PASSING LANE

## MEM - Manufacturing and Engineering

# MEM20422
# Certificate II in Engineering Pathways

# Unit Resources and User Guide

**Passing Lane Pty Ltd**
**PO Box 975**
**COWES VICTORIA 3922**



**MATERIALS PUBLISHED IN AUSTRALIA**

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## INTRODUCTION

Passing Lane Pty Ltd is pleased to introduce your school/institution to our vocational education and training unit resource packages.

# MEM20422 - Certificate II in Engineering Pathways

This document outlines the licensing terms and conditions of the unit resource packages.

It also provides basic information on how to use the materials.

Should you have any further questions or require any additional information do not hesitate to contact Passing Lane.

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## INTRODUCTION-CONT'D

The Student/Trainee and the Teacher/Trainer manuals are developed to provide training content that addresses the specific 'Unit of Competency' as outlined on the following pages.

This unit manuals can be packaged with various manuals addressing other 'Units of Competency' in order to meet the 'Packaging Rules' of a particular Australian Training Package Qualification.

This resource has been designed to be delivered in a form that is conducive to the learning environment including:

- ☆ Online delivery
- ☆ Classroom delivery
- ☆ On the job training

The documents are designed in a 'landscape' format in order to make reading on a computer screen easier as well as reduces the need to scroll down pages. Documents can be easily printed if the learning environment requires the student or trainee to have hard copies of the learning materials.

The Student/Trainee and the Teacher/Trainer manuals are Portable Document Files (PDF) and are opened using Adobe Reader.

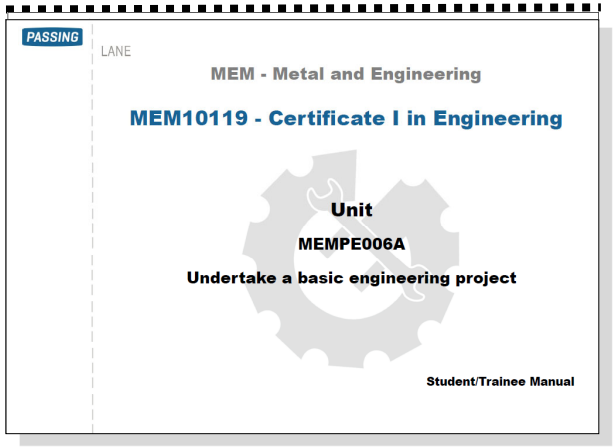
The latest Acrobat Reader software is available at no charge from the website http://get.adobe.com/reader/

## INTRODUCTION—CONT'D

The Student/Trainee and the Teacher/Trainer manuals can be used on both PC and MAC platforms.

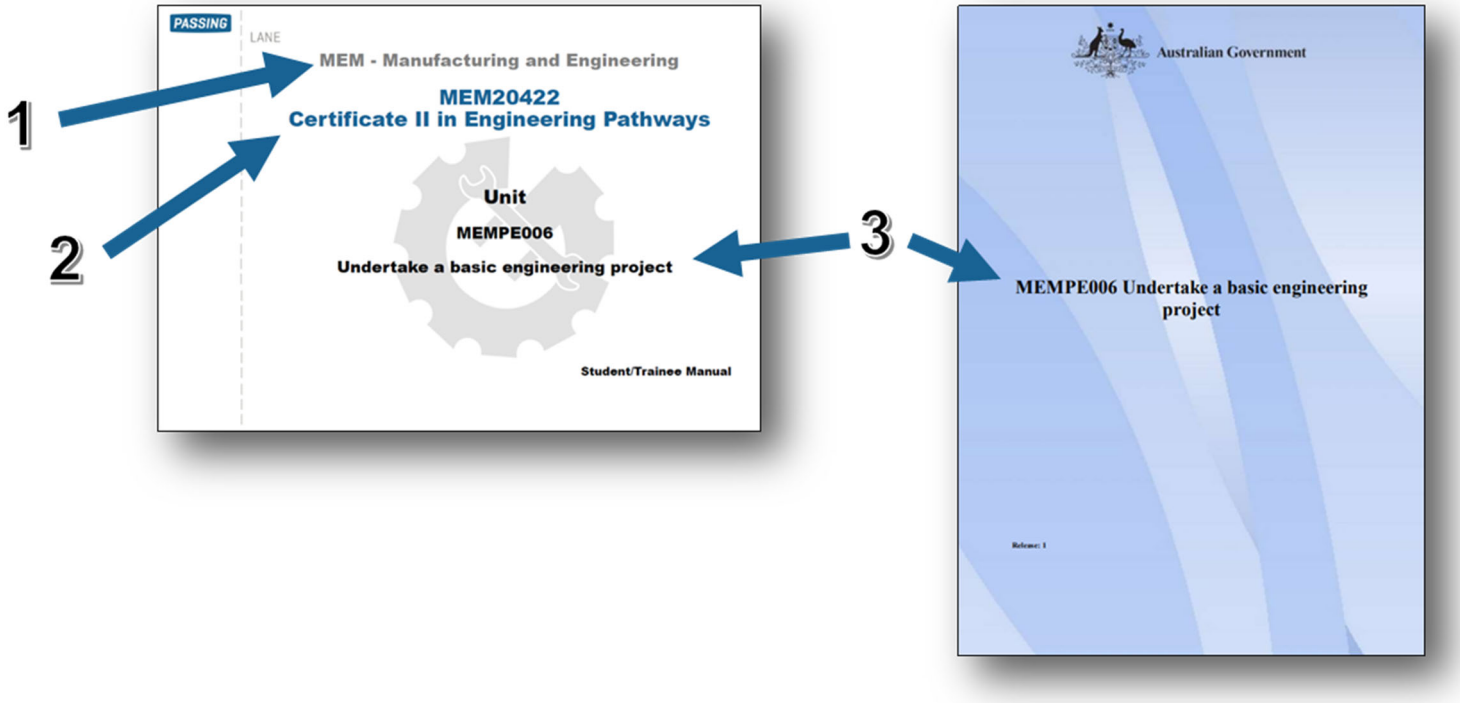
Generally, the materials are easily exported to most learning platforms.

