# Knowledge Assessment

**Event 1 of 3**

# Trainer & Assessor Marking Guide

## Criteria

### Unit code, name and release number

MEM18001C - Use hand tools (1)

### Qualification/Course code, name and release number

MEM30205 - Certificate III in Engineering - Mechanical Trade (3)

Version: *1.0*

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This assessment can be found in the: [Learning Bank](https://share.tafensw.edu.au/share/access/searching.do?doc=%3Cxml%2F%3E&in=P7ac4831b-430a-4b8d-8b56-f7b32ed5b9cf&q=&type=standard&sort=rank&dr=AFTER)

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## Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Instructions for the trainer and assessor** | This is a written assessment and will be assessing the student on their knowledge of the unit MEM18001C Use hand tools.  This assessment is in 4 parts:   1. Multiple choice questions 2. True or False questions 3. Short answer questions 4. Assessment feedback   Model answers, sample responses or a criteria for each question are provided below.  Use these to support your judgement when determining a satisfactory result.  The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct. However, if a student provides information other than indicated below, and in the professional opinion of the assessor it is appropriate and meets the intent of the question, it may be considered correct.  Provide the Assessment Feedback to the student. Ensure you have taken a copy of the assessment prior to it being returned to the student.  The assessment feedback comments are to be structured to give the student advice on the steps and actions they need to take to reach a satisfactory result when re assessed.  The assessment feedback page must be signed by both the student and the assessor so the student displays that they have received, understood and accepted the feedback.  Ensure the students name appears on the bottom of each page of the submitted assessment. |
| **About this marking guide** | The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct.  All questions must be answered correctly in order to satisfactorily complete this assessment event.  Assessors will need to make a judgement call as to whether each answer/response meets the criteria based upon the:   * Rules of Evidence:   + Validity – does the answer address the assessment question and does the evidence reflect the four dimensions of competency?   + Sufficiency – is the answer sufficient in terms of length and depth?   + Currency – has the work been done so recently as to be current?   + Authenticity – is this work the student’s own authentic work? * Principles of Assessment:   + Fairness – individual student’s needs are considered in the assessment process   + Flexibility – assessment is flexible to the individual student   + Validity – any assessment decision is justified, based on the evidence of performance of the student   + Reliability – evidence presented for assessment is consistently interpreted and assessment results are comparable irrespective of the assessor conducting the assessment * Dimensions of competency   + Task skills   + Task Management Skills   + Contingency Planning Skills   + Job Role Environment Skills |
| **Student must provide** | Pens, pencil, eraser |
| **Assessor must provide** | Class room suitable for conducting written assessment test |
| **Time allowed** | 1 Hour |

## Part 1: Multiple choice

Student to read question carefully and mark X in the table next to their chosen answer(s)

1. (RK4) (PC1.2) To help prevent pinning during filing we can:

Table 1: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Rub chalk into the face of the file | X |
| 1. Only use the file in a forward direction |  |
| 1. Rub file on edge of bench |  |
| 1. Lubricate the file with a fine grade machine oil |  |

1. (RK1) (PC1.1) A hacksaw blade with a tooth pitch of 1.8mm (14 teeth per inch) would be most suitable for cutting:

Table 2: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Large solid sections of soft metal | X |
| 1. Large solid sections of hard metal |  |
| 1. Thin wall tubing, and light angle |  |
| 1. Sheet metal |  |

1. (RK1) (PC1.1) The recommended hacksaw blade pitch for cutting thin tubing, sheets and light angle is:

Table 3: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. 1.8mm (14 Teeth per inch) |  |
| 1. 1.4mm (18 Teeth per inch) |  |
| 1. 1.0mm (24 Teeth per inch) |  |
| 1. 0.8mm (32 Teeth per inch) | X |

1. (RK1) (PC1.1) The two (2) common types of dies used in industry pictured below are:



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Table 4: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Button and bottoming |  |
| 1. Button die and die nut | X |
| 1. Die nut, thread button |  |
| 1. Intermediate and bottoming |  |

