



NQF Level: 3

US No: 9010

Facilitator Guide

Primary Agriculture

Different number bases and measurement units



Facilitator:

Company:

Commodity: Date:

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agriculture

Department:
Agriculture
REPUBLIC OF SOUTH AFRICA



Before you get started...

Dear Facilitator,

This Facilitator Guide (together with the relevant Learner Guide) is aimed at facilitators who will be assisting learners wishing to complete the following unit standard:

Title:	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations.		
US No:	9010	NQF Level:	3
		Credits:	2

This guide contains all necessary facilitation instructions to ensure that learners will attain the expected competencies required by the above-mentioned unit standard. This guide is designed to be used during the presentation of a learning session based on this unit standard. The full unit standard is attached at the end of the relevant Learner Guide. Learners are advised to read the unit standard at their time. Please discuss the unit standard with the learners to ensure that they understand what is expected from them to achieve the outcomes of the unit standard.

This unit standard is one of the building blocks in the qualifications listed below. Please mark the qualification you are currently facilitating, because that will be determined by the context of application:

Title	ID Number	NQF Level	Credits	Mark
National Certificate in Animal Production	49048	3	120	<input type="checkbox"/>
National Certificate in Plant Production	49052	3	120	<input type="checkbox"/>

Please mark the learning program the learners are enrolled in:

Are you enrolled in a:	Y	N
Learnership?	<input type="checkbox"/>	<input type="checkbox"/>
Skills Program?	<input type="checkbox"/>	<input type="checkbox"/>
Short Course?	<input type="checkbox"/>	<input type="checkbox"/>

Note to Facilitator:

If you are presenting this module as part of a full qualification or learnership, please ensure that you have familiarised yourself with the content of the qualification.

Please explain the above concepts to the learner.

There are three guides, namely the Learner Guide (with activities), Assessor Guide and the Facilitator Guide.

These guides have been developed to address specific aspects of the learning experience. You therefore need to use these guides complementally to one another.

Make this an enjoyable learning experience!

Context of Application ...

Primary Agriculture is a diverse sector and a wide range of commodities is being produced for both national and international market. Each commodity has its own production requirements and practices. You will be facilitating the learning process within a specific context where a specific agricultural commodity is being produced. The learning material has been written in a **generic** manner, as it is aimed to be available on national level and should be relevant to be applied within a variety of commodities. It is therefore inclusive of all agricultural commodities and crop in this field. Therefore, the examples that are being used in the materials may not always be applicable to your specific community, commodity, environment or region.

This presents you, the facilitator, with the challenge to **contextualise** the learning material. It is imperative that you, the Facilitator and Assessor interpret and present activities, case studies and projects related to the material in such a way that learners can easily identify and apply their knowledge within their own context. This will require from you to add examples of crop, which are applicable to the community or farm. Learners must be guided with examples from their own communities, commodities, environment or regions. This should be done by complementing the learning material with:

- Examples relevant to the commodity,
- Including commodity specific requirements,
- Including operating procedures of the farm,
- Including agricultural practice specific requirements,
- Agricultural markets,
- Guiding learners to write these specifics down in the learning guide, etc.

The contextualisation of the learning material is a very important step in preparing for and facilitating the learning experience and enough time and effort should be put into this exercise.

According to the qualifications mentioned on page 2, this module could be contextualised to fit the following groups of commodities:

Plant Production	Animal Production	
<ul style="list-style-type: none"> • Organic production, • Hydroponic production, • Perma-culture production, • Agronomy, • Horticulture, • Natural resources harvesting. 	<ul style="list-style-type: none"> • Small stock production, • Large stock production, • Dairy production, • Pig production, • Poultry production, • Game, • Aqua / mari culture, • Commercial insects • Animal fibres harvesting, • Bee keeping, 	<ul style="list-style-type: none"> • Natural resources harvesting, • Organic production, • Perma-culture production, • Eco/Agri Tourism, • Agro Chemicals, • Horse Breeding, • Etc.

How to use this guide ...

Throughout the guide information is given specifically aimed at you, the facilitator, to **assist** in the actual presentation of the learning material and/or facilitation of the learning process. Although this guide contains all the information required for attaining competency in this unit standard, references to additional resources, both printed and electronic, are provided for additional reference by the facilitator and further study by the learner.

