The availability of this product is due to the financial support of the National Department of Agriculture and the AgriSETA. Terms and conditions apply.
Before we start...

Dear Learner,

This Learner Guide contains all the information to acquire all the knowledge and skills leading to the unit standard:

<table>
<thead>
<tr>
<th>Title</th>
<th>US No:</th>
<th>NQF Level</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select, use and care for hand tools and basic equipment and infrastructure</td>
<td>116167</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

The full unit standard is attached at the end of this module. Please read the unit standard at your own time. Whilst reading the unit standard, make a note of your questions and aspects that you do not understand, and discuss it with your facilitator.

This unit standard is one of the building blocks in the qualifications listed below. Please mark the qualification you are currently doing:

<table>
<thead>
<tr>
<th>Title</th>
<th>ID Number</th>
<th>NQF Level</th>
<th>Credits</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Certificate in Animal Production</td>
<td>48970</td>
<td>1</td>
<td>120</td>
<td>☐</td>
</tr>
<tr>
<td>National Certificate in Mixed Farming Systems</td>
<td>48971</td>
<td>1</td>
<td>120</td>
<td>☐</td>
</tr>
<tr>
<td>National Certificate in Plant Production</td>
<td>48972</td>
<td>1</td>
<td>120</td>
<td>☐</td>
</tr>
</tbody>
</table>

Please mark the learning program you are enrolled in: Your facilitator should explain the above concepts to you.

You will also be handed a Learner Workbook. This Learner Workbook should be used in conjunction with this Learner Guide. The Learner Workbook contains the activities that you will be expected to do during the course of your study. Please keep the activities that you have completed as part of your Portfolio of Evidence, which will be required during your final assessment.

You will be assessed during the course of your study. This is called **formative assessment**. You will also be assessed on completion of this unit standard. This is called **summative assessment**. Before your assessment, your assessor will discuss the unit standard with you.

Enjoy this learning experience!
How to use this guide …

Throughout this guide, you will come across certain re-occurring “boxes”. These boxes each represent a certain aspect of the learning process, containing information, which would help you with the identification and understanding of these aspects. The following is a list of these boxes and what they represent:

**What does it mean?** Each learning field is characterized by unique terms and definitions – it is important to know and use these terms and definitions correctly. These terms and definitions are highlighted throughout the guide in this manner.

You will be requested to complete activities, which could be group activities, or individual activities. Please remember to complete the activities, as the facilitator will assess it and these will become part of your portfolio of evidence. Activities, whether group or individual activities, will be described in this box.

**Examples** of certain concepts or principles to help you contextualise them easier, will be shown in this box.

**How am I doing?** The following box indicates a summary of concepts that we have covered, and offers you an opportunity to ask questions to your facilitator if you are still feeling unsure of the concepts listed.

This guide is divided into sessions and each session relates to a specific outcome. You will participate in a number of learning activities that includes formal lectures / presentations, outings, classroom exercises and discussions.

The classroom feedback session on these activities will form part of the formative assessment. At the end of some sessions, a written questionnaire that tests embedded knowledge must be completed and handed to the facilitator as part of your assessment.

**My Notes …**

You can use this box to jot down questions you might have, words that you do not understand, instructions given by the facilitator or explanations given by the facilitator or any other remarks that will help you to understand the work better.
What are we going to learn?

What will I be able to do? …........................................................................................................................................................................ 5

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SAQA unit standard
What will I be able to do?

When you have achieved this unit standard, you will:

♡ Select hand tools and basic equipment that are appropriate to a specific agricultural task.

♡ Operate, care for and store basic tools and equipment in a safe and responsible manner.

♡ Be well positioned to extend their learning and practice into the use of more complex tools and equipment in other areas of agriculture.

♡ Be fully conversant with basic safety procedures and practices as well as good practices regarding the use and storage of basic tools and equipment.

♡ Be competent in the application of agricultural equipment, technology, implements and infrastructure in primary agriculture.

♡ Have instilled a culture of maintenance and care for both the environment as well as towards farming infrastructure and operations.

Learning Outcomes

When you have achieved this unit standard, you will demonstrate an understanding of:

♡ Basic safety procedures related to hand tools and basic equipment.

♡ Basic identification of wear and tear on tools and equipment.

♡ Understand the purpose and need for the study of tools.

♡ The implications of the misuse, abuse and failure to maintain tools on the efficiency, effectiveness of the tool.

♡ The procedure to be followed regarding the reporting of problems related to tools and their status.

♡ How hand tools and basic equipment work (in order to recognise malfunctions and to perform elementary repairs and maintenance).

♡ The workings of the Occupational Heath and Safety Act as it apply to the specific usage of tools.

♡ The implications of the misuse, abuse and failure to maintain tools on the safety of the operator and/or users.

♡ The application and use of the specific tools.
Learning Assumed to be in Place

No learning is assumed to be in place.

Introduction – Hand tools on a farm

Hand tools are the most common and frequently neglected items used on a farm. If damaged hand tools are used, or the tools are used incorrectly, productivity and progress will be hampered and injury is likely to occur.

This learner guide deals with a wide range of tools, guidance to the tools most useful on farm, their use maintenance, and storage.

Below is an indication of the typical tools and equipment that you will find on a farms irrigation section:
In this section we investigate the uses of hand tools. Tasks that will be looked at include:

- Soil preparation and planting.
- Fertilizing and applying agro-chemical pesticides and herbicides.
- Plant manipulation and pruning.
- Harvesting.
- Weeding.
- Maintaining structures and irrigation systems.
- Fences and trellis systems.

We will also look at safe and correct use, maintenance and storage of hand tools, including:

- Picks.
- Forks.
- Hand operated sprayers.
- Simple power tools.
- Shovels and spades.
- Hoes.
- Small hand tools.
- Harvest tools.
1.1 The uses of hand tools

In this section a number of typical on-farm tasks are discussed and the hand tools that could be used are mentioned. In the next section the use of these tools are discussed.