1. (RK1) (PC1.1) The spanner which is least likely to slip and cause damage to hexagonal head of a bolt is a:

Table 5: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Ring spanner | X |
| 1. Open end spanner |  |
| 1. Podge spanner |  |
| 1. Shifting wrench |  |

1. (RK1) (PC1.1) The tool used to align bolt holes in steel plates, which allows bolts to be fitted is a:

Table 6: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Ring spanner |  |
| 1. Open end spanner |  |
| 1. Podge spanner | X |
| 1. Shifting wrench |  |

1. (RK1) (PC1.1 PC1.2) The wrench which is used to tighten a nut or bolt to a specific tension is a:

Table 7: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Torque wrench | X |
| 1. Adjustable wrench |  |
| 1. Combination open end and ring spanner |  |
| 1. Socket spanner |  |

1. (RK1) (PC1.1) From the list below select the tool suitable for loosening tight screws by striking the tool with a hammer is a:

Table 8: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Posi-drive screw driver |  |
| 1. Phillips head screw driver |  |
| 1. Off set screw driver |  |
| 1. Through tang screw driver | X |

1. (RK2) What is the main cause of hacksaw blades bending or breaking when cutting?

Table 9: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Using too high a tooth pitch blade for the material being cut |  |
| 1. Cutting at an angle |  |
| 1. Insufficient tension on blade | X |
| 1. Material is held too tight in the vice |  |

1. (RK2) (RS6) When sharpening a chisel using a bench grinder care must be taken not to overheat the cutting edge of the chisel as this will result in:

Table 10: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. The cutting angle will change |  |
| 1. A change in hardness to the cutting edge | X |
| 1. A mushroom effect to the cutting edge |  |
| 1. Have no effect at all |  |

1. (RK4) To remove the pinning’s in the teeth of a file we use a:

Table 11: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. File card | X |
| 1. File cleaner |  |
| 1. De - pinning tool |  |
| 1. Blow out with compressed air |  |

1. (RK2) The major defect as pointed to by the arrow in the picture below is called a:



Table 12: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Burred head |  |
| 1. Work head |  |
| 1. Rounded head |  |
| 1. Mushroomed head | X |

1. (RK4) Recommendations for hand tool maintenance is best sourced from:

Table 13: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. The store person |  |
| 1. Other tradespersons |  |
| 1. Company management |  |
| 1. The manufacturer of the tool | X |

1. (RK6) (PC1.2) Substituting the correct tool for a job with another tool not designed for the purpose can:

Table 14: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Give inferior finish of job |  |
| 1. Increase the chance of an accident | X |
| 1. Save time where correct tool can’t be located |  |
| 1. Doesn’t matter if the job is completed successfully |  |

1. (RK7) From the list below select the item of PPE **which is not required** to be worn to safely use a cold chisel:

Table 15: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Eye protection |  |
| 1. Hearing protection |  |
| 1. Gloves |  |
| 1. Leather jacket | X |

1. (RK8) Which of the following information **would not** be indicated in a Standard Operating Procedure (SOP) for the use of a hand tool?

Table 16: Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. The expiry date of the hand tool | X |
| 1. The PPE required for use |  |
| 1. The guidelines for the correct use of the tool |  |
| 1. Checking the condition of the tool prior to use |  |