The materials can also be printed and bound and handed out as hardcopies to each student or trainee.



## MATERIALS CONTENT

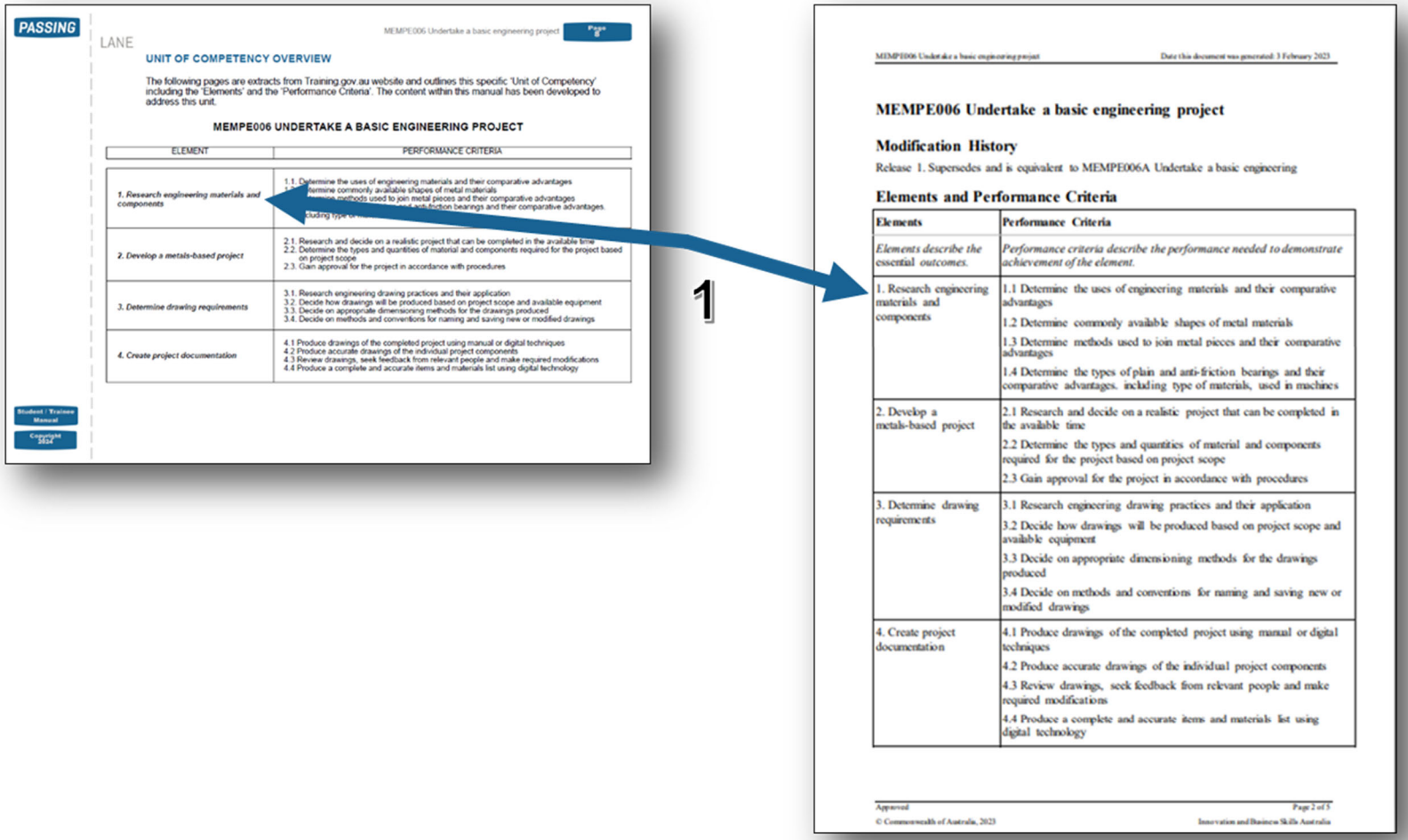
The title page of both the Student/Trainee and the Teacher/Trainer manuals specify 1) the training package it has been developed for, 2) the qualifications which the content in each manual has been written for and 3) the specific unit the content is addressing.



## MATERIALS CONTENT—CONT'D

The beginning of both manuals is the 1) 'Unit of Competency Overview' page, which aligns directly with the endorsed 'Unit of Competency'  in the training package.

