways and future skills, attributes and knowledge.

PAGE 10

Includes helpful online resources for further exploration of manufacturing industries. A matrix is provided that identifies all 14 core manufacturing industry pathways to discover!

» Use for Assessment 1 & Assessment 2 to expand independent research into pathways, core skills, attributes, and knowledge.

Understanding the Meat and Seafood Processing Industry in Queensland

The Meat and Seafood Processing industry in Queensland represents a cornerstone of Australia's food manufacturing sector and export capabilities. This sector combines traditional processing methods with advanced food technology to serve both domestic and international markets.

MEAT PROCESSING IN QUEENSLAND

Queensland's meat processing sector integrates traditional butchery with modern production technologies. In the red meat sector, processors handle a comprehensive range of products including beef, lamb, and goat meat. Many facilities specialise in specific cuts and grades, with particular emphasis on premium export products. Value-added processing has grown significantly, reflecting changing consumer preferences and market demands.

The poultry processing sector serves diverse market segments including retail chains, food service providers, and export markets. Queensland processors have developed particular expertise in producing products that meet halal and other religious certification requirements. This includes considerations for traceability and strict adherence to international food safety standards.

SEAFOOD PROCESSING IN QUEENSLAND

The seafood processing sector encompasses a broad range of specialised production activities. Wild-catch processing forms a substantial segment, with processors handling species such as prawns, reef fish, and mud crabs suited to Queensland's tropical waters. Many of these processors have developed niche markets by focusing on premium products for both domestic and export markets.

Aquaculture processing includes farmed barramundi, prawns, and other species. These subsectors often combine traditional processing techniques with advanced technology, particularly in areas such as quick-freezing and packaging. Queensland's seafood processing industry has evolved to incorporate sophisticated cold chain management while maintaining traditional processing capabilities.

Processing Support Industries

The industry is supported by a network of specialised facilities including cold storage operations, packaging manufacturers, and transportation services. These support industries are crucial to the sector's success, providing essential services and materials. Equipment manufacturers and maintenance providers form an

integral part of the supply chain, often developing custom solutions for specific processing requirements.

Advanced Processing Technologies

Contemporary meat and seafood processing in Queensland relies heavily on advanced technologies. Automated cutting systems and sophisticated trace-back technology are now standard in most facilities. These technologies enable precise processing methods while maintaining food safety standards. Quality assurance systems and temperature monitoring procedures have been developed to meet international standards while addressing local market needs.

Skills and Workforce

The industry depends on a highly skilled workforce including meat scientists, quality assurance specialists, butchers, and seafood processors. Production supervisors and food safety specialists play crucial roles in maintaining quality and compliance. The sector actively collaborates with training organisations to develop and maintain these essential skills.

Processing Locations

Processing facilities are strategically positioned throughout Queensland, with significant meat processing centres in Rockhampton, Townsville, and Brisbane. The coastal regions from Cairns to the Gold Coast have developed specialised seafood processing capabilities, often focused on particular species or processing techniques.

Sustainable Practices

Sustainability has become increasingly important in the sector. Processors are implementing sustainable waste management practices, energy-efficient processes, and water conservation programs. Advanced rendering and by-product processing systems are becoming standard, reflecting both environmental concerns and economic efficiency requirements.

The industry provides significant employment opportunities and contributes substantially to Queensland's export earnings while supporting related sectors such as agriculture, aquaculture, and transportation industries. This processing network ranges from large-scale meat processors to specialised seafood operations, creating a robust and dynamic industry sector.



Livestock Handler caring for animals by maintaining clean and safe holding facilities.



Production line for cutting large quantities of meat.



Storeperson using a barcode scanner to check goods in a cold room.



Processing Supervisor leading a team and managing daily production in a seafood processing facility.



Small goods manufacturing, salami packing line.



Microbiologist testing food quality.

Images in this document have been supplied by Manufacturing Skills Queensland and industry partners. Additional images have been sourced through Adobe Stock or generated using Adobe and Google AI software. Design layout by Liveworm, Queensland College of Art and Design, Griffith University.

Career Stories

Innovation and Communications Manager

As Innovation and Communications Manager in the meat processing industry, I work within a sector focused on domestic meat processing. Our core business involves the processing of natural processing products for either retail or food service production. Our industry is undergoing significant technological changes, with innovations being driven by both overseas and domestic developments. Key areas of focus include animal welfare, meat safety, production, waste management, energy and water resources, and refrigeration.

Our industry demonstrates strong diversity across gender, ethnic, and social backgrounds. We're committed to sustainable development goals and are working towards net-zero emissions targets. Students interact with our products through their daily diet, as our products are consumed at nearly every meal occasion.