- **Soil preparation and planting**
  During soil preparation and crop planting we might use the following tools:
  - Level
  - Spade
  - Rake
  - Pick axe
  - Shovel

- **Weeding**
  During weeding we might use the following tools:
  - Hoe
  - Spade
  - Garden fork
  - Weeding prong
  - Rake
  - Shovel
  - Hand fork
  - Panga

- **Fertilization and application of pesticides**
  During fertilization and the application of pesticides we might use the following tools:
  - Agro-chemical backpack or knapsack
  - Spray pump

- **Fences and trellis systems**
  During the erection of fences and trellis systems we might use the following tools:
  - Spirit-level
  - Mattocks
  - Shovel
  - Pliers
  - Hammers
  - Pickaxe
  - Spade
  - Rake
  - Wire cutters
  - Panga
  - Hammers
Select, use and care for hand tools and basic equipment and infrastructure

Plant manipulation and pruning
During plant manipulation and pruning we might use the following tools:
- Saw
- Binding tape
- Paint brushes
- Secateurs
- Twine

Harvesting
During harvesting we might use the following tools:
- Harvesting snips
- Secateurs
- Picking baskets
- Harvest knives
- Picking crates
- Picking bins

Maintaining structures and irrigation systems
During maintenance of irrigation systems we might use the following tools:
- Hammers
- Spanners
- Teflon tape
- Knives/Scissors
- Pipe wrench
- Pliers
- Binding wire
- Duct tape
- Connectors and Couplers
- Shifting spanner

Please complete Activity 1 in your learner workbook

My Notes ...

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1.2 The safe and correct use of specific hand tools and their function

The table below is a summary of the description and function of selected tools that you may encounter on a farm.

<table>
<thead>
<tr>
<th>Hand Tool</th>
<th>How is it used?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spirit-levels</strong></td>
<td></td>
</tr>
<tr>
<td>How is it used?</td>
<td>♦ Use it against smooth surfaces such as walls or while building to ensure that surfaces are straight and corners are at a 90° angle.</td>
</tr>
<tr>
<td><strong>Pick axes and mattocks</strong></td>
<td></td>
</tr>
</tbody>
</table>
| How is it used?     |  ♦ Picks and mattocks are used to work soil that is hard, rocky or root filled.  
        ♦ A pick has a pointed tip on one end and a chisel-like tip on the other.  
        ♦ Mattocks are used for loosening soil that is root filled.  
        ♦ Mattocks have an axe-head on one side and a flat hoe like head on the other.                                                                 |
| **Spades**          |                                                                                                                                                                                                               |
| How is it used?     |  ♦ Spades are useful for cutting and digging heavy soil, digging straight-sided, flat-bottomed trenches, or removing a layer of sod.                                                                           |
### Shovels

**Hand Tool**

**How is it used?**
- Shovels are used for digging and lifting loose soil or other substances.
- Useful tools to be used if you have a large amount of lightweight material to move is a wide scoop shovel.

### Rakes

**Hand Tool**

**How is it used?**
- There are two main types of rake - a steel rake and a plastics or rubber lawn rake.
- Steel garden rakes are used to level and prepare seedbeds for sowing. They are not meant for use in lawned areas. Garden rakes damage the turf as their tines become plugged with debris.
- Lawn rakes handle lawn debris such as grass clippings and leaves. They are best used with a drawn sweeping motion like you would draw a broom.

### Hoes

**Hand Tool**

**How is it used?**
- Hoes are used for cultivation and weeding.
- There are many types of hoe available.
- Triangular shaped hoes are good for breaking into hardened soil, weeding, and cultivation in tight spots.
- The blade of the hoe rests on the ground and is moved back and forth to remove weeds just below the soil surface.

### Garden forks and pitch forks

**Hand Tool**

**How is it used?**
- Garden forks have thick tines and are used for turning soil and breaking up soil clods.
- Pitchforks have longer tines and are useful for moving light, loose material e.g. Hay or Lucerne.

### Panga or machete

**Hand Tool**

**How is it used?**
- Panga’s or machetes are used to cut down stubborn weeds, reeds, tree saplings and can also be used to harvest grain.
<table>
<thead>
<tr>
<th>Hand Tool</th>
<th>How is it used?</th>
</tr>
</thead>
</table>
| Pesticide backpack sprayers and hand held spray pumps | ♦ Pesticide applicators are used to apply to small areas.  
♦ The applicators can also be used to apply foliar fertilisers.  
♦ A number of specialised low and ultra low volume applicators are also available. |
| Hammers | ♦ Hammers are used nail nails or hooks into walls or wood (small hammers).  
♦ Rubber hammers are used to level tiles.  
♦ If you want to break down walls and concrete structures you need a sledge hammers.  
♦ It is essential to use the correct hammer for the specific job.  
♦ Small carpentry hammers are provided with an end that can remove nails. The use of the claw to remove nails is however discouraged purpose because it often damages or breaks the head and can cause injury. It is better to use a purpose made claw-like nail remover, or specialised pliers. |
| Saws | ♦ Generally handsaws are used to saw through wood.  
♦ There are specialised saws available that are operated by two people that were designed for cutting down trees.  
♦ Bow saws are used to trim trees or cut down branches. |
| Secateurs | ♦ Secateurs are used to cut through plant shoots during summer or winter pruning or during plant manipulation.  
♦ Different designs and strengths of secateurs are available. The different designs are designed to cut through branches and shoots of different thickness. |
### Paintbrushes

**Hand Tool**

**How is it used?**
- Paintbrushes are used to apply paint to walls or oil to moving machinery parts.
- Different widths and grades of paintbrushes are available, designed to be used for specific painting purposes and types of paint.
- Paintbrushes are often used to apply herbicides to cut surfaces of invader species.

### Harvesting snips and knives

**Hand Tool**

**How is it used?**
- Used to pick fruit from trees and vines during harvest.

### Pliers

**Hand Tool**

**How is it used?**
- Pliers are used for various purposes, including:
  - Tightening wire.
  - Fixing wire.
  - Gripping bolts to tighten with a spanner.
  - Selected pliers are equipped with wire stripping edges and can strip the outer insulating layer off electrical cord.