Please note that the purpose of this information is merely to **guide** you, the facilitator, and is provided as a suggestion of possibilities. It remains the responsibility of every facilitator to re-assess the learner/s in each learning situation throughout the learning process in order to stay in touch with their specific learning needs. This should be the determining factor in the choice of the learning approach to follow.

Use the different boxes listed below for identification purposes:



Instructions regarding **activities**, whether group or individual activities will be described in this box.



Facilitators' Tip ...

My Notes ...

You can use this box for your own notes/comments.

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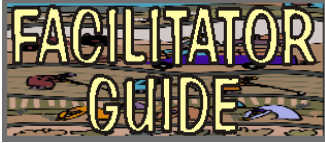
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Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations.

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Primary Agriculture

NQF Level 3

Unit Standard No: 9010

What & How will you be Facilitating?

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The Learning Experience...

On completion of this module, the learners will be able to:

- ◆ This unit standard is designed to provide credits towards the mathematical literacy requirements of the NQF at level 2. The essential purposes of the mathematical literacy requirements are that, as the learner progresses with confidence through the levels, the learner will grow in:
- ◆ An insightful use of mathematics in the management of the needs of everyday living to become a self-managing person
- ◆ An understanding of mathematical applications that provides insight into the learner`s present and future occupational experiences and so develop into a contributing worker
- ◆ The ability to voice a critical sensitivity to the role of mathematics in a democratic society and so become a participating citizen.
- ◆ People credited with this unit standard are able to:
- ◆ Convert numbers between the decimal number system and binary number system
- ◆ Work with numbers in different ways to express size/magnitude.
- ◆ Demonstrate the effect of error in calculations.

Learners will also gain basic knowledge of:

- ◆ A learner credited with this unit will be able to:
- ◆ Convert numbers between the decimal number system and binary number system
- ◆ Work with numbers in different ways to express size/magnitude.
- ◆ Demonstrate the effect of error in calculations.

Learning Assumed to be in Place:

- ◆ The credit value is based on the assumption that people starting to learn towards this unit standard are competent in Mathematical Literacy and Communications at NQF level 2.



Remember to do a diagnostic assessment of the learner's prior learning and ensure that they are starting at the correct level.

My Notes ...

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Learning Program Time Frames

	Total time allocated (hours)	Theoretical learning time allocated (hours)	Practical learning time allocated (hours)	Activities to be completed
Complete Program (including summative assessment)	20 hours	8.5 hours	11.5 hours	15
Learner Orientation and "Ice Breaker"	0.5 hour	0.5 hour		
Purpose, Introduction and Learner Directions	0.5 hour	0.5 hour		
Session 1	6 hours	2 hours	4 hours	1 - 7
Session 2	4 hours	1.5 hours	2.5 hours	8 - 10
Session 3	5 hours	2 hours	3 hours	11 - 15
Preparation for Assessment & revision	4 hours	2 hours	2 hours	

My Notes ...

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Tips for level of learning



Remember the following before you get started:

Typically, a learning programme leading to the award of a qualification or unit standards at level 3 should develop learners who demonstrate an ability to:-

- Operate within clearly defined contexts.
- Work and learn within a managed environment.
- Actively contribute to team effectiveness.
- Take position on available information, discuss the issues and reach a resolution; produce a coherent presentation and report, providing explanations for positions taken.
- Summarise and interpret information relevant to the context from a range of sources.
- Use their knowledge to select appropriate procedures to solve problems within given parameters.
- Apply skills in measuring the environment using key instruments and equipment operational literacy and numeracy skills; use basic procedures and operations to complete complex tasks.
- Understand the organisational and operating environment as a system.
- Understand one or more fields or discipline's key concepts and knowledge, in addition to the fundamental areas of study.

Facilitator's Checklist & Training Aids

Learner support strategies:

Learners are supplied with all resources and aids as required by the programme – including:

- Objects & devices such as equipment, protective clothing, safety gear, etc.
- Learner Guides and Learner Workbook
- Visual aids, etc.

Use this checklist below during your preparation to ensure that you have all the equipment, documents and training aids for a successful session.

