Furniture Making

Level II

Learning Guide #3

Unit of Competence: Perform Equipment Maintenance

Module Title: Performing Equipment Maintenance

LG Code: IND FMK2 M01 0919 LO2-LG-02

TTLM Code IND FMK2 M01 TTLM 0919V1

LO3: Complete work

Instruction Sheet	Learning Guide #3

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

3.1. Steps in proper storing of tools

3.2. Collect, treat and dispose or recycle waste

3.3. Clean and maintain work area

3.4. Maintenance reporting procedure

3.4.1. Reports on faulty, Malfunctions, faults, and damaged tools

3.4.2. Reports on waste to be treated, disposed or recycled

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- Conduct and complete the work according to OHS requirements
- Treat and dispose or recycle wastes from maintenance activities with OHS
- Report malfunctions, faults, wear or damage tools to the supervisor
- Clean and maintain work area according to OHS

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
4. Accomplish the “Self-check 1, Self-check t 2, Self-check 3 and Self-check 4” **in page -4, 6, 8 and 13** respectively.
5. Do the “LAP test” **in page – 14** (if you are ready).

Information Sheet-1	Cleaning, returning and storing tools according to manufacturer's specifications

Cleaning maintenance is the cleaning of equipment's, components, working tools, hands tool or working gloves and workplace etc. Before taking repairs, during and after repairs is of main importance, but is often not given due consideration.

Cleaning of components is, normally, assisted by kerosene, petrol, carbon-tetra-chloride (CTC) and many other solvents.

Storing tools and equipment

Tools and equipment should be safely stored according to workplace Procedures. Generally, this will mean returning items to their allocated place.

This could include shadow boards, cabinets, cupboards, power tool cases, cutter blocks, drill bit containers, benches or storage racks. Tools and equipment must be put away so that they can be easily located and accessed

Completing basic routine maintenance activities:-

- ☞ Execute regular maintenance activities according to scheduled plan.
- ☞ Maintenance procedures are followed in accordance with the manufacturers Manual and organizational policies.
- ☞ Complex faults or repair requirements outside area of competence are reported for specialist assistance in accordance with organizational procedures.
- ☞ responds to failed or unsafe equipment
- ☞ Maintenance and repair activities are documented and reported according to Organizational policies.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List completing basic routine maintenance activities (4 points)

Note: **Satisfactory rating – 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Collecting, treating and disposing or recycling wastes

The *proper handling* of the things we throw away in a manner that does not harm anyone or anything, be it human, animals or the environment.

Waste: - Unwanted material or substance produced by human activities, which are usually referred to as rubbish, trash, garbage or junk.

Types of Wastes

• Solid

• Liquid

• Gaseous

Proper handling: - includes the collection, transport, processing, recycling or disposal of waste materials produced by human activity in order to reduce their negative effect on the environment.

Waste Reduction: - the prevention of waste material.

3R Reuse, Reduce & Recycle

Methods of Reusing and Reducing

1. Reuse of second-hand products
2. Repairing broken items instead of buying new
3. Designing products to be refillable or reusable
4. Encouraging consumers to avoid using disposable products
5. Designing products that use less material to achieve the same purpose

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List types of Wastes? (2 points)
2. What are the Methods of Reusing and Reducing? (2 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	cleaning and maintaining working area according to OHS

- **Cleaning the work area**

  Safe work practices should be followed at all times. A clean work area is an important part of having a safe work environment. On completion of each job

  The assembly area should be cleaned, this includes the removal of all waste material, the floor cleaned (swept/vacuumed) if necessary and all tools and equipment returned to their allocated storage area.

- **Cleaning up**

  When all the parts are assembled, your work area needs to be cleaned ready for the next job.

  In this section we will look at:

☞ cleaning the work area

☞ cleaning and maintenance of equipment

☞ waste disposal

☞ Storing tools and equipment.

Clean work shop site/area

- ⇨ Always clean the work shop after done/ work.
- ⇨ Separate workshops e.g.:- finishing machine, assembling, main store, and office & class room.
- ⇨ Remove out wastage raw material in the container.
- ⇨ After using equipment & tools clean with sponge, rage, oil, turpentine & greases.

Implement Housekeeping Activities

☞ Regular inspections are carried out in the work area according to workplace procedures and standards.

☞ Areas and amenities are cleaned and maintained in accordance with occupational Health and Safety (OHS) and 5S procedures.

☞ Disposal of waste and dangerous chemicals are checked in accordance with OHS regulations and organizational policies.

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Describe the benefit cleaning and maintaining working area?