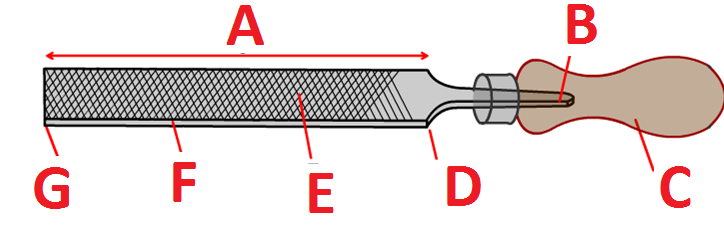
## Part 2: True or false

Table 1: True or false

| Question | Write *True* or *False* |
| --- | --- |
| 1. (RK2) Pinning is where scratches are created on the surface of an object being filed | *True* |
| 1. (RK2) An unclean cut when using aviation snips can be caused where there is a nick or chip in the blades | *True* |
| 1. (RK6, RK8) Larger files can be used without a handle if we only use the file by pushing in a forward direction | *False* |
| 1. (RK8) When carrying out a task in a recognised workshop you don’t need to follow standard operating procedures | *False* |
| 1. (RK6, RK8) When using a cutting tool such as a Stanley knife we should cut in a direction towards yourself to have greater grip on the job | *False* |
| 1. (RK5) The Storeman is responsible for making sure that tools and fixtures are returned to their correct location at the completion of a task and off cuts are sorted into their correct recycling or waste bins | *False* |
| 1. (RK6) Welding by a qualified tradesperson to repair a cracked or damaged tool, is acceptable practice | *False* |
| 1. (RK3) (PC1.4) A damaged tool that requires repair should be marked “out of service” and the supervisor notified | *True* |

## Part 3: Short answer

1. (RK1) (PC1.1) From the diagram of a file below, match the corresponding description to its respective letter e.g. Handle = C:

**

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Handle \_\_\_C\_\_\_ **(example)**

Shoulder \_\_\_**D**\_\_\_

Point \_\_\_**C**\_\_\_

Edge \_\_\_**F**\_\_\_

Length \_\_\_**A**\_\_\_

Tang \_\_\_**B**\_\_\_

Face \_\_\_**E**\_\_\_

1. (RK1) (PC1.1) What is the type of cut shown on the above file face and state an application of the file:

*Double cut*

*Application - Fast removal of material and removes more metal per stroke than single cut*

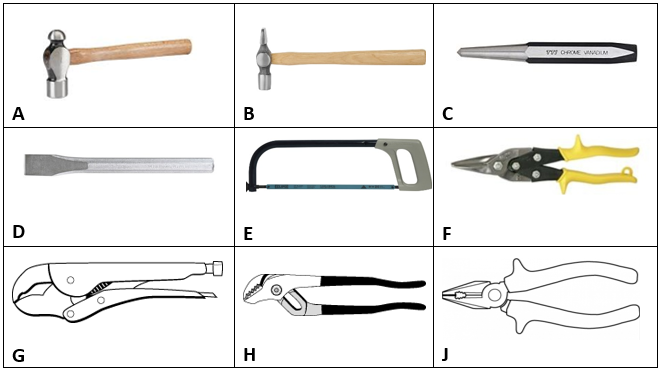
1. (RK4) When fitting a new hammer handle what item secures the hammer head tightly onto the handle:

*Metal wedge*

1. (RK6) (PC1.3) What is the reason we don’t use a file as a lever:

*Files are made from high carbon steel and are very brittle and when used as a lever can shatter leading to potential eye injuries.*

1. (RK1)) Using the images of tools in the diagram complete the table below by indicating the correct tool name to its respective letter and its application in general engineering