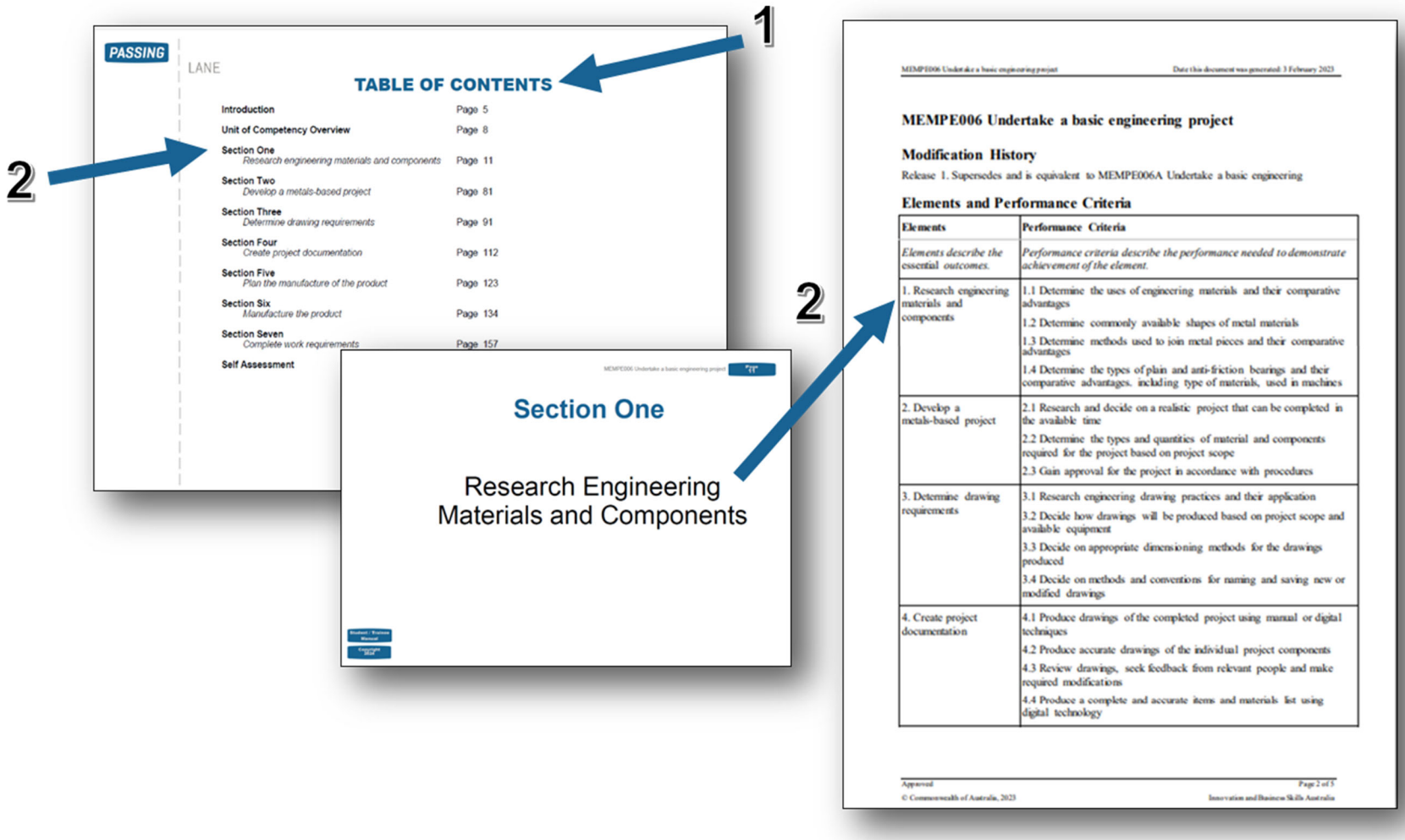
This page is to let the readers know what the materials in the manuals are addressing.



## MATERIALS CONTENT—CONT'D

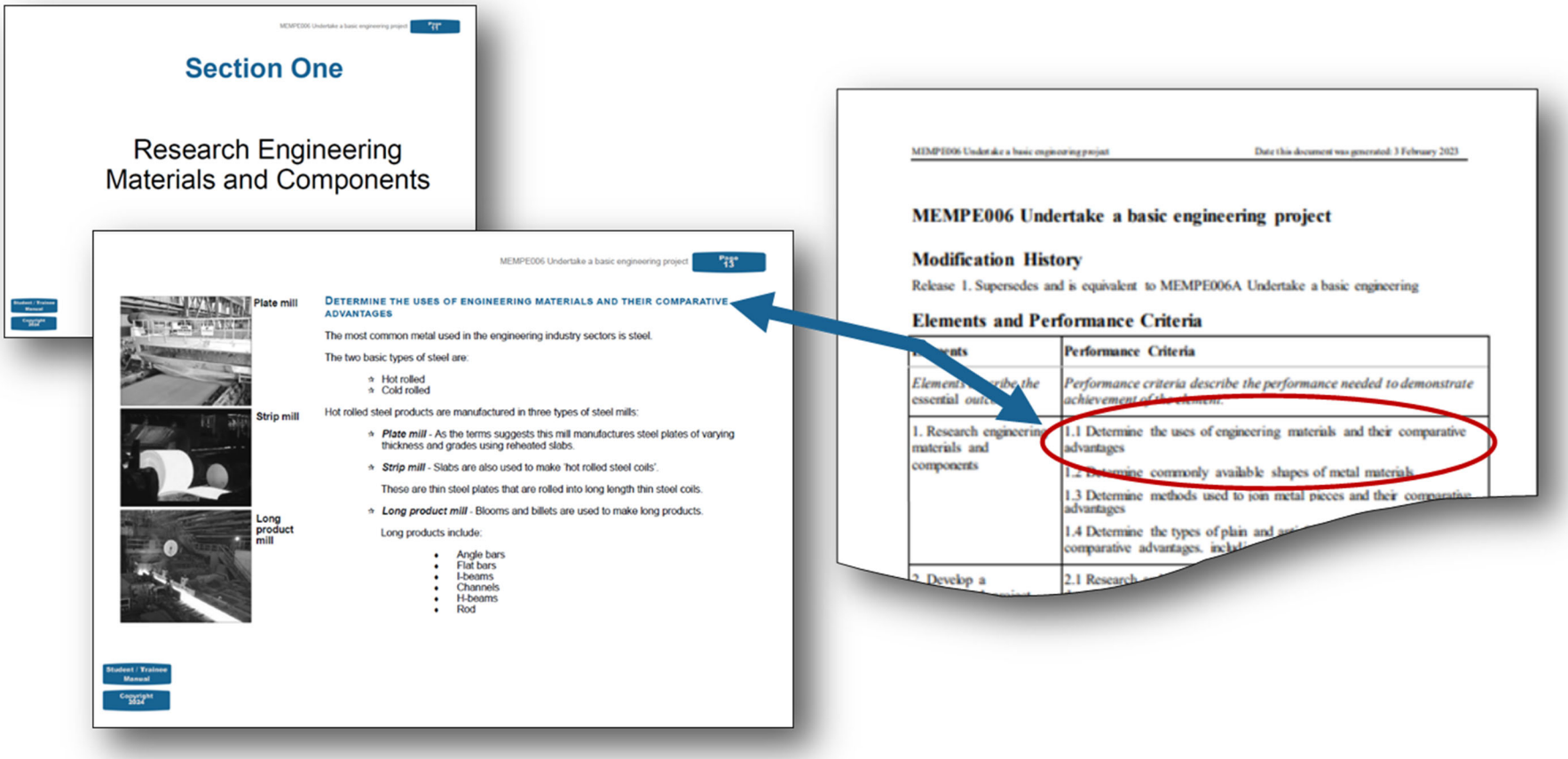
The manuals contain detailed information aligned specifically to the 'Unit of Competency' and the unit's 'Elements' and 'Performance Criteria'.