My day-to-day role is very diverse, centred on providing healthy options that feed the community. I came to this position with a background in marketing and sales leadership roles, having limited prior knowledge of manufacturing. What attracted me to this industry was the opportunity to continue working in a sector that offers huge growth potential for all employees.

I'm still growing in my knowledge of meat processing and consider myself a novice in many aspects. The most valuable industry-specific knowledge I've gained relates to understanding the value of healthy food options for the community and seeing how the whole paddock-to-plate supply chain comes together. In my role, I've developed key skills in leadership, effective communication, and adaptability/flexibility.

The most challenging aspect of my position is managing the influence of climatic conditions on the process. However, seeing people succeed makes it all worthwhile.

For students interested in this industry, I recommend several subject areas. In general studies, accounting, agricultural science, design, digital solutions, earth and environmental science, engineering, and food and nutrition are particularly beneficial. For applied subjects, agricultural practices, building and construction skills, business studies, and industrial technology skills are valuable.

My advice to Year 10 students considering a career in manufacturing is simple: "Please consider all rewarding opportunities."

"Our industry demonstrates strong diversity across gender, ethnic, and social backgrounds."



Industry Map



FINDING INDUSTRY NEAR YOU

Want to see what Industry is around you? Here's how to do it on Google Maps!

Start by going to:

maps.google.com

Quick tip: Sign in if you want to save places for later!

Begin finding Pathways to Industry by typing what you're looking for using the knowledge you have, and include where you want to find it, for example:

"livestock processing facility QLD"

For this specific industry here are some terms to try:

- Industrial meat processing
- Abattoir
- Animal processing
- Livestock processing
- Meat packing facility
- Industrial seafood processing
- Seafood export processing

Add "industrial" or "commercial" to filter out retail locations

Include terms like "facility" or "plant" to find actual processing sites

Use "processor" rather than "shop" to find industrial operations

Try "manufacturer" to find value-added processing facilities

Some general search tips:

- Always include both "QLD" and "Queensland" in separate searches
- Add your postcode or "near me" to find stuff nearby
- Moving around the map? Click "search this area" to find new places
- Want to see how big a place is? Switch to Satellite View!
- Use Street View to get a closer look
- Found something interesting? Save it to your lists

Don't forget to check regular Google Search too! Sometimes you'll find different results there.

EXTENDING YOUR INDUSTRY KNOWLEDGE ONLINE

Here are some useful web search queries to find out more about this industry:

- automated meat processing systems
- advanced cutting technologies
- preservation method innovations
- cold chain monitoring systems
- pathogen detection technology
- ultrasonic meat tenderizing
- high-pressure processing
- automated grading systems
- traceability technologies
- advanced packaging methods

EXPLORING INDUSTRY PATHWAYS ONLINE

Search for manufacturing jobs in Queensland using platforms like Seek, Indeed, and LinkedIn. Filter results by location and experience level to find opportunities ranging from production line work to engineering roles. Use specific keywords like "advanced manufacturing careers" to discover industry trends and requirements.

seek.com.au

au.indeed.com

linkedin.com

Industry Pathways

In Queensland, an industry training pathway blends secondary school education with hands-on vocational training, allowing students to gain practical skills and qualifications while completing their high school certificate.

These pathways often involve partnerships between schools, TAFEs (Technical and Further Education), and industry, providing students with apprenticeships, traineeships, or work experience in their chosen field.

This combination of classroom learning, and real-world experience gives students a head start in their careers and helps them transition smoothly into the workforce or further tertiary education.

What does an industry training pathway look like?

The four education and training levels serve as a general guide and represent the most common educational and/or entry-level requirements for these roles.



LEVEL 1

Typically requires skills equivalent to the completion of Year 10, a Senior Secondary Certificate of Education, or a Certificate I or II. Australian Apprenticeships may be available at this level.



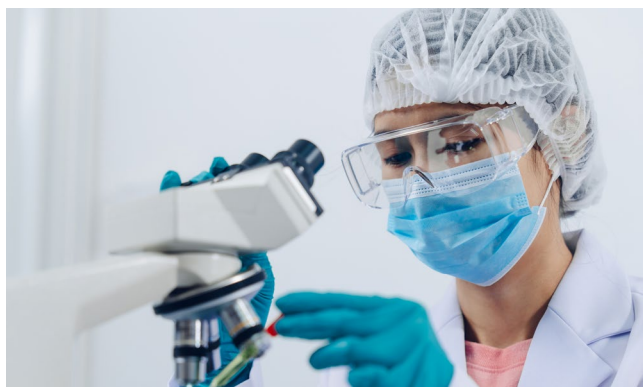
LEVEL 2

Typically requires skills equivalent to a Certificate III or IV, or at least three years of relevant experience. Australian Apprenticeships may also be available at this level.