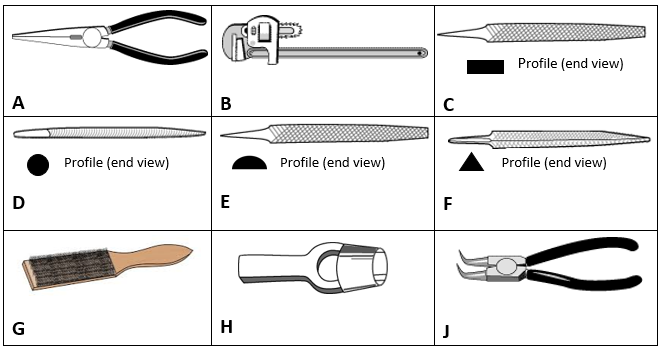


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Table 1 Short answer

|  |  |  |
| --- | --- | --- |
| Image | Tool Name | Application |
| **A** | *Ball pein (peen) hammer* | *Hand hammer /peening* |
| **B** | *Cross pein (peen) hammer* | *Spreading material/cross peening* |
| **C** | *Centre punch* | *Datum marking material* |
| **D** | *Cold chisel* | *Chipping surplus metal* |
| **E** | *Hacksaw* | *Cutting ferrous and non-ferrous material* |
| **F** | *Aviation Snips* | *Cutting sheet metal* |
| **G** | *Vice grips* | *Locking grip/clamping* |
| **H** | *Multi grips* | *Gripping/controlled width of jaws and size* |
| **J** | *Combination or bull nose pliers* | *Holding and cutting material* |

1. (RK1) Using the images of tools in the diagram complete the table below by indicating the correct tool name to its respective letter and its application in general engineering



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Table 2 Short answer

|  |  |  |
| --- | --- | --- |
| Image | Tool Name | Application |
| **A** | *Long nose/needle nose pliers* | *Cutting /gripping in small areas* |
| **B** | *Stillson/ Pipe wrench* | *Tighten/loosen pipe* |
| **C** | *Flat file* | *Flat filing/finishing* |
| **D** | *Round file (Rat tail)* | *Round filing/finishing, elongating holes* |
| **E** | *Half round file* | *Flat and curved filing/finishing* |
| **F** | *Three square file* | *Angular filing/finishing* |
| **G** | *File card* | *Cleaning file, removing pinning* |
| **H** | *Wad punch/Hollow punch* | *Accurate hole punching in rubber, cork, gasket* |
| **J** | *Circlip pliers (internal offset)* | *Removing/replacing circlips* |

1. (RK1) Using the images of tools in the diagram complete the table below by indicating the correct tool name to its respective letter and its application in general engineering.

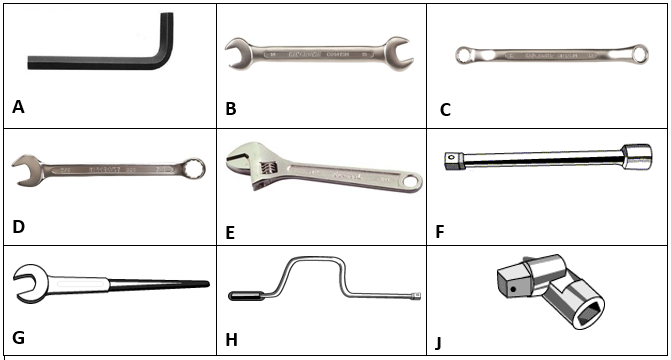
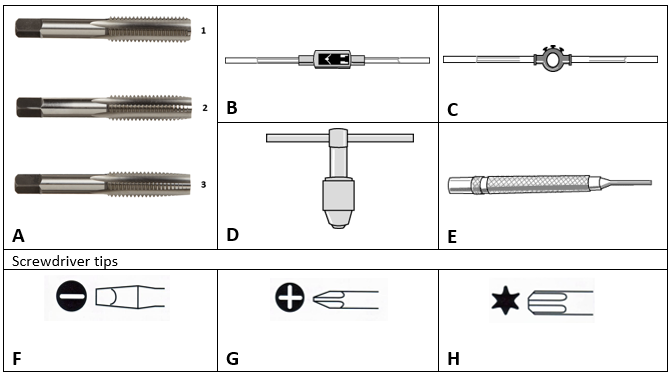
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Table 3 Short answer

|  |  |  |
| --- | --- | --- |
| Image | Tool Name | Application |
| **A** | *Allen key* | *Tighten/loosen recessed hex head screws* |
| **B** | *Open end spanner* | *Tighten/loosen hex head bolts* |
| **C** | *Ring spanner* | *Tighten/loosen hex head bolts, non-slip* |
| **D** | *Combination open end/ring spanner* | *Two different spanners in one* |
| **E** | *Adjustable wrench (Shifter)* | *Convenient irregular size adjustment* |
| **F** | *Extension bar* | *Socket access in tight areas* |
| **G** | *Podge spanner* | *Align and tighten bolts* |
| **H** | *Speed brace* | *Fast removal/replacement of fixings* |
| **J** | *Universal joint* | *Tighten/loosen fixings in hard to reach areas* |

1. (RK1) Using the images of tools in the diagram complete the table below by indicating the correct tool name to its respective letter and its application in general engineering.