The 1) Table of Contents for both manuals show that each section title is the 2) 'Unit of Competency'  'Element'.



## MATERIALS CONTENT—CONT'D

In each section the content is broken down into sub-sections and the titles for each sub-section is the same as the 'Element's' 'Performance Criteria'.




The manual's information is supported with graphics, charts, tables, photos and drawings.

## MATERIALS CONTENT-CONT'D

As earlier mentioned, the materials are vocational education and training unit resources in the form of Student/Trainee and the Teacher/Trainer manuals.

We will go through each in more detail.

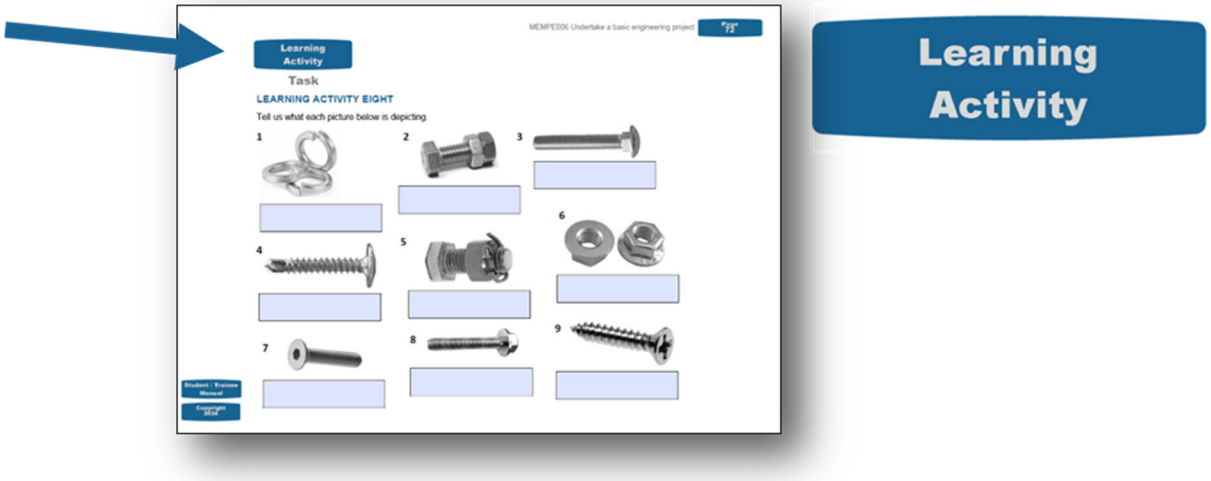
### STUDENT/TRAINEE MANUAL

The 'Student/Trainee Manual' could be likened to a textbook.

The manuals contain detailed information aligned specifically the 'Unit of Competency' and the unit's 'Elements' and 'Performance Criteria' and are supported with graphics, charts, tables, photos and drawings.

The manuals contain a series of 'Learning Activities'.

Each learning activity is identified with the following icon.



## MATERIALS CONTENT-CONT'D

Learning activities come in the following forms.

- ☆ Questions
- ☆ Research
- ☆ Tasks
- ☆ Interviews

***Questions***

Questions would relate to the information presented on previous pages.

***Research***

This type of learning activity would require the student or trainee to locate information by using research methods. The information they would be required to locate would be in line and/or support the information that the manual had outlined in previous pages.


***Tasks***

This learning activity type would require the student/trainee to actually do or undertake something and would be reinforcing the knowledge they have gained from reading the manual's previous pages.

***Interviews***

This learning activity type would require the student/trainee to interview person(s) in an actual workplace environment or a person(s) who are experienced in the industry sector which the student/trainee is currently undergoing training.

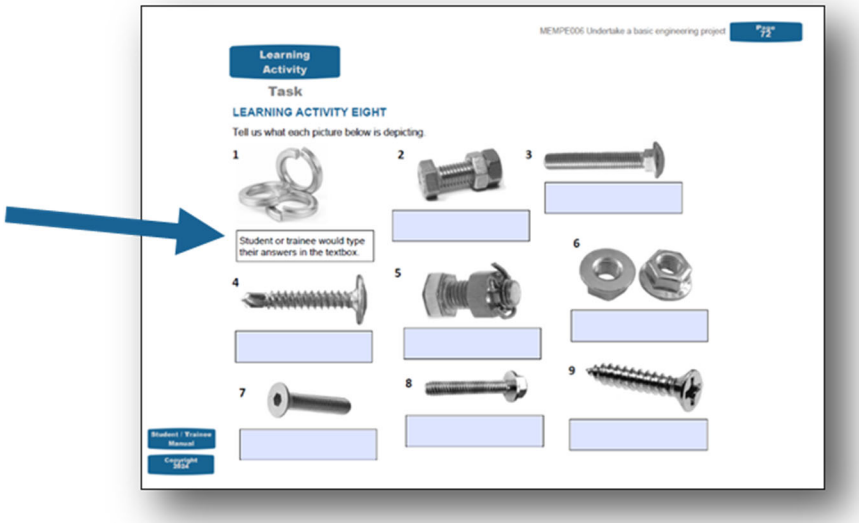
The student/trainee is made aware of the type of learning activity by noting the learning activity type displayed under the learning activity icon.

## MATERIALS CONTENT—CONTID

The learning activities in the Student/Trainee manuals are 'Form Enabled' so that if the resources delivered are online, the activities can be filled in using the computer keyboard.

The student or trainee would simply place the cursor in the field and click once with the mouse.

