MANUFACTURING SKILLS QUEENSLAND

Teacher's Guide: Using the Manufacturing Careers Short Course Industry Pathway Pack(s) within Lesson Delivery.

OBJECTIVE

The MSQ Industry Pathway Packs are designed to support the Lesson Plans by:

- Helping students understand each core manufacturing industry in Queensland
- Guide students through career pathway exploration
- Support assessment preparation using industry-specific resources

There are 14 Industries in total. Each pack is labelled and categorised as:

M1	Aerospace and Defence
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	Pharmaceuticals and Medical Technology
M8	Polymers, Plastic and Rubber
M9	Printing and Graphic Arts
M10	Pulp, Paper and Packaging
M11	Renewables
M12	Textiles, Clothing and Footwear
M13	Timber and Wood
M14	Transport Equipment and Machinery

To use each pack:

Begin by showing students the Industry Pack cover

Explain what industry the pack focuses on, for example Manufacturing Pathway (Polymer, Plastic and Rubber), (this is pack M8)

Highlight that this is one of 14 core manufacturing pathways in Queensland (see left column)

Explain how students can use specific sections:

- Pages 1-2: Industry understanding
- Pages 3-4: Real-world context
- Pages 5-6: Pathway planning
- Pages 7-9: Skills and future trends research
- Page 10: Further resources

Assessment Preparation

Each pack supports assessments:

- Industry research
- Career pathway planning

Extension Activities

- Research sustainability initiatives in the industry, Pages 1 and 9.
- Investigate emerging roles and technologies, Page 9.
- Contact local manufacturers for industry insight

Resources Required

- Digital or printed copies of the Industry Pack
- Access to the Manufacturing Matters website
- Note-taking materials
- Local industry contacts list

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INDUSTRY PACK BREAKDOWN

The following pages include a short bullet point summary of how students might engage with each section, as well as an expanded summary for teachers, explaining how each page could be referenced and used in the classroom.

Industry Overview, Pages 1-3.

Students can use this section to:

- Identify the main sectors relating to that industry
- Note down examples of products they can think of (ideally, examples of products they use) from each sector
- Discuss how these industries operate in Queensland, particularly highlighting local manufacturers

Expanded summary – Industry Overview

Page 1. Provides a comprehensive overview of the selected manufacturing industry in Queensland, making it a valuable teaching resource. Its primary objective is to break down complex manufacturing processes into understandable segments while highlighting real-world applications and career opportunities.

The page is particularly useful because it:

- Connects everyday items (like toys and packaging) to manufacturing processes, making the content relatable for students
- Clearly separates the three main sectors (e.g., polymers, plastics, and rubber), helping students understand the distinct areas within the industry
- Identifies specific job roles and their responsibilities, supporting career education and pathway planning
- Highlights the geographic distribution of these industries across Queensland, helping students understand local employment opportunities
- Integrates technical vocabulary with practical examples, supporting both academic learning and vocational understanding

This page could be used as a foundation for discussions about manufacturing careers, local industry opportunities, and the practical applications of disciplines (such as chemistry and engineering for example) in the workplace. It serves as an excellent bridge between theoretical classroom learning and real-world industry applications.

Page 2. This image-based page provides visual representations of key processes and roles within manufacturing industries. Its primary objective is to help students visualise the practical aspects of manufacturing work environments and technical processes they might otherwise find difficult to conceptualise.

The page is particularly valuable in the classroom because it:

- Shows real manufacturing processes in action
- Demonstrates various career roles (e.g., Materials Engineer, Production Technician) in their work envronments
- Illustrates different types of manufacturing equipment and safety protocols
- Helps visual learners understand complex manufacturing processes
- Makes abstract concepts more concrete and relatable

Teachers could use these images to spark discussions about workplace safety (protective equipment shown in photos), different manufacturing roles, and the progression from raw materials to finished products. The images also help students understand the scale of industrial manufacturing operations and the blend of manual and automated processes in modern manufacturing.

Career Story Analysis, Page 3.

Students might use this story to identify:

- The career pathway taken
- Key skills developed
- Industry challenges and opportunities
- How the person's education contributed to their success

Expanded summary – Career Story Analysis

Page 3. This career story page showcases a real-world example. See M8 pack for example, it shows a Managing Director in Queensland's plastics manufacturing industry, making it a valuable teaching resource. Its primary objective is to demonstrate to students that there are multiple pathways to success in manufacturing, including non-traditional routes.

