# Written Task: Topic 2 Sustainability and resource efficiency

# Trainer & Assessor Marking Guide

### Unit code, name and release number

MSMENV272 - Participate in environmentally sustainable work practices (R2)

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

MSF31113 Certificate III in Cabinet Making (R6)

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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 assess the student on their knowledge and performance of the unit.  This assessment is in 2 parts:   1. Identify resources used at work and the associated environmental issues 2. Measure resource usage 3. 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.  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.  Complete the assessment feedback to the student and ensure you have taken a copy of the assessment prior to it being returned to the student.  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 task and activity must contain the information indicated in this marking guide in order for their response to be correct.  All tasks and activities 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** | Calculator, pens, note pad, USB/FLASH to download and store electronic files. Internet access and Computer for students off campus if completing online. |
| **Assessor must provide** | Computers, Learner Resources, Activity sheets, reference text, organisational policy etc that is referenced in the assessment. These may be hard copy or made available online. |
| **Due date and time allowed** | *60 minutes* |

## Part 1: Identify resources used at work and the associated environmental issues

Read the questions carefully. Your answers should be a minimum of 2 words but no longer than 20 words *(unless indicated otherwise).*

Using sentences or dot points, answer the following two questions using the spaces provided.

**Question 1: What does *resource efficiency* at work mean?** (KE2, 1.1)

Acceptable responses would include one or more of the following (or similar):

* making more with less
* using electricity, water, gas more carefully
* reducing waste
* being careful with resources and materials at work so you reduce waste and maximise v. output
* any definition for resource efficiency that you can find on the internet and that you think is reasonable

**Question 2: List 3 environmental issues that apply to your workplace.** (KE2, KE5, 1.1)

Acceptable responses include 3 of the following:

* climate change OR greenhouse effect OR emitting too much carbon dioxide or greenhouse gasses
* water scarcity OR running out of water
* resource depletion
* waste (or recycling, reducing waste, waste disposal)
* use of non-renewable resources
* deforestation
* reduced biodiversity
* air pollution
* dust
* odours
* water pollution
* spills
* noise that affects neighbours

To complete questions 3 and 4, you will be required to identify the resources that you use in a typical day at your workplace or in the TAFE workshop.

**Question 3: From the options below, circle all the resources that you use on a typical day at work or in the TAFE workshop.** (KE2, 1.2)

A satisfactory response would be three different items listed with at least one of the ideas (or similar) in the table to follow.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Electricity | Staples | Glue | Solvent | Timber |
| Sandpaper | Gas | Rag/Cloth | Water | Saw blade |
| Drawer runners | Cleaning products | Drill bits | Manufactured board | Router bits |
| Paint | Varnish | Filler | Detergent | Abrasives |

**Question 4: For three of the items above fill in the information below.** (KE2, KE5, 1.2)

Read the question carefully. Your answers for each environmental impact should be a minimum of 5 words but no longer than 20 words *(unless indicated otherwise).*

A satisfactory response would be three different items listed with at least one of the ideas (or similar) in the table below.

|  |  |
| --- | --- |
| Item | What could be the environmental impact of the production or use of this item? |
| Electricity | Greenhouse gases produced by burning coal (impacts from mining and transporting coal). Solar, wind, hydro: significantly fewer emissions. |
| Volatile chemicals (such as solvents) | Solvents are very strong greenhouse gases, trapping heat in the atmosphere. Energy used in production. Potential polluting production processes |
| Timber | Has the potential to remove greenhouse gases from the atmosphere and lock them in the product (this is a positive sustainability impact).  Possible water pollution if not harvested sustainably. Possible issues with habitat destruction and biodiversity loss if not from a sustainable source. |
| Manufactured boards | As above for timber. Contain glues and other chemicals, which will have produced some pollution and used energy at the extraction and manufacturing stages. |
| Plastics | Produced from crude oil, non-renewable. |
| Coatings, paints, stains, adhesives | Some renewable (natural oils) and no renewable (crude oil) sources.  Energy used and pollution produced in the manufacturing process. |
| Gas | Non-renewable resource. |
| Fuels for transport | Using fossil fuels. |
| Water | Renewable resource with significant pressure during drought. |
| Metal components (e.g. fasteners) | Produced from mining, non-renewable. Significant energy used in the manufacture of metal products. |
| Tools and equipment | Energy and resources used in the manufacture – significant embodied resource. |