### Wire cutters

**Hand Tool**

**How is it used?**
- Cutting wire and stripping outer coatings off electrical cable.
<table>
<thead>
<tr>
<th>Hand Tool</th>
<th>How is it used?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spanners</strong></td>
<td>✦ Various bolts can be fastened or loosened using the spanner of the correct size.</td>
</tr>
<tr>
<td>Spanners sizes 6-24</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Spanners" /></td>
<td></td>
</tr>
<tr>
<td><strong>Pipe wrench</strong></td>
<td>✦ Used to tighten and loosen pipe couplings.</td>
</tr>
<tr>
<td></td>
<td>✦ It is also used to grip round edges to enable other turning/loosening/tightening actions.</td>
</tr>
<tr>
<td><img src="image" alt="Pipe wrench" /></td>
<td></td>
</tr>
<tr>
<td><strong>Screw drivers</strong></td>
<td>✦ Tighten or loosen screws of different sizes.</td>
</tr>
<tr>
<td></td>
<td>✦ Flat ended screwdrivers are used to tighten or loosen flat head screws, whilst Philips screwdrivers (“star”) are used for star head screws.</td>
</tr>
<tr>
<td></td>
<td>✦ Some screwdrivers are magnetic and will hold the screw to the tip of the screwdriver.</td>
</tr>
<tr>
<td><img src="image" alt="Screw drivers" /></td>
<td></td>
</tr>
<tr>
<td><strong>Shifting spanner</strong></td>
<td>✦ Has a similar function to regular spanners but provides option of using only on bolts of varying sizes. This means you do not have to transport a range of sizes.</td>
</tr>
<tr>
<td><img src="image" alt="Shifting spanner" /></td>
<td></td>
</tr>
</tbody>
</table>
1.3 Correct and safe handling and maintenance of hand tools

All tools can be handled correctly which enhances the functionality and safety of tools. Incorrect use impairs functionality, is detrimental to the tool and may be dangerous to the user and or other people.

Shovels, Spades and Forks

The basic use of these tools requires a lifting action. The general principles involved in safe lifting and handling are:

- Think of the ergonomics of the situation and plan what you are going to do first.
- Be aware of your own and other people's physical limitations.
- Get help to move heavy objects.
- If you think you cannot cope with a situation, do not even try.
- Do not bend or twist your back, keep it as straight as possible.
- Make use of your muscles (arms, legs and thighs) to lift, not your back.
- Make sure you grip the object properly, not just with fingertips.

When using shovels and spades take the following into account:

- Check that the handles are smooth and free from splinters.
- Check that the blade or tines are not cracked.
- When digging or shovelling avoid back strain by using your leg muscles as much as possible, e.g. push the shovel handle against your thigh muscle, keeping your back straight.
- Make sure that there is at least two handle-lengths' distance between you and anybody else, thereby avoiding striking them with the tool or materials.
- Never leave a spade, fork or shovel upright as others may trip over it. Always lay it flat with the blade or tines pointing downwards.
- Carry the tools at their point of balance, by your side and with the blade or tines pointing forward.
- Do not dig with a shovel - use a spade.
- Position yourself in such a way that you avoid twisting movements.
Keep you back straight. Squat down, and then lift the load using your leg muscles.

Wear protective boots should especially when digging in hard ground.

- To dig with a spade, stand up straight holding the handle with both hands.
- Using whichever foot suits you, place it on the tread of the spade and push the blade into the ground.
- Cut the soil into square lumps, which are as large as possible, but comfortable to move.
- Hold the spade with one hand on the handle and the other halfway down the shaft.
- Placing the blade behind the lump you have cut, lever it and then lift it clear.

Shovels should be held by the handle with one hand and with the other hand halfway along the shaft.

It is very important that a proper stance is used while shovelling.

Ensure you have a sound footing, for example if working on a bank cut a small step for each foot.

When loading the shovel do not fill it beyond your ability to lift and control it comfortably.

Turning while holding a heavy load on the end of a shovel is not good for your back.

It is often easier to work as a team; one person breaking the material up while the other shovels it away.

When using forks take the following also into account:

- Work with a piece of soil well within the capacity of the fork. Individual tines can bend fairly easily.
- It is very often only necessary to lift the ground in order to loosen it in stead of turning it.
- Make sure that soil is not too wet or too dry to cultivate.
- Most of the precautions and principles of spades apply to the use of forks.
**Picks and Mattocks**

Although innocent looking tools, a pick or a mattock can inflict serious injury. The general principles involved in safe use of picks and mattock are summarised below:

- **It is imperative that anyone using a pick or mattock is fully aware of how to use the tool and the potential dangers to both themselves and those around them!**
- Picks and Mattocks are constructed in a similar fashion with a wooden shaft and a steel head.
- The two are distinguished by the shape of the head and type of steel used during manufacture.
- Picks have a hardened steel head that gives them the strength so that they can be used to break up hard and stony soil.
- They can also be used to lever rocks out of the ground.
- Mattock heads are made of much softer steel than a pick head, and so will damage if used on hard ground and bend if used to lever things.

**Technique for use:**

- The art to using a mattock, as with any tool you lift is to let gravity do the work for you.
- Hold the tool with one hand at the end of the shaft and your other hand near the tool head.
- If using a pick or the cutting end of a mattock lift the tool over your shoulder until the hand at the head end of the shaft is alongside your own head.
- Bring the tool down in front of you by simply guiding it and letting it fall under gravity.
- As the tool descends slide your far hand nearest the head along the shaft back towards your other hand.
- As the tool nears the ground, bend over with it.
- **Do not** use your own weight or strength while bringing the tool down, as you will only prematurely tire yourself and possibly damage the tool itself.
- With practice it becomes possible to place the blade very accurately.
- The flat end of a mattock is not as strong as a pick or the cutting end of a mattock, and if swung from head height will be damaged.
Select, use and care for hand tools and basic equipment and infrastructure

Primary Agriculture  NQF Level 1  Unit Standard No: 116167

It should rather be used with half swings, holding the shaft with one hand at the end and the other halfway along the shaft. This technique should also be used with picks and cutting mattocks if the ground is very hard or stony. This will prevent the tool bouncing back and causing injury. If a large lump of stone is encountered it should be dug round to loosen it, and then prised out with a bar instead of trying to smash it with a pick.