Seconds later the blue colour disappears and the student enters his/her answers into the field .




When the student or trainee leaves the filled in field to move on to the next field, the previous field returns to a blue colour.

**IT IS VERY IMPORTANT THAT THE MANUAL IS SAVED REGULARLY.**

It is recommended that the student or trainee set up a 'Student/Trainee' folder on their computer and saves their manuals to that folder.

The ***'first'*** SAVE will have the software will ask if you wish to replace the file and the student/trainee would click YES.

Saving does not prevent the student or trainee from going back to previous fields to make changes.

*After* the 'first' SAVE, the student or trainee would need to use the **'SAVE AS'** function.

## MATERIALS CONTENT—CONT'D

### *Self Assessment*

At the end of each manual is a series of questions that the student or trainee should review and answer.

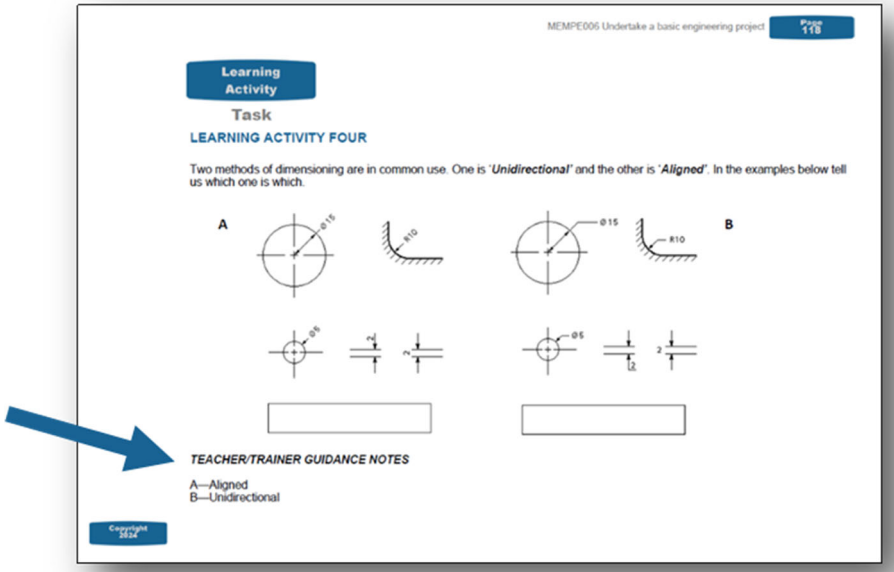
This self assessment is to ensure in the student's or trainee's mind that they have reviewed and understood the information that was presented in the manual.

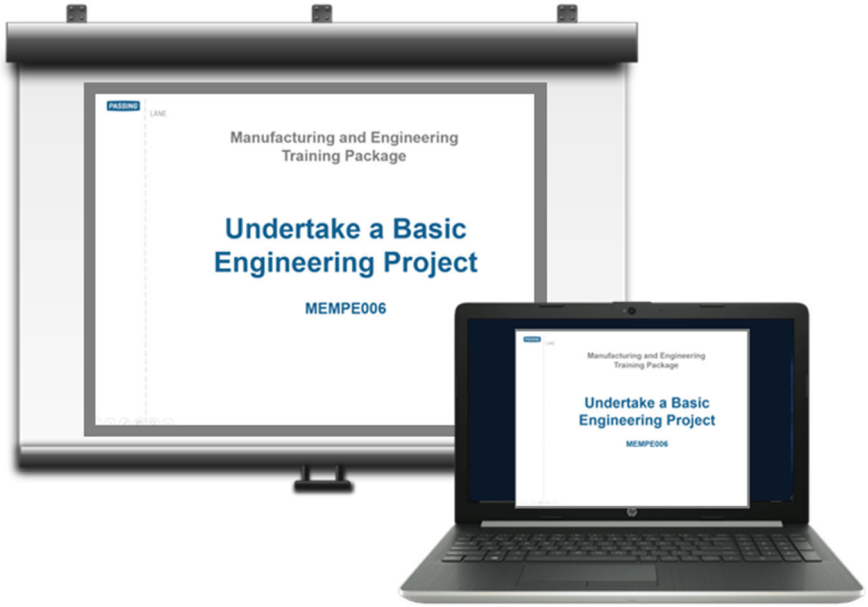
If they are unsure of their understanding in any of the topics reviewed, they are encouraged to go back and review the information again and/or seek the assistance of their teacher or trainer.

### TEACHER/TRAINER MANUAL

The Teacher/Trainer manuals have exactly the same content as the Student/Trainee manuals.

The only differences are the explanatory introduction pages and after each learning activity there are 'Teacher/Trainer Guidance Notes'. These provide the answers to the 'Learning Activities' as well as some notes on how to assess the student/trainee's submission to each learning activity.






## POWERPOINT SLIDE PRESENTATIONS

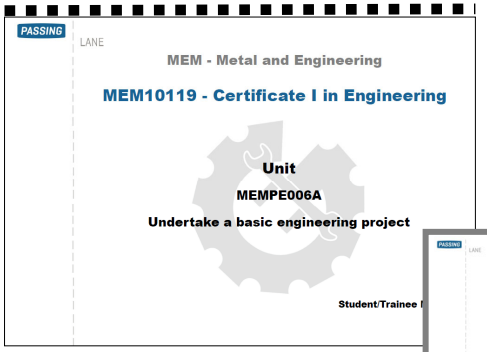
Each Passing Lane unit resource comes with a PowerPoint slide presentation.

Each slide is mapped to a specific page in the Student/Trainee manual.

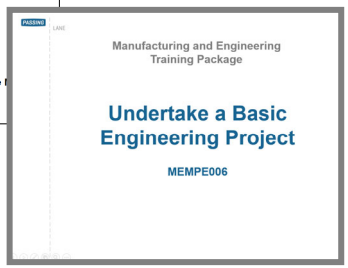
The slide is only a summary of the manual page content and is used by teachers or trainers as a support training aid in classroom training delivery or online training.

