# ASSESSMENT FORMS

Unit Standard 9013

# Describe, apply, analyse and calculate shape and motion in 2- and 3- dimensional space in different contexts

**SAQA US ID: 9013 NQF 3 CREDITS 4**

# Table of Contents

# Introduction

This Assessment guide enables the assessor to gather and assess evidence provided by the learner as stipulated by the unit standard outcomes. It contains all the necessary activities and instructions to allow the learner to provide the required evidence.

The guide must be used by a trained and accredited assessor at the relevant SETA.

It is imperative that the assessor and facilitator are familiar with the content of this guide as well as that of the relevant learner workbook, if it is part of the course pack.

The assessor must familiarise himself/herself with the Assessment Policies and Procedures as defined in the Provider's QMS, and these must be strictly adhered to.

Assessments must be planned by the facilitator and assessor together with the learner to ensure that the learner is ready and has the opportunity to provide evidence that reflect competence.

The guide provides instructions for the assessment process for the following qualification:

| Title: National Certificate: | | |
|---|---|---|
| SAQA Qualification ID: Building and Civil Constructions | NQF Level: 3 | Credits: 140 |

| **Assessor Details** | |
|---|---|
| Assessor Name and Surname | |
| South African ID number | |
| Copy of ID Attached | |
| Assessor Registration No | |
| Telephone Number | |
| Cell Number | |
| Email address | |

# Assessment Request

| Learner Details | |
|---|---|
| Learner Name and Surname | |
| South African ID number | |
| Copy of ID attached | |
| Home address | |
| Telephone Number(s) | |
| Company | |
| Employment number | |
| Work Telephone No | |
| Department | |

| **Assessment Request** | |
|---|---|
| Formal NQF Unit Standard Credits | |
| Formal NQF Qualification | |
| Other: | |
| I hereby confirm that the POE submitted is evidence of my **own work**<br><br>Learner Signature …… | |

| **For Office Use** | |
|---|---|
| Submission Date | |
| Assessor Remarks | |

# Learner Preparation for Assessment Checklist

Points Assessor/Facilitator must cover in the initial meeting with the Learner - Please tick.
This document will be completed prior to each assessment occasion taking place.

| Item | Points to be covered | Tick |
|---|---|---|
| 1 | **Welcome the candidate** and put them at ease | |
| 2 | **Explain the purpose of the meeting** (why you are there and how long the meeting will take) | |
| 3 | **Explain the**<br>▪ NQF<br>▪ Credits<br>▪ Certification process<br>▪ Learning pathways | |
| 4 | **Explain**<br>▪ Who is involved in the assessment and their role (Learners, Coach, Assessors, Managers, Moderators)<br>▪ Principles of assessment (fairness, confidentiality, validity, sufficiency) | |
| 5 | **Explain the assessment process?**<br>▪ Check Learner readiness for assessment (logbook / self -assessment)<br>▪ Assessment contract to be completed<br>▪ Preparation of Learner (this meeting)<br>▪ The assessment (observation and knowledge questionnaire)<br>▪ Judgement of the evidence<br>▪ Outcome of assessment (competent, not yet competent, need further evidence) | |
| 6 | **Give Learner copies of the following documentation and explain each document**<br>▪ The Assessment Guide which includes<br>▪ Relevant unit standard (s)<br>▪ Assessment contract<br>▪ Assessment plan<br>▪ Observation checklist<br>▪ Knowledge checklist | |

| Item | Points to be covered | Tick |
|---|---|---|
| 7 | **Discuss the assessment plan** (complete the assessment plan document)<br>▪ Allow the Learner to participate in the decisions made<br>▪ Agree on dates, time and venue for the assessment and feedback<br>▪ Agree on evidence the Learner can submit<br>▪ Agree and explain the assessment methods<br>▪ Identify and discuss special assessment needs of the candidate<br>▪ Identify and eliminate unfair barriers (language, disability etc)<br>▪ Discuss and agree on witness requirements | |
| 8 | **Tell the candidate his/her rights and responsibilities, the assessment procedures and policies**<br>▪ How many times they may be assessed<br>▪ Appeals process / procedure<br>▪ Reassessment policy | |
| 9 | **Ensure the assessment environment is appropriate** or make special arrangements | |
| 10 | **Discuss moderation** | |
| 11 | **Allow the Learner opportunity to clarify any items discussed** | |

| **Learner declaration of acceptance of assessment instruments and relevant documentation:** | |
|---|---|
| Learner's Name: | Signature: |
| Assessor's Name: | Signature: |