LEVEL 3

Typically demands a level of expertise equivalent to a Diploma or Advanced Diploma, often gained through TAFEs or Registered Training Organisations. Some universities also offer programs at this level.



LEVEL 4

Typically requires qualifications equivalent to a Bachelor's Degree or higher. This level of education is usually pursued at a university.



CORE INDUSTRIES

Aerospace and Defence
Chemicals, Hydrocarbons and Refining
Food and Beverage
Furniture and Other Products
Meat and Seafood Processing

General Manufacturing and Engineering
Pharmaceutical and Medical Technology
Polymers, Plastic and Rubber
Printing and Graphic Arts

Pulp, Paper and Packaging
Renewables
Textiles, Clothing and Footwear
Timber and Wood
Transport Equipment and Machinery

SUPPORTING INDUSTRIES

Laboratory Operations
Process Plant Operations
Sustainable Operations

For further information, visit:

manufacturingmatters.com.au/careers

Industry Pathways - Leading Teams



Leading a team is about more than just managing tasks; it's about inspiring, motivating, and guiding a group of individuals towards a shared goal. A good team leader fosters a collaborative and supportive environment where everyone feels valued and empowered to contribute their best.

ROLE OF A TEAM LEADER.

- **Setting a Vision:** Clearly define goals and objectives, and communicate them effectively to the team.
- **Providing Direction:** Guide the team's efforts, ensuring everyone understands their roles and responsibilities.
- **Motivating and Inspiring:** Encourage and support team members, recognising their achievements and fostering a positive work environment.
- **Facilitating Collaboration:** Promote teamwork, open communication, and constructive conflict resolution.
- **Delegating Effectively:** Assign tasks based on individual strengths and skills, empowering team members to take ownership.
- **Monitoring Progress:** Track the team's performance, providing feedback and making adjustments as needed.
- **Developing Individuals:** Support the growth and development of team members through mentoring, coaching, and training opportunities.

QUALITIES AND ATTRIBUTES OF A GOOD TEAM LEADER.

- **Strong Communication Skills:** Clearly and effectively convey information, actively listen to team members, and provide constructive feedback.
- **Integrity and Trustworthiness:** Act with honesty and ethical principles, building trust and respect among team members.

- **Emotional Intelligence:** Understand and manage their own emotions and those of others, fostering empathy and positive relationships.
- **Decisiveness:** Make informed and timely decisions, even in challenging situations.
- **Accountability:** Take responsibility for the team's performance, both successes and failures.
- **Problem-Solving Skills:** Identify and analyse challenges, develop creative solutions, and guide the team through obstacles.
- **Adaptability:** Adjust to changing circumstances, embrace new ideas, and remain flexible in their approach.

JOB TITLE

Industry roles where qualities of leadership, effective communication and specialist knowledge are valued.

- Chief Executive Officer
- Chief Operating Officer
- Chief Financial Officer
- Process Plant Manager
- Technical Manager
- Supply Chain Manager
- Human Resource Manager
- Finance Manager
- Marketing and Communication Manager
- Business Manager
- Business Development Manager
- Meat Processing Supervisor/Manager
- Level 3
- Operations Manager
- Team Leader
- Production Leader (Food and Beverage)
- Production Planner
- Safety Inspector

For further information, visit:

manufacturingmatters.com.au/careers/

Industry Pathways - On the Tools



Jobs involving hands-on work with technology are increasingly common, blending technical expertise with manual dexterity and problem-solving skills. These roles often involve building, repairing, installing, or maintaining technological equipment and systems.

QUALITIES NEEDED FOR THESE ROLES:

- **Manual Dexterity:** Skilled and precise use of hands and tools to manipulate small components and perform intricate tasks.
- **Technical Knowledge:** Understanding of the technology they work with, including its principles, operation, and maintenance.
- **Problem-Solving Skills:** Ability to diagnose issues, identify solutions, and apply critical thinking to resolve technical challenges.
- **Attention to Detail:** Accuracy and precision in their work, ensuring that equipment is assembled and functioning correctly.
- **Patience and Persistence:** Ability to work through complex tasks methodically and remain focused, even when facing setbacks.
- **Communication Skills:** Clearly explain technical issues to colleagues or clients and work effectively in a team.
- **Physical Stamina:** May involve lifting, bending, and standing for extended periods.
- **Up-to-date Knowledge:** A willingness to learn and stay current with rapidly evolving technologies.
- **Adaptability:** Adjust to changing circumstances, embrace new ideas, and remain flexible in their approach.

JOB TITLE

Industry roles that can be considered 'on the tools' which requires different levels of training and specialist knowledge.