The PowerPoint slide presentation is supplied as a ‘Show’.

This means the PowerPoint file has the PowerPoint launch software embedded in the file so the student, trainee, teacher or trainer does not require the PowerPoint application software to view.




**Student/Trainee Manual**



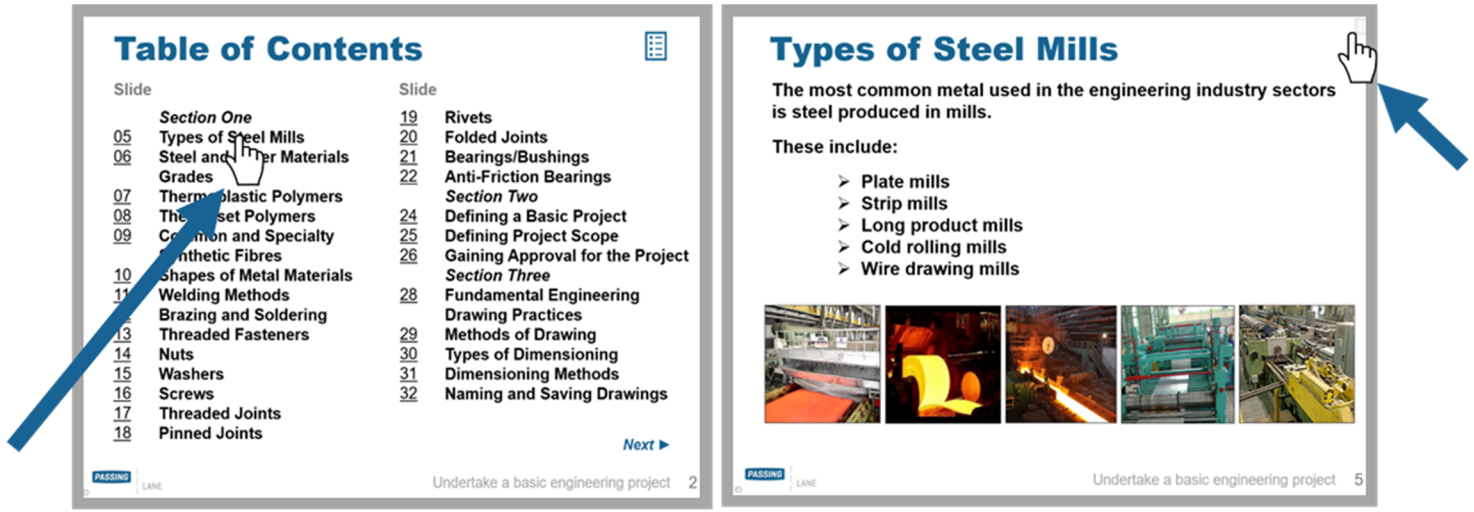

**Slide Presentation**

## POWERPOINT SLIDE PRESENTATIONS—CONT'D

The slides are initially listed in a ***'Table of Contents'*** and the slide names in the Table of Contents are ***hyperlinked*** to the relevant slide.

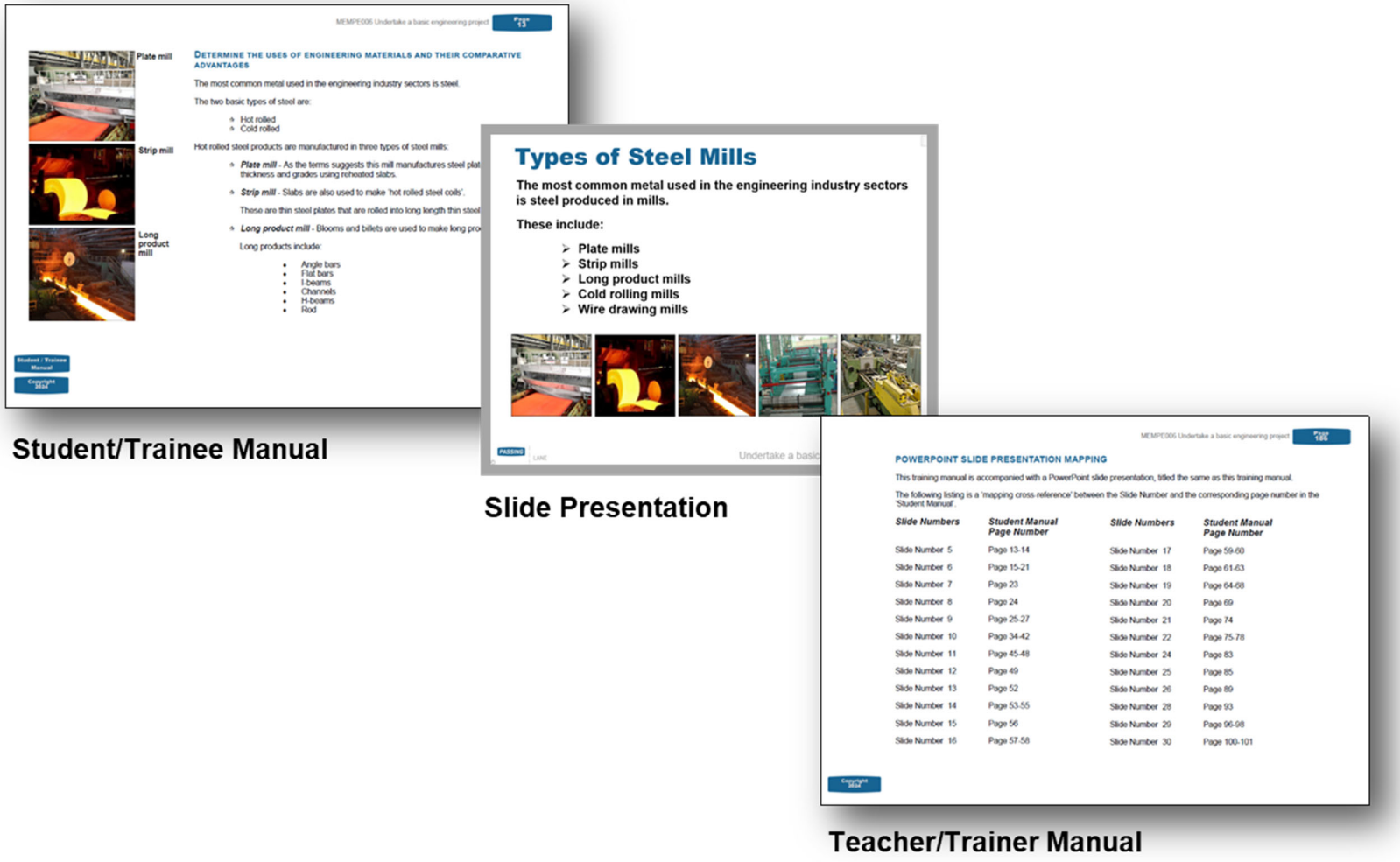
This allows the teacher or trainer to easily jump ahead to a specific subject or go back where they may have left off earlier.