## Assessment Plan

**The following unit standard will be assessed in this assessment occasion: (Assessor to list the SAQA Unit Standard ID's, title, NQF Level and credits).**

| UNIT CODE | UNIT STANDARD TITLES | NQF LEVEL | CREDITS |
|---|---|---|---|
| 9010 | Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations | 3 | 2 |
| 9013 | Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts | 3 | 4 |

| **Activity** | **Evidence of activity will be found where** | **Place & planned date of activity** | **Date Completed** |
|---|---|---|---|
| Training | Classroom training registers & Induction register | Training Provider<br>Date: | |
| Assessment contract | Assessment contract & / or Learnership agreement - signed & dated | Learner file<br>Date: | |
| Learner Preparation for Assessment | Learner Preparation Checklist | Learner file<br>Date: | |
| Planning the Assessment | Assessment plan | Learner file<br>Date: | |
| Conducting the Assessment | Knowledge Questionnaire | Learner file<br>Date: | |
| Feedback | Feedback Reports | Learner file<br>Date: | |
| Evaluation of Assessment | Assessors review of assessment form | Learner file<br>Date: | |
| Moderation | Internal Moderators report | Learner file<br>Date: | |
| Judgement | Assessor Summary Report / Internal Moderator report | Learner file<br>Date: | |
| 1st Reassessment | Assessors summary report / instruments | Learner file<br>Date: | |
| 2nd Reassessment | Assessors summary report / instruments | Learner file<br>Date: | |

***The Assessor is to complete the dates of the above evidence presented***

## Special arrangements for assessment

| | |
|---|---|
| Place | |
| Language | |
| Resources | |
| Barriers | |

People to be involved with assessment

| | |
|---|---|
| *Learner:* | *Manager:* |
| *Trainer:* | *Mentor / Coach:* |
| *Assessor:* | *Moderator:* |

**Next steps for learning**

| |
|---|
| |
| |

**Resources required for this assessment**

| |
|---|
| Black pen for written assessment |
| |
| |

**Guidelines to the Learner**:

| |
|---|
| |
| |

**Declaration:**

| | | |
|---|---|---|
| | | |
| **Learner Name** | **Learner Signature** | **Date** |
| | | |
| **Assessor Name** | **Assessor Signature** | **Date** |

## Assessment Alignment Matrix overview

| | Yes | No |
|---|---|---|
| **Assessor** – you are able to view the Alignment Matrix to the SAQA Unit Standard in your Assessor Feedback Forms Pack. | | |

## Feedback to Learner after Assessment

| **FEEDBACK SECTION – (please tick which one)** | | |
|---|---|---|
| | **Tick** | **Assessor feedback to learner** |
| **1st Attempt** | | |
| **2nd Attempt** | | |
| **3rd Attempt** | | |

Comments from Learner:

**JUDGEMENT**

| | | | |
|---|---|---|---|
| Meets the requirements: | ☐ | Do not meet the requirements: | ☐ |
| Requires additional evidence: | ☐ | Requires another assessment: | ☐ |
| Can continue to the next assessment: | ☐ | Requires another assessment by another assessment: | ☐ |

**Action required:** **By when:**

*Assessor's feedback remarks*

*Declaration by Learner….*

| **Learner has achieved competence to the following standards as part of Module.** | | | |
|---|---|---|---|
| **Unit Standard Number** | **Unit Standard Assessed** | **Credits** | **NQF Level** |
| | | | |
| | | | |
| | | | |

**Declaration by Learner**

I, _____ declare that I am satisfied that the feedback given to me by the Assessor was relevant, sufficient and done in a constructive manner. I accept the assessment judgment and have no further questions relating to this particular assessment instrument.