The page is particularly useful in the classroom because it:

- Presents a local industry perspective from South East Queensland
- Shows students that you don't need to follow a traditional academic path to succeed (the director left school early but later completed an MBA)
- Highlights both technical and management skills required in modern manufacturing
- Provides specific subject recommendations for Year 10 students (Accounting, Business, Engineering)
- Demonstrates how emerging technologies like automation and 3D printing are shaping the industry

Teachers could use this page to spark discussions about career planning, show the value of both vocational and academic education, and help students understand that career paths often evolve over time rather than following a straight line.

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Industry Location Activity, Page 4.

The industry map could be used to:

- Identify manufacturing hubs near their location
- Research local employers using the provided web search terms
- Note potential work experience opportunities

Page 4. This page serves as a practical resource guide for students researching career opportunities in Queensland manufacturing industries. Its primary objective is to teach students how to conduct effective industry research and build core knowledge using specific search terms and trusted platforms.

The page is particularly valuable in the classroom because it:

- Provides specific industry search keywords that students can use immediately
- Lists reliable job search websites (Seek, Indeed, LinkedIn) relevant to the Australian market
- Links to Google Maps to facilitate independent search activities showing where manufacturing facilities are located across Queensland
- Includes a comprehensive list of technical search terms to help students understand industry concepts
- Combines geographical, practical and technical information in one reference

Teachers could use this page to:

- Guide students through independent research tasks
- Help students locate potential employers in their local area
- Teach digital literacy skills specific to job searching
- Support students in building technical vocabulary
- Demonstrate how to conduct structured industry research

This resource is especially useful for Year 10 students as it bridges the gap between classroom learning and practical career exploration, teaching them how to independently research potential career pathways in manufacturing.

Career Pathway Exploration, Pages 5-6. (Industry Pathways)

Students can use this section to:

- Identify the four education levels
- Match their current studies to potential pathway entries
- Create a personal education pathway plan
- Research two roles that interest them

Expanded summary – Career Pathway Exploration

The Career Pathway pages serve dual purposes through complementary formats:

- **Page 5.** (Levels & Photos). This page outlines the four qualification levels in Queensland's manufacturing sector, from Year 10 completion to university degrees. It uses real workplace photos to illustrate different work environments and includes clear explanations of each level's requirements. Teachers would use this to help students understand the various entry points and progression pathways available.
- **Page 6.** (Circular Diagram). This visual representation organises manufacturing roles by qualification level in a circular format, showing how different positions relate to each other and the core industry. Teachers would use this interactive tool to help students explore career progression possibilities and understand how roles interconnect within the industry. The diagram makes complex career pathways more accessible and helps students visualise potential career trajectories.

The combination is particularly valuable because it helps students:

- Identify entry points matching their current education level
- Visualise career progression opportunities
- Understand qualification requirements for different roles
- See the relationship between different manufacturing positions

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Skills and Future Trends, Pages 7 – 9.

Students can use this section to:

- Use the list of job titles to research specific management positions
- Connect current school subjects to future leadership pathways
- Match their current technical interest with specific job roles
- Research hands-on roles that don't require a university degree
- Identify emerging career opportunities in sustainable manufacturing
- Research new technologies like 3D printing and automation
- Explore entry-level positions in growing areas like recycling
- Learn about the increasing important of digital skills

Practical applications, students may:

- Use the information for career counselling sessions
- Use in subject selection planning for Years 11 and 12
- Reference for work experience placement choices
- Support VET course selection decisions
- Guide discussions with industry professionals during school visits

Expanded summary – Skills and future trends

Page 7. (Leading Teams). This page outlines leadership roles and essential team management skills in manufacturing. Teachers would use this to help students understand the soft skills and responsibilities required for management positions, particularly valuable for students considering career progression beyond technical roles. It provides concrete examples of leadership qualities and career pathways.

Page 8. (On the Tools). This page focuses on hands-on technical roles and practical skills required in manufacturing. Teachers would use this to show students the diverse range of technical careers available and the specific skills needed. It's particularly useful for students interested in practical, hands-on work as it provides clear job examples and skill requirements.

Page 9. (Future Trends). This page highlights emerging technologies and future career opportunities in sustainable manufacturing. Teachers would use this to demonstrate how the industry is evolving, particularly in areas like sustainability and automation. It's valuable for helping students understand future job prospects and the growing importance of environmental considerations in manufacturing.

These pages are especially useful because they:

- Connect current studies to future careers
- Show both technical and management pathways
- Highlight emerging industry trends
- Demonstrate the importance of sustainability
- Provide realistic career progression examples

Further Resources, Page 10.

Remember to encourage students to use the additional resources on Page 10 for independent research and deeper understanding of the industry.

This page also reminds students of the 14 Industry Packs available within the broader course materials.

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