On the top right hand corner is an icon of the Table of Contents that is ***hyperlinked*** back to the Table of Contents.



## POWERPOINT SLIDE PRESENTATIONS—CONT'D

Each slide is 'mapped' to a specific page in the 'Student/Trainee' manual. This mapping is in the Teacher/ Trainer manual at the end of the document.

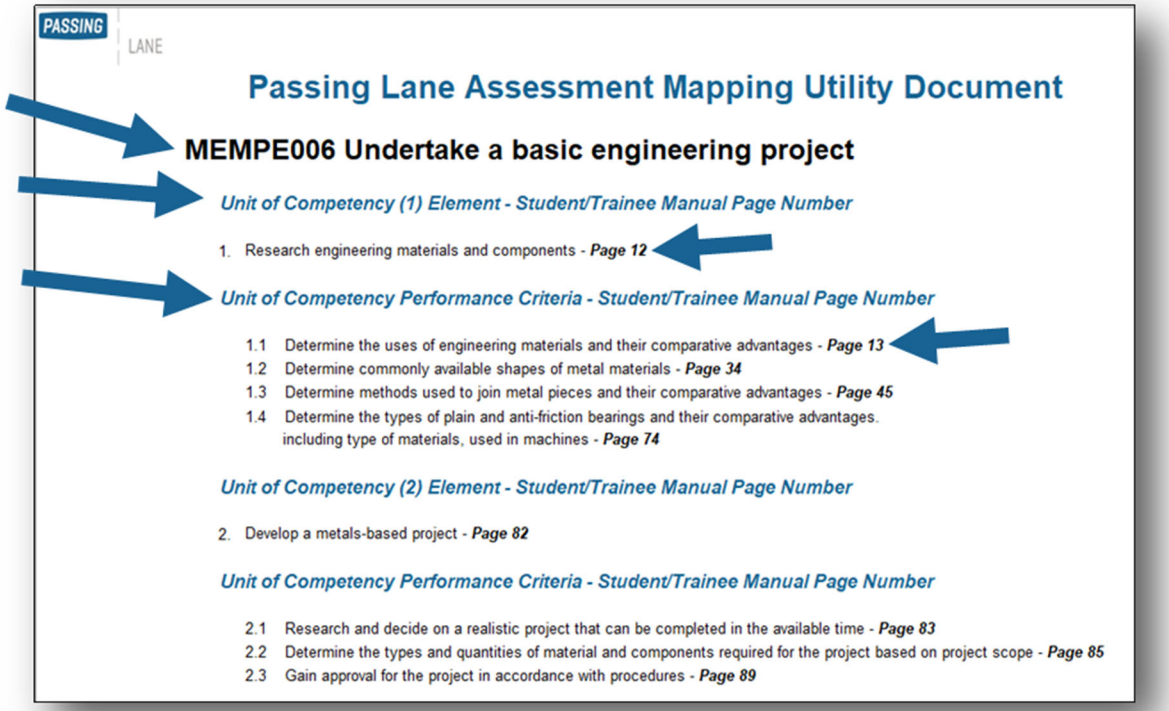


## ASSESSMENT MAPPING UTILITIES

***Passing Lane does not provide assessment tools as this is the responsibilities of the registered training organisation under the rules of ASQA.***

However, Passing Lane does offer an 'Assessment Mapping Utility' for each student/trainee manual.

The mapping utility document outlines where the student/trainee manual content addresses the 'Element' and each 'Performance Criteria' by page number(s).



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**Passing Lane Assessment Mapping Utility Document**

**MEMPE006 Undertake a basic engineering project**

*Unit of Competency (1) Element - Student/Trainee Manual Page Number*

1. Research engineering materials and components - ***Page 12***

*Unit of Competency Performance Criteria - Student/Trainee Manual Page Number*

1.1 Determine the uses of engineering materials and their comparative advantages - ***Page 13***
1.2 Determine commonly available shapes of metal materials - ***Page 34***
1.3 Determine methods used to join metal pieces and their comparative advantages - ***Page 45***
1.4 Determine the types of plain and anti-friction bearings and their comparative advantages. including type of materials, used in machines - ***Page 74***