| | | |
|---|---|---|
| **Learner Name and Signature** | **Assessor Name and Signature** | **Moderator Name and Signature** |
| | | |
| **Date** | **Date** | **Date** |

## Model Answers for Formative and Summative Assessments

### Formative Assessment #1 SO1 AC1

| No | Question | C/NYC |
|---|---|---|
| **1** | Describe the SI.<br>In the hierarchy of decimal numbers, complete the table of how many numbers each consist in the table below. | |
| The SI or Systéme International consists of 7 base units which were taken into use in order to have a worldwide acknowledged unit system. This has simplified the sharing of information between countries with different traditional units significantly. | | |

**Hierarchy of Decimal Numbers**

| Number | Name | How many |
|---|---|---|
| 0 | zero | |
| 1 | one | One |
| 2 | two | two ones |
| 3 | three | Three ones |
| 4 | four | Four ones |
| 5 | five | Five ones |
| 6 | six | Six ones |
| 7 | seven | seven ones |
| 8 | eight | Eight ones |
| 9 | nine | Nine ones |
| 10 | ten | one ten |
| 20 | twenty | two tens |
| 30 | thirty | three tens |
| 40 | forty | four tens |
| 50 | fifty | five tens |
| 60 | sixty | six tens |
| 70 | seventy | seven tens |
| 80 | eighty | eight tens |
| 90 | ninety | nine tens |
| Number | Name | How Many |
| 100 | one hundred | ten tens |
| 1,000 | one thousand | ten hundreds |
| 10,000 | ten thousand | ten thousands |
| 100,000 | one hundred thousand | one hundred thousands |

| | | |
|---|---|---|
| 1,000,000 | one million | one thousand thousands |

## Formative Assessment #2 SO1 AC2

| No | Question | C/NYC |
|---|---|---|
| **1** | Explain how to convert the units used to measure capacity in the metric system. | |

In the metric system, the units used to measure capacity are the litre and millilitre. When a solid is dropped into water, the object takes the place of some of the water. We see that the level of the water rises. One millilitre (1 ml) of water is the volume of water that is displaced by 1 cm3. Or we can say that 1 ml of water fills 1 cm3.

## Formative Assessment #3 SO1 AC3

| No | Question | C/NYC |
|---|---|---|
| **1** | Describe how to measure cylinders. | |

In this case each small increment represents 10 millilitre. Every 100 ml has its value indicated.
To acquire a certain amount of a liquid or powdery solid it is poured into the measuring cylinder. The marking next to the flat level of the substance would indicate the volume contained.
Measuring cylinders are used every day by people baking cakes, cooking, as well as by hairdresser's laboratory technicians, pharmacists, students studying chemical science, chemical scientists and at times even barmen.

## Formative Assessment #4 SO1 AC4 & 5

| No | Question | C/NYC |
|---|---|---|
| **1** | Give examples of some of the sources of potential error in a high-precision balance. | |

Some of the sources of potential error in a high-precision balance include the following:
Buoyancy, due to the fact that the object being weighed displaces a certain amount of air, which must be accounted for. High-precision balances are often operated in a vacuum.
Air gusts, even small ones, may push the scale up or down.
Friction in the moving components may prevent the scale from reaching equilibrium.
Settling airborne dust may contribute to the weight.
Scale may be mis-calibrated.
Mechanical components may be mis-aligned.
Magnetic fields from nearby electrical wiring may act on iron components.
Magnetic disturbances to electronic pick-up coils or other sensors.
Forces from electrostatic fields, for example, from feet shuffled on carpets on a dry day.

Chemical reactivity between air and the substance being weighed (or the balance itself, in the form of corrosion).
Condensation of atmospheric water on cold items.
Evaporation of water from wet items.
Convection of air from hot or cold items.
The Coriolis force from Earth's rotation.

