



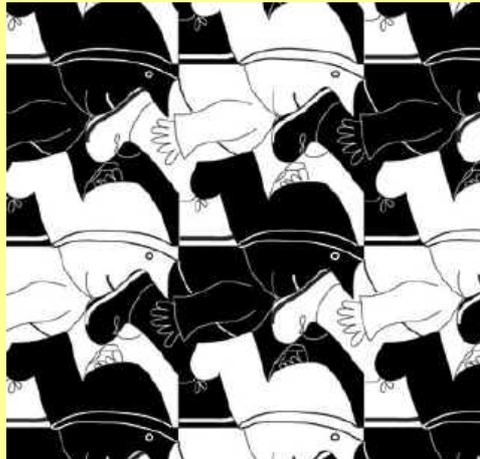
NQF Level: 3

US No: 9013

Facilitator Guide

Primary Agriculture

Shape and motion



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: | Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts. | | |
| US No: | 9013 | NQF Level: | 3 |
| | | Credits: | 4 |

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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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 3. 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.
- ◆ Learners credited with this standard are able to:
- ◆ Measure, estimate, and calculate physical quantities in practical situations relevant to the adult in life or the workplace.
- ◆ Explore describe and represent, interpret and justify geometrical relationships and conjectures to solve problems in two and three-dimensional geometrical situations.
- ◆ The purpose of this module is to equip the learner with the necessary skills, knowledge and attributes that will enable him/her to describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts.

Learners will also gain basic knowledge of:

- ◆ A learner credited with this unit will be able to"
- ◆ Measure, estimate, and calculate physical quantities in practical situations. This includes:
- ◆ Using basic instruments such as rulers, measuring tapes, measuring cylinders or jugs, thermometers, spring or kitchen balances, watches and clocks.
- ◆ Estimating quantities such as length/distance, area, mass, time, speed and temperature.
- ◆ Estimating the area and volume of simple irregular shapes and objects.
- ◆ The quantities should range from the low or small to the high or large.
- ◆ Using mass, volume temperature, distance, and speed values in practical situations relevant to the learner or the workplace.
- ◆ The ability to do calculations involving the effects on area and volume when altering linear dimensions.
- ◆ Calculating heights and distances using Pythagoras` theorem.
- ◆ Calculating surface areas and volumes of right prisms (i.e., end faces are polygons and the remaining faces are rectangles) and cylinders from measurements in practical situations relevant to the life of the learner or in the workplace.
- ◆ Using symbols and units in accordance with SI conventions and as appropriate to the situation.

- ◆ Explore, describe and represent, interpret and justify geometrical relationships and conjectures. This includes:
- ◆ Taking applications from different contexts such as packaging, arts, building construction, dressmaking.
- ◆ Using tessellations and symmetry in artifacts and in architecture.
- ◆ Using rough sketches to interpret, represent and describe situations.
- ◆ Using and interpreting scale drawings of plans (e.g., plans of houses or factories; technical diagrams of simple mechanical household or work related devices such as jacks,
- ◆ Nets of prisms and cylinders.
- ◆ Using the Cartesian co-ordinate system in determining location and describing relationships in at least two dimensions such as a road map.

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 | 6 hours | 14 hours | 12 |
| Learner Orientation and "Ice Breaker" | 30 minutes | 30 minutes | - | - |
| Purpose, Introduction and Learner Directions | 30 minutes | 30 minutes | - | - |
| Session 1 | 9 hours 30 minutes | 1 hour 30 minutes | 8 hours | 1 - 8 |
| Session 2 | 5 hours 30 minutes | 1 hours 30 minutes | 4 hours | 9 - 12 |
| Preparation for Assessment & revision | 4 hours | 2 hours | 2 hours | - |

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: |
|--|
| <p>Learners are supplied with all resources and aids as required by the programme – including:</p> <ul style="list-style-type: none"> ▪ 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? | |

Session

1 Measure, estimate and calculate.

**Learner
Guide:
Page 9**

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

SO 1: Measure, estimate, and calculate physical quantities in practical situations.

| Concept (SO 1) | Time frame | Activities related to the concept |
|---|-------------------------------|-----------------------------------|
| Scales on the measuring instruments are read correctly. | 9 hours 30 minutes | Activity 1 - 8 |
| Quantities are estimated to a tolerance justified in the context of the need. | | |
| The appropriate instrument is chosen to measure a particular quantity. | | |
| Quantities are measured correctly to within the least step of the instrument. | | |
| Calculations are carried out correctly. | | |
| Symbols and units are used in accordance with SI conventions and as appropriate to the situation. | | |

My Notes ...

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Session

2 Explore, describe, represent, interpret and justify.

**Learner
Guide:
Page 28**

After completing this session, the learner should be able to:
SO 2: Explore, describe and represent, interpret and justify geometrical relationships and conjectures.

| Concept (SO 2) | Time frame | Activities related to the concept |
|---|-------------------------------|-----------------------------------|
| Descriptions are based on a systematic analysis of the shapes and reflect the properties of the shapes accurately, clearly and completely. | 5 hours 30 minutes | Activity 9 - 12 |
| Descriptions include quantitative information appropriate to the situation and need. | | |
| Conjectures as appropriate to the situation, are based on well-planned investigations of geometrical properties. | | |
| Representations of the problems are consistent with and appropriate to the problem context. The problems are represented comprehensively and in mathematical terms. | | |
| Results are achieved through efficient and correct analysis and manipulation of representations. | | |
| Problem-solving methods are presented clearly, logically and in mathematical terms. | | |
| Solutions are correct and are interpreted and validated in terms of the context of the problem. | | |

What will I do differently next time?

Take some time to **reflect** on your own activities as facilitator of this Unit Standard 9013. 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 9013. 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. | |