Preparation:	Yes	No
Qualification Knowledge – I have familiarised myself with the content of the applicable qualification		
Unit Standard Knowledge – I have familiarised myself with the content of all aspects of the applicable unit standard		
Content Knowledge – I have sufficient knowledge of the content to enable me to facilitate with ease		
Application knowledge – I understand the programme matrix & have prepared for programme delivery accordingly		

Contextualisation – I have included information which is specific to the commodity and practices related to the commodity		
Ability to respond to learners background & experience – I have studied the learner demographics, age group, experience & circumstances & prepared for programme delivery accordingly		
Enthusiasm & Commitment – I am passionate about my subject & have prepared my programme delivery to create a motivating environment with real commitment to success		
Enterprise knowledge – I know & understand the values, ethics, vision & mission of the workplace & have prepared my programme delivery, reporting & administrative tasks accordingly.		
Equipment check:		
Learner guides x 1 per learner		
Assessment guides x 1 per learner		
Writing materials & stationary (facilitator & learner)		
White board & pens		
Flip chart paper		
Proxima projector & screen		
Laptop & programme disk		
Sample Hand-outs and examples of laws and other relevant documents		
Safety gear as prescribed by unit standard and applicable legislation		
Documentation checklist:		
Attendance Register		
Course Evaluation		
Learner Course Evaluation		
Portfolios of evidence		

Contextualisation of Content!

Go through this module and indicate what specific **information / activities / examples** should be included in this module?

Contextualisation	
<ul style="list-style-type: none"> Commodity specific? 	
<ul style="list-style-type: none"> Operating procedures of the farm? 	
<ul style="list-style-type: none"> Agricultural practices? 	
<ul style="list-style-type: none"> Agricultural markets? 	

My Notes ...

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Session

1 Conversion between decimal and binary systems

**Learner
Guide:
Page 7**

After completing this session, the learner should be able to:

SO 1: Convert numbers between the decimal number system and the binary number system.

Concept (SO 1)	Time frame	Activities related to the concept
Conversion between binary and decimal numbers is done correctly.	6 hours	Activity 1 - 7
Basic addition and subtraction calculations in the binary number system are done correctly.		
Practical applications of the decimal and binary system are explained correctly.		

My Notes ...

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Please allow learners to complete Activity 1 - 7 in their Learner Guides

Type of activity	Resources
1. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	
Type of activity	Resources
2. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	
Type of activity	Resources
3. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	
Type of activity	Resources
4. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	
Type of activity	Resources
5. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	
Type of activity	Resources
6. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	
Type of activity	Resources
7. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	

My Notes ...

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2 Express size and magnitude

Session

Learner Guide:
Page 19

After completing this session, the learner should be able to:
SO 2: Work with numbers in different ways to express size and magnitude.

Concept (SO 2)	Time frame	Activities related to the concept
The prefixes indicating magnitude in measurements are correctly related to the decimal system.	4 hours	Activity 8 - 10
Conversions between related units in different measurement systems are correctly applied in real-life contexts.		



Please allow learners to complete Activity 8 - 10 in their Learner Guides

Type of activity	Resources
8. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	
Type of activity	Resources
9. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	
Type of activity	Resources
10. Individual assignment.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	

My Notes ...

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Session **3** Error in calculations

Learner Guide: Page 25

After completing this session, the learner should be able to:
SO 3: Demonstrate the effect of error in calculations.

Concept (SO 3)	Time frame	Activities related to the concept
Symbols for irrational numbers such as $7c$ and 42 are left in formulae or steps to calculations except where approximations are required.	5 hours	Activity 11 - 15
Descriptions are provided of the effect of rounding prematurely in calculations.		
The desired degree of accuracy is determined in relation to the practical context.		
The final value of a calculation is expressed in terms of the required unit.		

My Notes ...

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What will I do differently next time?

Take some time to **reflect** on your own activities as facilitator of this Unit Standard 9010. Then write down five of the most important lessons you have learnt and include a motivation:

What will I do differently next time?	Motivate how or why (Give examples, reasons, etc.)
1.	
2.	
3.	
4.	
5.	

As facilitator, you have hands on experience in the application of the unit standard 9010. And you might experience difficulties with the unit standard that the developers did not anticipate. Also, the unit standard will be revised at the end of the registration period. Your comments below can be an important contribution in the revision process and should be brought to the attention of either the AgriSETA ETQA manager or the SGB chairperson.

Please take some time to reflect on your experience and list a few of the difficulties you had to address.

Difficulties I had with the Unit Standard	Recommended Changes to Address the Difficulty
6.	
7.	
8.	
9.	
10.	