## Formative Assessment #5 SO1 AC6

| No | Question | C/NYC |
|---|---|---|
| **1** | What is a weighing scale? | |
| The weighing scales (specifically, a beam balance) are one of the traditional symbols of justice, as wielded by statues of Lady Justice. This corresponds to the use in metaphor of matters being "weighed up" or "held in the balance". | | |

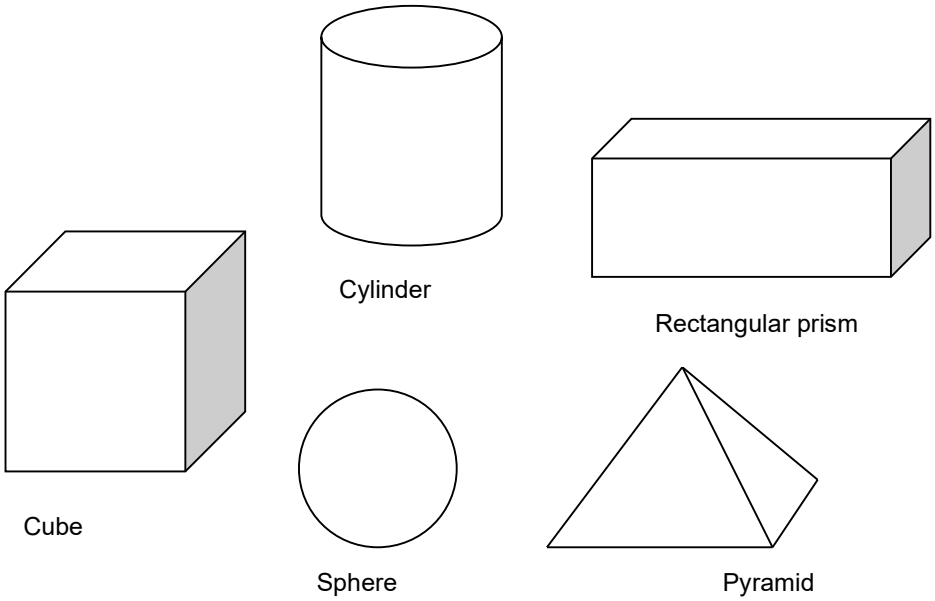
## Formative Assessment #6 SO2 AC1

| No | Question | C/NYC |
|---|---|---|
| **1** | What is a symmetrical object? | |
| A symmetrical object is one that remains identical if rotated or reflected (‘flipped’) around a line through its centre. There may be many angles of rotation for an object. | | |

## Formative Assessment #7 SO2 AC2

| No | Question | C/NYC |
|---|---|---|
| **1** | Name each of the geometrical shapes below. | |

**Geometric Shapes**




## Formative Assessment #8 SO2 AC3

| No | Question | C/NYC |
|---|---|---|
| **1** | What should the value of pi (π) be? | |

.
In all calculations the value of pi (π) should be 3.141593
A prism is a solid geometric figure whose two ends are parallel (side by side and having the same distance continuously between them) and of the same size and shape, and whose sides are parallelograms (a plane figure with four straight sides and opposite sides parallel). The end faces consist of a compilation of known shapes such as triangles, rectangles and circles.
Each side surface is a rectangle. The following are possible types of shapes holding these characteristics.

# Formative Assessment #9 SO2 AC4

| No | Question | C/NYC |
|---|---|---|
| **1** | What should the value of pi (π) be? | |

.
In all calculations the value of pi (π) should be 3.141593
A prism is a solid geometric figure whose two ends are parallel (side by side and having the same distance continuously between them) and of the same size and shape, and whose sides are parallelograms (a plane figure with four straight sides and opposite sides parallel). The end faces consist of a compilation of known shapes such as triangles, rectangles and circles.
Each side surface is a rectangle. The following are possible types of shapes holding these characteristics.

# Summative Assessment
# Practical

**Practical:**

**Observation to be completed by the Assessor**

**Question: 1**

**SO1 AC1**

**Calculate the length and distance of 1m.**

We measure lengths in millimetres (mm), centimetres (cm), meters (m) and kilometres (km). These are the units of length in the SI (System International) Metric System.
The relations are: 1m = 100 cm = 1000mm and 1km = 1000m
The distance between two points is the path length between the two points.