- Ensure that the blade is secure on the handle.
- The handle should extend beyond the blade by at least 3 cm.
- Wear a hardhat and steel toecap boots.
- Wear safety goggles if working in stony ground.
- Ensure a safe working distance of at least 5 metres is maintained.
- Keep your back straight when using these tools.
- **Do not** use the handle to pack material around fence posts. This causes damage to the end of the handle.
- To tighten a loose blade, strike the blade end of the handle on the ground several times.
- To release a blade, hold the blade in your hand and hit the narrow end of the handle on the ground until the blade is worked free.
- Keep the ground around your feet clear of loose material to avoid tripping.
- Carry the tool in two separate pieces.
- Check that shafts are smooth.
- Check that the shaft fits snugly in the socket without rocking and that it stands slightly proud of the tool head.
- When removing the head from the shaft, make sure that you tap the bottom of the shaft on a firm surface and that you are positioned so that the shaft cannot damage you should it come free unexpectedly.
**Hammers**

The general principles involved in safe handling of hammers are:

- When replacing hammer handles, make sure they fit the hammerhead.
- Wedge the handle securely in the head and make sure that it is free of splinters and cracks.
- Never strike hardened steel surfaces with a steel hammer.
- Use a soft metal hammer or one with a plastics or wooden head when striking steel surfaces.
- Always wear safety glasses to protect your eyes from flying objects.
- Inspect sledgehammers carefully before each use.
- Use the right type of hammer for the specific job.

**Spanners**

The general principles involved in safe handling of spanners are:

- Use the correct size for the correct sized bolt.
- Remember-clockwise turning fastens; while anti-clockwise turning loosens. Be aware of anti clockwise threads like gas cylinder fittings.
- Never over-tighten bolts as will strip the thread on the bolts.
- Prevent rusting.
- Store in designated areas.
- Never store above head-height.

**Pliers**

The general principles involved in safe handling of pliers are:

- Never substitute pliers for another tool such as a wrench or spanner as it may cause the bolt heads to become chewed.
- Pliers cannot grip nuts and bolts securely and will slip.
- If working with electricity use pliers with hand insulated grips and ensure power supply is turned off.
- Make sure the protective coverings are free from cracks or holes.
- Use a vice when cutting wire with the pliers.
- Hold the open end of the wire with your free hand to prevent the cut off piece from flying through the air.
- If a vice is not available, use your foot to secure the wire and always use safety glasses.
Pipe wrench

The general principles involved in safe handling of wrenches are:

- Open the wrench before placing it on the item to be held or turned and then close it to size.
- Regularly oil or grease the wheel allowing opening and closing.
- Prevent rusting.
- Store in designated areas.
- Never store above head-height.

Shifting spanner

The general principles involved in safe handling are:

- Open the spanner before placing it on the item to be held or turned and then close it to size.
- Regularly oil or grease the wheel allowing opening and closing.
- Prevent rusting.
- Store in designated areas.
- Never store above head-height.

Wire cutters

The general principles involved in safe handling are:

- Place the wire between the cutting edges where it has to be cut and close the tool to cut through the wire.
- Prevent rusting.
- Store in designated areas.
- Never store above head-height.

Hand spray pumps and backpacks for Agro-chemical application

The general principles involved in safe handling are:

The first step in applying a product is to determine what type of application is required. Systemic products can hit part of the target and be translocated to have their effects. Thus, larger droplets and lower operating pressures can be used. For contact products, good coverage is required. Thus, smaller droplets are required to ensure better coverage.
The factors affecting the applications efficiency are:

- Operating pressure and droplet size.
- Nozzle type.
- Application conditions.
- Pressure and droplet size.
- Type of equipment.
- Operator skill.

These factors are discussed below:

- Higher pressures reduce droplet size and can lead to increased drift.
- Smaller droplets provide better coverage and therefore are good for contact pesticides.
- Droplet size is measured in microns - 1 micron = 0.001 mm.
- Droplets less than 200 micron (0.2 mm) are considered susceptible to drift.
- Backpack lever-operated sprayers operate at around 15 psi (1 bar).
- Pressure control valves are now available to help maintain a constant spray pressure and droplet size. This ensures more uniform pressure and thus more uniform application.
- Controlled droplet applicators (CDA) can apply in the range of 50-300 micrometers.
- Increasing pressure is not a good way of increasing the volume output. To double output volume you require four times as much pressure.

Application conditions:

The best time to apply chemicals is during cool windless periods. The preferred time of application are is early mornings and late afternoons. Note that some products require sunlight for their action - check the label for specific instructions. The height of the nozzle(s) should be kept 0.3 - 0.5 m above the target.

Nozzle types:

Cone nozzles produce finer droplets and are therefore usually used for insecticides and fungicides, whilst flat fan nozzles produce a coarser droplet and are preferred for herbicide application.

Be aware of:

- Calibration - how much water applied per area and how much product is required and applied.
Toxicity - need to be aware of product toxicity and safe use practices - lower personal and environmental risk by using low toxicity products safely.

The use of personal protective equipment (e.g., gloves, mask, overalls, goggles, etc.).

Ensure that you have been trained to apply pesticides before you apply any pesticide.

<table>
<thead>
<tr>
<th>Concept</th>
<th>I understand this concept</th>
<th>Questions that I still would like to ask</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select and use appropriate equipment and implements for a specific agricultural task.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The appropriate hand tool or equipment is selected to perform a specified task. The on-farm tasks that require hand tools: • Soil preparation and planting. • Weeding. • Fertilizing and applying agro-chemical pesticides and herbicides. • Fences and trellis systems. • Plant manipulation and pruning. • Harvesting. • Maintaining structures and irrigation systems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hand tool or basic piece of equipment is used correctly. Safe and correct handling and maintenance of hand tools. • Picks. • Shovels and spades. • Forks. • Hoes. • Hand operated sprayers. • Small hand tools. • Simple power tools. • Harvest tools.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The learner explains why the hand tool or basic piece of equipment was selected.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Session 2

Problems related to the use of hand tools

After completing this session, you should be able to:
SO 2: Recognise and act on problems related to the use of hand tools and basic equipment in an agricultural

In this session we explore possible problems and malfunctions that might be experienced during the use of hand tools and explore how this may be remedied. We will further discuss the importance of reporting problems that with tools and equipment as well as the correct procedure to follow to report a problem or malfunction.

2.1 Problems and malfunctions of hand tools

All tools require regular maintenance to work properly. Clean all tools after each use with water and treat with a penetrating oil to prevent rust. Tools that require a sharp edge must be sharpened regularly as sharp tools are safer and more efficient to use.