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 and 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Maintenance reporting procedures

3.4.1. Reporting malfunctions, faults, wear or damaged tools

On completion of each job it is important that all the equipment you have used be cleaned and checked for serviceability before being stored.

That Equipment is faulty or damaged should be tagged and reported to supervisor or appropriate person. A suitable logging system should be used to identify Equipment or materials that need to be serviced, repaired, removed, replaced or considered unsafe.

Maintenance records should include the following information:

- Name and model of equipment.
- Where equipment is usually kept.
- Unique identifier.
- Each task on the maintenance schedule.
- Frequency of each task.
- What is involved in each task.
- Result of maintenance and any actions resulting from the maintenance.
- Sign off by the person carrying out the maintenance.

Example of inspection sheet for a week of daily inspections of a single piece of workshop equipment

Equipment				Frequency											
Model		Serial number				Location									
Name of inspector		Period of inspections				Any issues found?				Yes		No			
Checklist	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		
Check 1	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Check 2	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Check 3	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
...continue to enter checks required to ensure the equipment is safe to use.	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Signature															
Comments (please date and initial comments)					Actions (please date and initial actions)										

3.4.1. Reports on waste to be treated, disposed or recycled

Waste Disposal and Recycling

1. Be responsible for cleaning up workstations, tools and the shops.
2. Sort waste by category as required using approved containers.
3. Sort recyclable liquids and solids into proper approved storage container.

- Dust collection is best accomplished at the source-at the point of operation of the equipment, if feasible. For many pieces of equipment, well-designed ducts and vacuum hoods can collect most of the dust generated before it even reaches the operator.

- Very fine dust that manages to escape point-of-source collection can be captured from above by general exhaust points located along the ceiling.

- These control technologies are effective for most equipment, excepting machines that commonly produce the very finest dust or large quantities of dust.

- Good housekeeping extends to periodic hand cleaning of your entire facility, as some dust will other Safety Hazards of Woodworking escape from even the best exhaust system and will eventually accumulate on rafters and other out-of-the-way spots. Also, it is extremely

important to inspect and clean your exhaust ventilation system on a regular basis to maintain maximum efficiency.

- Ensure the proper use and storage of flammable materials, such as paints, finishes, adhesives, and solvents.
- Segregate tasks particularly prone to fire and explosion hazards, such as spray painting, welding, and use of powder-actuated nail guns.
- Train employees to recognize, avoid, and correct potentially hazardous conditions and behaviors. Train employees so that they are acquainted with the special equipment and aspects of building design related to dealing with fires and explosions.
- Control ignition sources. This involves using electrical systems rated for the projected use and protected by appropriate circuit breakers, grounding all equipment prone to accumulating static electrical charges, grounding entire buildings against the possibility of lightning strikes, and controlling and banning smoking in and around the workplace..
- Never permit blow-down of accumulated dust with compressed air. Blowing dust with compressed air will create the very type of dust cloud that presents the greatest explosion hazard.
- Provide continuous local exhaust ventilation on all woodworking machines. The local exhaust systems must have a suitable collector. Dust collection systems must be located.
- Segregate combustible and flammable materials such as lumber stock and chemical solvents from each other and from ignition sources.
- Ensure that you use equipment with a hazard classification appropriately rated for your work environment

Weekly Inspection Report

Completed by:		Site:		
Accompanied by:		Date:		Last inspection:
Item	**Comment**	**Area**	**Contractor**	**Action taken**
1. Housekeeping				
2. Storage				
3. PPE				
4. Fire protection				
5. Electrical				
6. Lighting				
7. Machine guards				
8. Material handling				
9. Ventilation				
Copies provided to:				

Self-Check -4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are Maintenance records should include?

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 and 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 3 hours.

Task 1: Conduct and complete the work according to OHS requirements

Task 2: Treat and dispose or recycle wastes from maintenance activities with OHS

Task 3: Report malfunctions, faults, wear or damage tools to the supervisor

Task 4: Clean and maintain work area according to OHS

OTHER REFERENCES

- Internet and hand outs
- Wood working text book
- Woodworkers' Guide to Sharpening, by John English, Fox Chapel Publishing, 2008
- Illustrated Guide to Sharpening, by Thomas Lie-Nielsen, Taunton Press, 2004
- Sharpening, by Nick Engler, Rodale Press, 1994
- The Complete Guide to Sharpening, by Leonard Lee, Taunton Press, 1995
- How To Sharpen Every Blade in Your Woodshop, by Don Geary, Betterway Book machinery component maintenance and repair