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Table 4 Short answer

|  |  |  |
| --- | --- | --- |
| Image | Tool Name | Application |
| **A** | *Plug or Bottoming tap*  *Intermediate tap*  *Tapered tap* | *Tapping threaded holes* |
| **B** | *Tap wrench* | *Driving taps to tap threaded holes* |
| **C** | *Stock* | *Driving dies to make/repair external threads* |
| **D** | *T Wrench* | *Driving small taps* |
| **E** | *Pin punch* | *Remove/replace cotter and roll pins* |
| **F** | *Flat/straight* | *Remove/replace flat head screws* |
| **G** | *Phillips* | *Remove/replace Phillips head screws* |
| **H** | *Torx* | *Remove/replace Torx head screws* |

1. (RK2, RS5) Following the example shown for tin snips in the table below, match the fault/ defect to the most appropriate action /remedy.

Table 5 Short Answer/ matching

|  |  |  |
| --- | --- | --- |
| Hand Tool | Faults/Defects | Action /Remedy |
| **Tin snips**  (example) | 1. Blunt blades not producing clean cut 2. Handles damaged | 1. Dispose of tool 2. Sharpen and adjust blades if possible 3. Tape handle to prevent injury |
| **Hammer** | 1. Loose hammer head 2. Split hammer handle 3. Chipped hammer face | 1. Resecure with wedges 2. Dispose of tool 3. Tape handle to prevent injury 4. Replace hammer handle 5. Use with caution |
| **Centre punch** | 1. Mushroomed head 2. Blunt point 3. Bent body | 1. Dispose of tool 2. Resharpen to correct angle 3. Grind head of punch 4. Straighten punch in a press |
| **File** | 1. Split handle 2. Cracked file face | 1. Replace handle 2. Use with caution 3. Dispose of file |

1. (RK5) (PC1.6) (RS7) Following the example shown for tin snips in the table below, check the correct storage requirements in the column with possible responses:

Table 6 Short Answer check box

|  |  |  |
| --- | --- | --- |
| Hand Tool | Choose from list for appropriate tool storage solutions | Mark X in the box for appropriate Storage |
| **Tin snips**  (example) | 1. Toolbox or shadow board 2. Engage safety lock to keep jaws closed 3. Check for damage and repair or dispose of if required 4. inform supervisor item has been stored 5. Wipe blade with oiled cloth to prevent corrosion |  |
| **File** | 1. Shadow board 2. Remove handle 3. Keep files separate not in a draw with other files 4. Clean pinning’s from file 5. Keep away from moisture |  |
| **Hacksaw** | 1. Tool box or shadow board 2. Shadow board 3. Replace blunt or damaged blades 4. Loosen blade tension nut 5. Tighten blade tension nut |  |

1. (RK6) (PC1.3) Briefly explain how you would get tools up an elevated work platform or scaffolding which is accessed by a ladder:

*Do not carry tools in hands when climbing a ladder. Tools should be raised or lowered using a bucket and handline*

1. (RK6, RK8) (PC1.3) When working on a scaffolding or aloft, what should we do with the tools when we aren’t using them and give a reason why:

*Tools should be stored securely and not left lying around as they may be knocked and fall leading to a safety hazard to those working below*

1. (RK3, RK6, RK8) PC1.4) A tool is found to be damaged and unsafe to use and is to be placed “out of service”. What information is required on the “out of service tag”?

*Place an out of service tag on the tool listing*

*\* Name*

*\*Date*

*\* Description of Fault or damage*

*Notify the supervisor of the unsafe tool damage.*