- Various sharpening methods are used depending upon the tool. It is important to become familiar with the methods relevant to the tools you use.
- Check tools regularly for loose nuts and screws and tighten as needed.
- Sand rough handles and repair cracks as soon as they are noticed to prevent injury.
- Store tools in a dry area out of the elements. Hanging tools against a wall is an ideal way to organize the store tools in a shed.
2.2 Reporting problems and defective tools

Broken or damaged tools can cause injury or accidents in the workplace. The quicker problems are reported, the quicker the tool can be fixed or replaced and the less the risk or injury.

Broken or incomplete tools must not be used but placed in a special place for it to repaired or adapted. This will prevent injury and will enhance the life of the tool. Persons with proper training and skill should repair tools. Preventative maintenance like fastening loose nuts or shafts will greatly reduce the need for large-scale repairs.

2.3 Reporting problems and malfunctioning of tools

Every farm has its own set of procedures and systems to deal with the organizing, issuing and controlling tool stock. It is important that you find out who is responsible for different aspect regarding tools and equipment on the farm where you work. Also you should know who you have to report problems or defects to. Do not attempt to fix, maintain or use a tool if you have not been trained to do so.

It is essential that problems and malfunctions be immediately reported to the correct person to prevent risk of injury through the use of the tools. It is important to respect the roles of the people placed in charge of organizing and maintaining tools because this also protects your safety. Supervisors need to be trained to check that labourers use tools in a proper way. Even when using a tool correctly a certain way of handling the tool will cause premature wear or damage to it. Master artisans always take extremely good care of their tools in using, storing and maintaining it.

Tools should ideally be allocated to specific persons who then have the responsibility of looking after it. If tools are for ‘general’ use they are often left in the field or working place and a high percentage of replacement results from it. If tools are allocated to a specific person and marked as such control is very easier.
Recognise and act on problems related to the use of hand tools and basic equipment in an agricultural environment.

Problems and malfunctions that you might experience with hand tools and how to remedy these:
- Tools becoming blunt.
- Sprayers becoming blocked.
- Screws and bolts becoming loose.

Why it is important to report problems that you might experience with tools and equipment.

The correct on farm procedure to follow when reporting a problem or malfunction on tools to your supervisor or team leader.
3 Routine maintenance tasks

In this session we explore the following concepts:

In this session we explore the concept of “routine maintenance” and its importance and look at a number of specific routine maintenance tasks:

- Unblocking pipes and nozzles.
- Sharpening blunt tools.
- Cleaning nozzles on sprayers.
- Checking water and oil levels in machinery.
- Checking and maintaining cables and plugs.

Let’s discuss a routine maintenance schedule. Reporting faults and problems as part of the routine maintenance schedule.

3.1 The importance of routine maintenance

Routine maintenance tasks refer to on-going, scheduled tasks that are performed in order to keep hand tools and basic equipment functioning properly. It could include tasks such as unblocking pipes and nozzles, sharpening blunt tools, cleaning nozzles on sprayers, checking water and oil levels in machinery, cables and plugs.

Tools have always been indispensable aids, and a good set of hand tools is essential on any farm. Unfortunately, tools also contribute to countless injuries when used incorrectly.
What follows are some tips on routine maintenance:

- Use the correct tool for the job.
- Keep tools in good condition. Handles should be tight and free from defect.
- Cutting tools should be kept sharp.
- Wedges and punches should be free from "mushroom heads".
- Use and maintain power tools according to their operator instructions.
- Make sure power tools are properly grounded or are double insulated.
- Switch off and unplug power tools before changing blades or servicing and repairing.
- Wear clothing that is free of strings or loose ends that could catch.
- Wear appropriate personal protective equipment (PPE), such as glasses, goggles, dust masks, face shields, hearing protection, etc.
- Keep bystanders at a safe distance.
- Keep all guards and shields in place.
- Unplug and store tools after use.
- Consider keeping power tools locked up to prevent unauthorised use.

### Routine maintenance tasks

What follows is a check list for routine maintenance. Complete a visual inspection:

<table>
<thead>
<tr>
<th>Tool:</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are tools in safe condition?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Are instruction manuals available?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Are power tools properly grounded?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are guards and shields in place?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is Personal Protective Equipment available?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Are tools properly stored?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
If necessary:

- Tighten nuts and bolts.
- Smooth off splinters and sharp points.
- Tighten shafts.
- Oil exposed steel e.g. spades, shovels and forks.
- Unblock pipes and nozzles.
- Sharpen blunt tools.
- Clean nozzles on spray sprayers.
- Check water and oil levels in machinery.
- Check and maintain cables and plugs.

### Scheduling routine maintenance

#### Reporting faults and problems:

Every farm has a different maintenance schedule and it is important that you are familiar with the schedule implemented on the farm where you work.

There will usually be a routine schedule for particular tools that states how often maintenance checks have to be performed. These will also specify the checks that have to be performed. Some tools may require daily checks and maintenance after use. Other tools, such as power tools, usually must be checked once in 6 months or so. More complicated power tools would need to be serviced on a regular interval; refer to the operation manual.

A maintenance schedule assigns a specific date to specific maintenance tasks. It states what has to be checked and will require that the assigned person signs off the document assuring that the checks were done. If faults are found, the tool must be sent for maintenance and the assigned person that fixes the tool has to report on exactly what was done and when it was completed.

An example of a checklist is given below:

<table>
<thead>
<tr>
<th>Date</th>
<th>Tool</th>
<th>Maintenance check points</th>
<th>Signature</th>
<th>Maintenance required</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-10</td>
<td>Spades</td>
<td>Handle</td>
<td>Peter</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shaft</td>
<td>Peter</td>
<td>Splinters shaved off</td>
<td>Manie</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blade</td>
<td>Peter</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
Please complete Activity 4 in your learner workbook

My Notes ...

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<th>Questions that I still would like to ask</th>
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</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>Routine maintenance tasks:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Unblocking pipes and nozzles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sharpening blunt tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cleaning nozzles on sprayers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Checking water and oil levels in machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Checking and maintaining cables and plugs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Routine maintenance schedules.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting faults and problems as part of the routine maintenance schedule.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In this session we explore the following concepts:

- Cleaning prior to storage.
- Correct, safe and secure storage of hand tools and equipment.
- The purpose of special storage requirements.