- Microbiologist
- Industrial Engineer
- Quality Engineer
- Artificial Intelligence Engineer
- Data Analyst
- Environmental Engineer
- Meat Safety Inspector
- Sustainability Officer
- Process Improvement Analyst
- Quality Assurance Officer
- Engineering Assistant
- Systems Engineer
- Compliance and Safety Officer
- Trainer and Assessor
- Butcher
- Process Operator
- Quality Control Officer
- Process Worker
- Factory Worker
- Storeperson
- Warehouse Operator
- Machine Operator
- Assembly Worker
- Abattoir Worker
- Boning Room Operator
- Rendering Plant Operator
- Production Operator (Meat Processing)
- Smallgoods Maker
- Slaughterer
- Livestock Handler
- Meat Packer

For further information, visit:

manufacturingmatters.com.au/careers/

Future Industry



FUTURE TRENDS AND INNOVATION

The future of Queensland's Meat and Seafood Processing industry aligns with Australia's national economic priorities, particularly in food security, sustainable manufacturing, and advanced processing technologies. These changes support the Future Made in Australia plan's goals of strengthening sovereign manufacturing capabilities and developing advanced food processing skills.

KEY TRENDS INCLUDE:

Digital Manufacturing: Integration of artificial intelligence and machine vision technology in meat processing, enabling precise cutting patterns and yield optimisation. This includes advanced scanning systems that improve portion control and reduce waste in both meat and seafood processing.

Alternative Protein Integration: Development of hybrid protein products and new processing techniques aligned with the growing alternative protein sector. This includes facilities capable of processing both traditional and plant-based proteins to meet changing consumer demands.

Advanced Processing Technologies: Implementation of robotics and automated handling systems in processing facilities, supported by industry-specific digital skills training programs. This includes cobots (collaborative robots) working alongside skilled butchers and seafood processors.

Sustainable Manufacturing: Adoption of closed-loop manufacturing processes, including biogas generation from processing waste, water recycling systems, and advanced packaging solutions focused on recyclability and shelf-life extension.

FUTURE ROLES IN THE INDUSTRY

Leadership Roles:

- Alternative Protein Production Manager: Oversees hybrid protein manufacturing

- Digital Operations Director: Leads smart factory implementation
- Food Safety and Compliance Manager: Coordinates traceability initiatives
- Skills Development Leader: Implements digital manufacturing training

Technical Roles:

- Food Technology Specialist: Maintains advanced processing equipment
- Digital Systems Technician: Programs automated cutting systems
- Cold Chain Innovation Specialist: Develops new preservation techniques
- Robotics Maintenance Engineer: Services automated handling systems
- Industry 4.0 Trainer: Supports workforce digital transition

FUTURE SKILLS FOCUS

Emerging skills requirements across all levels include:

- Digital literacy and data analysis
- Automated systems operation
- Sustainable manufacturing practices
- Advanced cold chain management
- Cross-disciplinary communication
- Food safety and compliance expertise

These emerging roles emphasise the integration of digital technologies and sustainable manufacturing processes. The industry offers new career pathways through technical training programs and micro-credentials, with particular focus on developing digital skills in traditional processing roles.

Other Resources

For further information, visit:

MANUFACTURING MATTERS

manufacturingmatters.com.au

MANUFACTURING SKILLS QUEENSLAND

msq.org.au

QUEENSLAND STATE GOVERNMENT

Department of State Development, Infrastructure and Planning

statedevelopment.qld.gov.au/industry/critical-industry-support/industry-roadmaps

Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development

nrm.mrd.qld.gov.au/manufacturing

BUSINESS QUEENSLAND

business.qld.gov.au/industries

REGIONAL DEVELOPMENT AUSTRALIA

rdabrisbane.org.au

QUEENSLAND BEEF PROCESSING STRATEGY

statedevelopment.qld.gov.au

INDUSTRY ASSOCIATIONS

Australian Meat Industry Council

amic.org.au

Queensland Seafood Industry Association

qsia.com.au

Other Core Industries to Discover

Check out these other core manufacturing industries to understand the similarities and differences between them!

M1

M2

M3

M1 Aerospace and Defence

M4

M5

M6

M2 Chemicals, Hydrocarbons and Refining

M3 Food and Beverage

M4 Furniture and Other Products

M5 Meat and Seafood Processing

M6 General Manufacturing and Engineering

M7 Pharmaceutical and Medical Technology

M8 Polymers, Plastic and Rubber

M9 Printing and Graphic Arts

M10

M11

M12

M10 Pulp, Paper and Packaging

M11 Renewables

M12 Textiles, Clothing and Footwear

M13

M14

M13 Timber and Wood

M14 Transport Equipment and Machinery