**Question: 2**

**SO1 AC2**

**Calculate the measurement in millilitres or litres of one litre of fluid.**

Fluids such as water, milk and cold drinks are measured in millilitres or litres.
One litre = 1 000 ml.
For big volumes of fluid we can use the kilolitre (kl) as unit. 1 kl = 1 000 l.
Example: 5 ml of fluid fills 5 cm3
¼ l = 250 ml
1 kl of fluid fills 1 000 000 cm3 or 1 m3

**Question: 3**

**SO1 AC3**

**Describe (with an example) what the difference between weight and mass is.**

We say that the weight ("heaviness") of an object depends on its mass. The bigger the mass, the bigger the pull of the earth is on it.
To measure mass we choose a unit of mass and express the mass of an object in this unit. In the metric system we use the gram (g) and the kilogram (kg) as units of mass.
1kg = 1000g, 1g = 1000 mg
Remember to use the same units when comparing the masses of different objects.

**Question: 4**

**SO1 AC5**

**Give an example of vibration and seismic disturbances.**

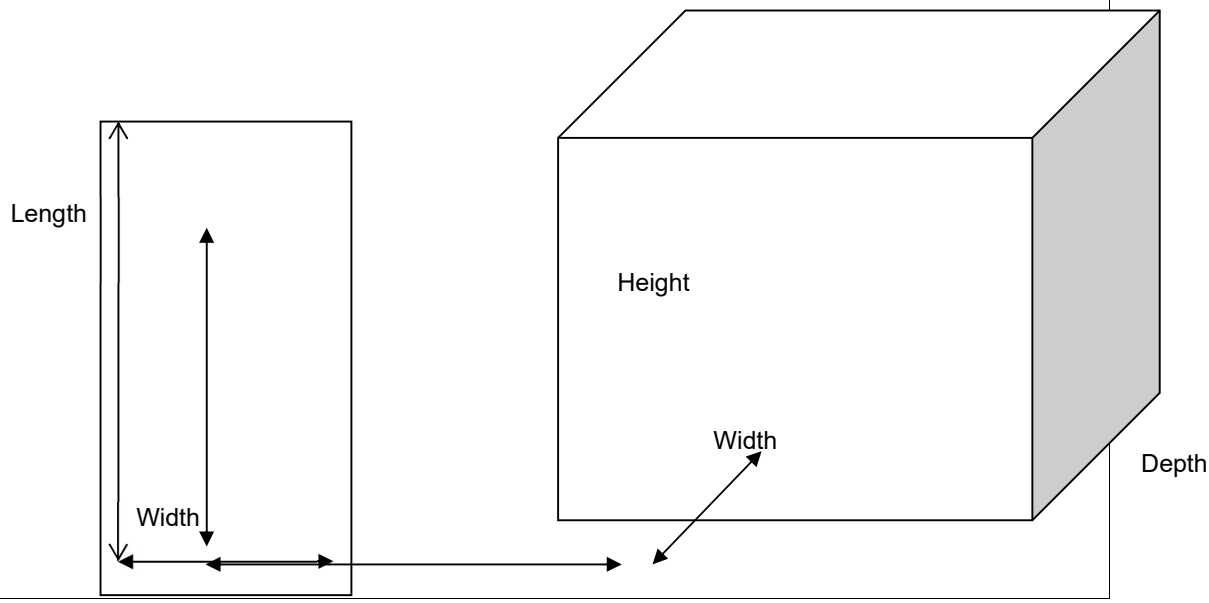
| |
|---|
| Vibration and seismic disturbances; for example, the rumbling from a passing truck. |

**Question: 5**

**SO2 AC1**

**Describe and draw the third dimension.**

The third dimension is shown by introducing depth. A box has length, width and depth.
The drawing shows a box shape in three dimensions: length, width and depth.




**Question: 6**

**SO2 AC2**

**Explain and draw a prism.**

| |
|---|
| A prism is a solid geometric figure whose two ends are parallel (side by side and having the same distance continuously between them) and of the same size and shape, and whose sides are parallelograms ( a plane figure with four straight sides and opposite sides parallel).<br>The end faces consist of a compilation of known shapes such as triangles, rectangles and circles.<br>Each side surface is a rectangle. The following are possible types of shapes holding these characteristics.<br>It is easiest to calculate surfaces and volumes by breaking up each prism's face end into its most basic shapes. Let us review the surface area equations relevant to these basic shapes. |