4.1 Appropriate use, handling and storage of tools

Try these six simple steps to a more organised tool storage area.

**Step 1: Clear out the junk**

Sort out and discard all the junk that you do not need: keep only what you use and remove everything else that is still useful, but might belong in a different storage area. Throw away anything that is broken and just taking up space. (Remember to discuss this with the foreman or farm manager first).

A stain-resistant floor and considerable storage in the form of cabinets, hooks and shelving racks (for hand tools and equipment) – suspended from painted walls – will transform a disorganised space into a neat and tidy one.
Step 2 : Paint the walls and floors

Take measurements and draw a floor plan to help you visualise what will fit and where it can be placed. Don't forget to consider the walls for storage.

This is also the ideal chance to paint the walls, especially if they are currently exposed plaster or brick walls. Use lighter colours in smaller spaces to make these appear bigger.

You may want to consider painting the floor before you start installing storage systems and moving everything back into the store. Preferably use an epoxy paint that is designed for floors.

Get started

1. Before painting your floor, clean it thoroughly and use a degreaser to remove any grease or oily residue that could prevent the paint from adhering. Clean the floor thoroughly with the cleaning solution provided, or use a sugar-soap solution or to remove grease stains and dirt. Wash the floor with water and let it dry.

2. Mix the two parts of the epoxy kit. Allow it to stand for the required amount of time before you apply it.

3. Use a medium pile roller and broom-handle attachment to apply the epoxy floor coat. First paint along the sides of the garage, leaving a channel down the middle of the floor.

4. Paint the channel last. Follow the recommended drying times on the pack. It is usually recommended that you wait between 16 and 24 hours for it to dry before you walk on the newly painted floor, but it's a good idea to wait 48 hours or longer before you move vehicles or large equipment onto the surface.

Step 3 : Storing smaller and larger items

Many storerooms have untapped potential that can be utilised to make room for more storage. Shelving is vital – inexpensive shelves can be purchased from most co-operatives or more expensive custom-designed cabinets can be installed. Keeping things in containers not only lets you get them off the workbench or the floor but also keeps them clean and dust free. Always label opaque containers so you know what is inside them.

Allocate space for hand tools separately from other equipment such as tractors, spray pumps, mowers and weed trimmers. Decide which items you need to use often, such as hand tools, and store these near the door.
**Step 4 : Organise your work area**

Use transparent jars to store smaller items so that you can easily see what they contain.

**Step 5 : Safety proof your expensive tools such as secateurs, pliers, etc.**

Install a lockable latch on a cupboard door to keep expensive items under lock and key.

**Extra storage in the roof**

Add a storage shelf with pulleys to hide unsightly boxes. A hanging shelf, with pulleys, that can be lowered easily is ideal for accessing storage boxes or crates that may be needed more often but take up valuable space.

**Lighting**

Mount spotlights on the rafters above the work surfaces to ensure that the area has adequate light. A standard store light is likely to cast shadows over the work area. These lights, which provide effective additional task lighting, are relatively inexpensive and easy to install.

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Please complete Activity 5 in your learner workbook

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<table>
<thead>
<tr>
<th>Concept</th>
<th>I understand this concept</th>
<th>Questions that I still would like to ask</th>
</tr>
</thead>
<tbody>
<tr>
<td>Store equipment correctly and safely.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning prior to storage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage hand tools and equipment correctly, safely and securely.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The purpose of special storage requirements.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In this session we explore the following concepts:

- Explore the meaning of “health and safety” in relation to the use of hand tools, preventing injury and equipment damage.

### 5.1 Health and safety in relation to the use of hand tools

- **Preventing injury**
  
  Tools can cause injury to the person working with the tool and to people in the immediate vicinity where the tool is used. While using tools we must ensure that we protect our own health and safety and that we also consider our co-workers. We can limit the risk of injury by working correctly and safely with the tool.

- **Preventing equipment damage**
  
  By limiting damage to the equipment, we reduce the risk of injury to our co-workers and ourselves. An example is a buckled or dented hammer surface that could cause a nail to splinter and cause injury. Even using a spade with handle not well fastened will cause damage that is more expensive to repair. A simple tightening of nuts and bolts will prevent replacement of parts.
5.2 The appropriate protective clothing to use and wear

- **Protective clothing for general hand tools**

  Hand tools are often used without any protective clothing. Spades and forks do not normally require protective clothing. A common exception is when working in muddy conditions when rubber boots must be worn. When using picks or hammers on material like rock, protective eyewear is recommended as rocks splinters can damage eyes. When working with cement or rough material like rocks or barbed wire leather gloves must be worn.

  When using power tools like angle grinders, eye protection should be mandatory. Welding equipment has its specialised headgear to protect eyes from the very intense light during the operation. A leather apron must also be worn during welding. The farm manager should be aware of the safety needs of his/her workers and respond to that before it develops into a problem.

- **Handling Chemicals**

  Chemicals on the farm are generally dangerous and protective clothing and equipment for it is necessary according to its hazard level. Refer to the operating manual for specific and appropriate safety gear. The following should be followed in general:

  **When mixing with pesticides**

<table>
<thead>
<tr>
<th>WEAR:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>eye protection</td>
</tr>
<tr>
<td></td>
<td>rubber gloves</td>
</tr>
<tr>
<td></td>
<td>rubber boots</td>
</tr>
</tbody>
</table>
When applying pesticides

<table>
<thead>
<tr>
<th>WEAR:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mouth protection</td>
</tr>
<tr>
<td></td>
<td>rubber gloves</td>
</tr>
<tr>
<td></td>
<td>rubber boots</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STORAGE</th>
<th>ADVICE</th>
<th>ENVIRONMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep locked away so that children and animals cannot reach it</td>
<td>Wash after use</td>
<td>Dangerous/harmful to animals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dangerous/harmful to fish — do not contaminate rivers and dams</td>
</tr>
</tbody>
</table>

- **DO NOT** store food in empty pesticide containers
- **DO NOT** store pesticide in food containers
- **RINSE** empty pesticide containers and **DESTROY** them
Follow these steps to wash your hands after working with pesticides or any other chemical:

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet hands thoroughly with warm water.</td>
<td>Apply antibacterial soap generously.</td>
<td>Scrub under nails with a clean nailbrush.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Step 5</td>
<td>Step 6</td>
</tr>
<tr>
<td>Rub hands vigorously for at least 20 seconds.</td>
<td>Rinse hands thoroughly with warm water.</td>
<td>Dry hands using a single-use towel.</td>
</tr>
</tbody>
</table>

**Protective equipment that must be available**

These include:

- Overalls.
- Face shields.
- Rubber boots.
- Rubber gloves or leather gloves.
- Goggles.
5.3 Injuries that could be sustained due to incorrect use of tools

Incorrect use of hand tools and equipment could lead to multiple injuries and exposure to the risk of poisoning. Incorrect storage of tools could also lead to injuries where tools may fall down for example. As was mentioned before, a tool in a bad condition may be very dangerous and may cause serious injuries.