## Part 2: Measure resource usage (1.3)

Read the question carefully. Your answer should be a minimum of 20 words but no longer than 50 words *(unless indicated otherwise).*

To complete this part of the assessment, you will be required to record usage of a resource at work. Think about one or more resources you could measure as part of your job or studies. For example, you could:

* measure how much of one item you use each day (for example, timber or manufactured board or glue), or
* measure electricity or water usage over a period of time, or
* measure all of the items used to create a finished product.

**Hint:** Appendix 1 provides some examples of how you could approach this task.

Talk to your teacher if you are unsure of how to record usage for the resource you have chosen.

In the space below, ensure that you:

* state what you are measuring
* state the timeframe over which it is being measured
* write the amount of the item used
* include the units that you are using (for example, kilowatt hours for electricity, litres or kilolitres for water, number of items for things like boards of differing sizes).

To be satisfactory the student response must:

• state what is being measured

• clearly show the timeframe that applies to the measurement

• shows amounts of the item/s being measured

• makes clear the unit of measure

• in your professional view, be realistic.

The way the information is organised is not assessed. Students can choose to use one of the templates provided or write the information in the space provided. The response does not have to be in tabular form.

An unsatisfactory response would include the exact data that is included in Appendix 1.

**Appendix 1: Examples of measuring resource usage**

For the student’s response to the task outlined in Part 2, any of the below examples can be used as a method of recording resource usage. The student must use their own information in their answer. An unsatisfactory response would include using the exact data as shown below.

**Water usage**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Water metre readings | Before work starts  7am | Shut down  5.30pm | Daily use (litres) | Overnight use (litres) |
| Monday | 4512684 | 4513164 | 480 | 142 |
| Tuesday | 4513306 | 4513819 | 513 | 139 |
| Wednesday | 4513958 | 4514353 | 395 | 143 |
| Thursday | 4514496 | 4514951 | 455 | 144 |
| Friday | 4515095 | 4515503 | 408 | 140 |

**Materials usage**

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Date | Quantity used | Type |
| Timber | 1 Oct | 3.6 metre length  3.3 metre length  4.2 metre length | 190 x 19 mm  140 x 12 mm  400 x 19 mm |
| MDF | 1 Oct | 1 sheet | 1800 x 1200 x 3mm |
| Drawer runners | 1 Oct | 4 left hand, 4 right hand | 350mm |
| Staples | 1 Oct | 50 | 45mm |
| Glue | 1 Oct | 20mL | PVC |

**Electricity usage**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *From the invoice* | | | *Calculated by Alex* | |
|  | ***Start date*** | ***End date*** | ***kwh used (total)*** | ***Days in period*** | ***kwh per day*** |
| Invoice 1 | 1 Oct | 31 Dec | 4732 | 91 | 52 |
| Invoice 2 | 1 Jan | 31 Mar | 4895 | 89 | 55 |
| Invoice 3 | 1 Apr | 30 Jun | 5760 | 90 | 64 |
| Invoice 4 | 1 Jul | 30 Sept | 6552 | 91 | 72 |

**Sheet material usage**

|  |  |  |
| --- | --- | --- |
| Date: 16 May | Item: Manufactured board | |
| **Board size** | | **Number used** |
| 1200 x 900 | | 39 |
| 1200 x 1200 | | 84 |

**Waste bin level at collection time**

|  |  |
| --- | --- |
| Date | How full |
| 02/04/2019 | Half |
| 09/04/2019 | One third |
| 16/04/2019 | Just over a half |
| 23/04/2019 | Less than a half |
| 30/04/2019 | Half |
| 7/05/2019 | Half |