*Unit of Competency (2) Element - Student/Trainee Manual Page Number*

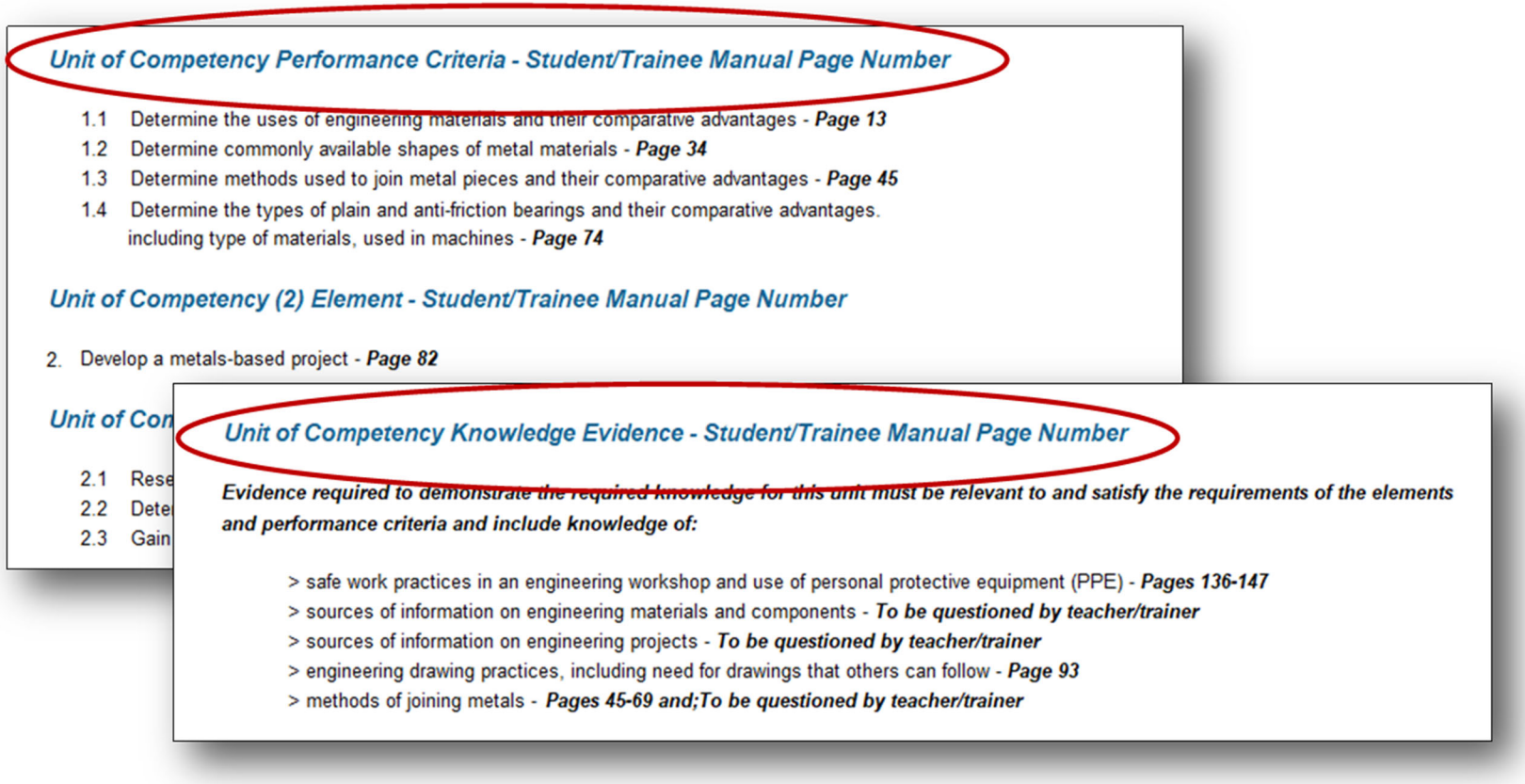
2. Develop a metals-based project - ***Page 82***

*Unit of Competency Performance Criteria - Student/Trainee Manual Page Number*

2.1 Research and decide on a realistic project that can be completed in the available time - ***Page 83***
2.2 Determine the types and quantities of material and components required for the project based on project scope - ***Page 85***
2.3 Gain approval for the project in accordance with procedures - ***Page 89***

## ASSESSMENT MAPPING UTILITIES—CONT'D

The mapping utility document also outlines where the student/trainee manual content addresses the 'Performance Evidence and Knowledge Evidence' requirements.



*Unit of Competency Performance Criteria - Student/Trainee Manual Page Number*

1.1 Determine the uses of engineering materials and their comparative advantages - ***Page 13***
1.2 Determine commonly available shapes of metal materials - ***Page 34***
1.3 Determine methods used to join metal pieces and their comparative advantages - ***Page 45***
1.4 Determine the types of plain and anti-friction bearings and their comparative advantages. including type of materials, used in machines - ***Page 74***

*Unit of Competency (2) Element - Student/Trainee Manual Page Number*

2. Develop a metals-based project - ***Page 82***

*Unit of Competency Knowledge Evidence - Student/Trainee Manual Page Number*

***Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:***

> safe work practices in an engineering workshop and use of personal protective equipment (PPE) - ***Pages 136-147***
> sources of information on engineering materials and components - ***To be questioned by teacher/trainer***
> sources of information on engineering projects - ***To be questioned by teacher/trainer***
> engineering drawing practices, including need for drawings that others can follow - ***Page 93***
> methods of joining metals - ***Pages 45-69 and;To be questioned by teacher/trainer***

## LICENCE OVERVIEW

The Passing Lane licence agreement frees the school, TAFE, and other training organisations of the burden of copyright restrictions.

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All licences are renewable for a fee or automatically renewed for a full licence period when an available upgrade is purchased.

## LICENCE OVERVIEW—CONT'D

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Should the school/institution not renew the licence, the materials must not be used and all materials removed from websites, networks and learning platforms.

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Should your school or institution have any further questions or require any additional information about the licensing arrangements do not hesitate to contact Passing Lane.

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## MATERIAL MODIFICATIONS

The Passing Lane licence agreement allows the Passing Lane materials to be modified or contextualised to suit the teaching/training environment.

This includes adding or deleting written content, adding school or institution's logos and adding your own pictures or graphics.

Graphics, pictures or illustrations in the original materials can be removed ,but not used elsewhere or modified.

The PDFs can be converted to WORD files using PDF conversion tools that are readily available on the market.

## UPDATES AND UPGRADES

On occasions the training packages will be updated and if the updates are minor, Passing Lane updates the materials and the updated materials are provided free to those holding a current user licence.

If the training package changes are substantial, Passing Lane will update the materials.

However, there would be a small upgrading fee charged to those schools or institutions wanting to upgrade their materials.