Common sense and general care will go a long way to prevent injuries to yourself and to your fellow workers. Even death is a very real possibility when injuries with certain tools occur!

Examples of common injuries from tools include:

- Grazes.
- Cuts and bruises.
- Burns (heat or chemical).
- Loss of fingers and toes.
- Loss of limbs.
- Sustaining blindness.
- Becoming deaf.
- Tetanus.
- Infection.
- Loss of consciousness.

The farm must have an up to date first aid kit/s at strategic locations and an effective system of handling injuries. This will minimise the effect of an injury. Injuries must be investigated and the causes determined as far as possible. Measures must be put in place to prevent recurring accidents.
5.4 Damage to infrastructure and crops due to incorrect use of tools and equipment

The incorrect use of tools and equipment, and faulty equipment can lead to damage of crops, infrastructure, co-workers and self.

- Applying incorrect pesticides or applying it in an incorrect manner can damage or destroy crops.
- Using tools in poor condition very often lead to damage of crops or infrastructure, e.g. a loose hammerhead may cause serious injury and/or damage.
- Sharp tools easily damage fruit or crops when used incorrectly.
- Swinging instruments often lob off large portions of growth from a plant and can cause its death or lead to cross contamination.
- Structural damage to trellis systems often leads to injury to people and mechanized equipment such as vehicles and tractors.
- Damage to fences can cause animals to break out of camps.
- Damage to water pipes and irrigation lines pose a risk to the survival of the crop, animals and people on the farm and also add to immense cost for repairs.
- Damage to electrical lines and equipment pose an enormous risk to people and animals. Electricity is dangerous and can lead to severe burns, injury and death. Electrical faults affect the entire business because the electricity has to be switched off everywhere and nothing that depends on electricity can work in this time.

Please complete Activity 6 and 7 in your learner workbook

My Notes ...

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<table>
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<th>I understand this concept</th>
<th>Questions that I still would like to ask</th>
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<tbody>
<tr>
<td>What health and safety means in context to the use of hand tools: • preventing injury to oneself and others • preventing damage to the equipment.</td>
<td></td>
<td></td>
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<tr>
<td>Safety measures during the use of hand tools and equipment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety measures as per manufacturer’s instruction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The appropriate protective clothing to use and wear.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What possible injuries could one sustain if you did not handle tools and equipment correctly and properly?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damage that one could cause to the infrastructure and crop if one did not use tools and equipment correctly.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Bibliography

- **Books:**
  
  People’s farming workbook, 2nd edition
  
  Sharpening Small Tools, Ian Bradley, 3rd edition

- **World Wide Web:**
  
  www.stanleytools.com
  
  http://www.hti.org/

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  - Ms P van Dalen
Select, use and care for hand tools and basic equipment and infrastructure

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<td>2007-10-13</td>
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**PURPOSE OF THE UNIT STANDARD**

A learner achieving this unit standard will be able to select hand tools and basic equipment that are appropriate to a specific agricultural task. The learner will be able to operate, care for and store basic tools and equipment in a safe and responsible manner.

In addition learners will be well positioned to extend their learning and practice into the use of more complex tools and equipment in other areas of agriculture.

Competent learners will be fully conversant with basic safety procedures and practices as well as good practices regarding the use and storage of basic tools and equipment.

Learners will gain an understanding of sustainable agricultural practices as applied in the animal-, plant and mixed farming sub fields. This unit standard focuses on the application of agricultural equipment, technology, implements and infrastructure in primary agriculture.

They will be able to participate in, undertake and plan farming practices with knowledge of their environment. This unit standard will instil a culture of maintenance and care for both the environment as well as towards farming infrastructure and operations.

**LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING**

No learning is assumed.

**UNIT STANDARD RANGE**

Whilst range statements have been defined generically to include as wide a set of alternatives as possible, all range statements should be interpreted within the specific context of application.

Range statements are neither comprehensive nor necessarily appropriate to all contexts. Alternatives must
however be comparable in scope and complexity. These are only as a general guide to scope and complexity of what is required.

**UNIT STANDARD OUTCOME HEADER**

N/A

**Specific Outcomes and Assessment Criteria:**

**SPECIFIC OUTCOME 1**
Select and use appropriate equipment and implements for a specific agricultural task.

**OUTCOME RANGE**
The hand tools used may range from picks, shovels and spades. Basic equipment may include, but is not limited to hand operated sprayers, smaller hand tools and simple power tools. Tasks may range from, but are not limited to, soil preparation, transport, harvesting, the moving of animals, etc.

**ASSESSMENT CRITERIA**

**ASSESSMENT CRITERION 1**
The appropriate hand tool or equipment is selected to perform a specified task.

**ASSESSMENT CRITERION 2**
The hand tool or basic piece of equipment is used correctly.

**ASSESSMENT CRITERION 3**
The learner explains why the hand tool or basic piece of equipment was selected.

**SPECIFIC OUTCOME 2**
Recognise and act on problems related to the use of hand tools and basic equipment in an agricultural environment.

**OUTCOME RANGE**
Problems related to the use of hand tools and basic equipment refers to elementary malfunctions, such as tools becoming blunt, sprayers becoming blocked or screws and bolts becoming loose. The correct course of action may be to discontinue using the equipment or, if appropriate, to repair the hand tool or equipment.

**ASSESSMENT CRITERIA**

**ASSESSMENT CRITERION 1**
A problem whilst using a basic tool or piece of basic equipment is identified.

**ASSESSMENT CRITERION 2**
The appropriate course of action is identified.

**ASSESSMENT CRITERION 3**
Hand tools or basic equipment requiring additional repairs and maintenance are reported to the relevant person.

**SPECIFIC OUTCOME 3**
Perform routine maintenance tasks to agricultural equipment.
OUTCOME RANGE
Routine maintenance tasks refer to on-going, scheduled tasks that are performed in order to keep hand tools and basic equipment functioning properly. It could include tasks such as unblocking pipes and nozzles, sharpening blunt tools, cleaning nozzles on sprayers, checking water and oil levels in machinery, cables and plugs.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1
Basic equipment is cleaned and maintained according to prescribed methods.

ASSESSMENT CRITERION 2
Simple repair tasks on agricultural equipment are performed.

ASSESSMENT CRITERION 3
Malfunctioning equipment are reported timeously.

SPECIFIC OUTCOME 4
Store equipment correctly and safely.

OUTCOME RANGE
Equipment may range from, but is not limited to, hand tools and power tools. Implements may range from, but are not limited to, hand operated machinery and farm vehicles, such as tractors and graders.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1
Hand tools and equipment are cleaned before storage.

ASSESSMENT CRITERION 2
Hand tools and equipment are stored according to prescribed methods and safety requirements.

ASSESSMENT CRITERION 3
The purpose of specified storage requirements are explained.

SPECIFIC OUTCOME 5
Identify and apply the correct safety measures when using hand tools and basic agricultural equipment and implements.

OUTCOME RANGE
Safety measures refer to preventing injury to oneself and others, and to damage to the equipment. These may include, but are not limited to, the use of protective clothing and the correct handling of equipment.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1
Safety measures are correctly identified.

ASSESSMENT CRITERION 2
The appropriate protective clothing are identified and used.
ASSESSMENT CRITERION 3
Possible injuries resulting from the incorrect handling of tools and equipment are identified.

ASSESSMENT CRITERION 4
Possible damage through incorrect use and handling of equipment is identified.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS
The assessment of qualifying learners against this standard should meet the requirements of established assessment principles.

It will be necessary to develop assessment activities and tools, which are appropriate to the contexts in which the qualifying learners are working. These activities and tools may include an appropriate combination of self-assessment and peer assessment, formative and summative assessment, portfolios and observations etc.

The assessment should ensure that all the specific outcomes, critical cross-field outcomes and essential embedded knowledge are assessed.

The specific outcomes must be assessed through observation of performance. Supporting evidence should be used to prove competence of specific outcomes only when they are not clearly seen in the actual performance.

Essential embedded knowledge must be assessed in its own right, through oral or written evidence and cannot be assessed only by being observed.

The specific outcomes and essential embedded knowledge must be assessed in relation to each other. If a qualifying learner is able to explain the essential embedded knowledge but is unable to perform the specific outcomes, they should not be assessed as competent. Similarly, if a qualifying learner is able to perform the specific outcomes but is unable to explain or justify their performance in terms of the essential embedded knowledge, then they should not be assessed as competent.

Evidence of the specified critical cross-field outcomes should be found both in performance and in the essential embedded knowledge.

Performance of specific outcomes must actively affirm target groups of qualifying learners, not unfairly discriminate against them. Qualifying learners should be able to justify their performance in terms of these values.

• Anyone assessing a learner against this unit standard must be registered as an assessor with the relevant ETQA.

• Any institution offering learning that will enable achievement of this unit standard or assessing this unit standard must be accredited as a provider with the relevant ETQA.

• Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines in the relevant qualification and the agreed ETQA procedures.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE
The person is able to demonstrate a basic knowledge of:

• Basic safety procedures related to hand tools and basic equipment.
• How hand tools and basic equipment work (in order to recognise malfunctions and to perform elementary repairs and maintenance).
• Basic identification of wear and tear on tools and equipment.
• Understand the purpose and need for the study of tools.
• Understand the workings of the Occupational Health and Safety Act as it applies to the specific usage of tools.
• Understand the implications of the misuse, abuse and failure to maintain tools on the efficiency, effectiveness of the tool.
• Understand the implications of the misuse, abuse and failure to maintain tools on the safety of the operator and/or users
• Understand the application and use of the specific tools.
• Understand the procedure to be followed regarding the reporting of problems related to tools and their status.

UNIT STANDARD DEVELOPMENTAL OUTCOME
N/A

UNIT STANDARD LINKAGES
N/A

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING
Problem solving relates to Specific Outcomes:
• Select and use appropriate equipment and implements for a specific agricultural task.
• Recognise and act on problems related to the use of hand tools and basic equipment in an agricultural environment.
• Perform routine maintenance tasks to hand tools and basic equipment that are not functioning properly.
• Store hand tools and basic equipment correctly and safely.

UNIT STANDARD CCFO WORKING
Teamwork relates to specific outcomes:
• Store hand tools and basic equipment correctly and safely.

UNIT STANDARD CCFO ORGANIZING
Self-organisation and management relates to all specific outcomes.

UNIT STANDARD CCFO COLLECTING
Information evaluation relates to specific outcomes:
• Recognise and act on problems related to the use of hand tools and basic equipment in an agricultural environment.
• Perform routine maintenance tasks to hand tools and basic equipment that are not functioning properly.
• Store hand tools and basic equipment correctly and safely.

UNIT STANDARD CCFO COMMUNICATING
Communication relates to specific outcomes:
• Recognise and act on problems related to the use of hand tools and basic equipment in an agricultural environment.
• Perform routine maintenance tasks to hand tools and basic equipment that are not functioning properly.

UNIT STANDARD CCFO SCIENCE
Use science and technology relates to all specific outcomes.

UNIT STANDARD CCFO DEMONSTRATING
Inter-relatedness of systems relates to specific outcomes:
• Perform routine maintenance tasks to hand tools and basic equipment that are not functioning properly.
• Store hand tools and basic equipment correctly and safely.
• Identify and apply the correct safety measures when using hand tools and basic agricultural equipment.

UNIT STANDARD CCFO CONTRIBUTING
Self-development relates to specific outcomes:
- Perform routine maintenance tasks to hand tools and basic equipment that are not functioning properly.
- Identify and apply the correct safety measures when using hand tools and basic agricultural equipment.

UNIT STANDARD ASSESSOR CRITERIA
N/A

UNIT STANDARD NOTES
N/A

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