



NQF Level: 1

US No: 7447

Learner Workbook

Primary Agriculture

Working With Numbers in Various Contexts

1 2 3 4 5 6 7 8 9 0

My Name:

My Workplace:

My ID Number: Date:

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agriculture

Department:
Agriculture
REPUBLIC OF SOUTH AFRICA



Before we start...

Dear Learner - on completion of this Learner Guide, you will have acquired all the knowledge and skills to be assessed against the following unit standard:

Title: Working with numbers in various contexts		
US No: 7447	NQF Level: 1	Credits: 6

Please read the unit standard at your own time (see **Learner Guide**).

What is Assessment all about?

Assessment takes place at different intervals of the learning process and includes various activities. Some activities will be done before the commencement of the program whilst others will be done during programme delivery and other after completion of the program.

The assessment experience should be user friendly, transparent and fair. Should you feel that you have been treated unfairly, you have the right to appeal. Please ask your facilitator about the appeals process and make your own notes.

How to use this Workbook ...

Your activity workbook will be handed in from time to time on request of the facilitator / assessor for the following purposes:

- ◆ The activities that follow are designed to help you gain the skills, knowledge and attitudes that you need in order to become competent in this learning module.
- ◆ It is important that you complete all the activities and worksheets, as directed in the learner guide and at the time indicated by the facilitator.
- ◆ It is important that you ask questions and participate as much as possible in order to play an active roll in reaching competence.
- ◆ When you have completed all the activities and worksheets, hand this workbook in to the assessor who will mark it and guide you in areas where additional learning might be required.
- ◆ You should not move on to the next step in the assessment process until this step is completed, marked and you have received feedback from the assessor.
- ◆ Sources of information to complete these activities should be identified by your facilitator.
- ◆ **Please note** that all completed activities, tasks and other items on which you were assessed must be kept in good order as it becomes part of your **Portfolio of Evidence** for final assessment.



1.1
SO 5 AC 2-3

Brainstorm as a group, and write down keywords for yourself...

My Name:
My Workplace:
My ID Number:

Think of examples of as many as possible things that we might use numbers for. Think of your working environment, daily life, politics, sport, etc. Write your own contributions (keywords) as well as that of the group in the space provide below:

[Large dashed rectangular box for brainstorming notes]

Facilitator comments:

Assessment:



1.2

SO 5 AC 1

Change Base Ten Numerals into Base Two Numerals

My Name:

My Workplace:

My ID Number:

Binary System: Only two digits "0" and "1" are used for computation in computers. This system is called Binary System (or the base-two system) as the base digits are only two.

Table: Place value chart for Binary System

1	1	Unit's Place
2	2	Two's Place
2 ²	4	Four's Place
2 ³	8	Eight's Place
2 ⁴	16	Sixteen's Place
2 ⁵	32	Thirty two's Place
2 ⁶	64	Sixty Four's Place
2 ⁷	128	One Hundred Twenty Eight's Place

Example: Change 56 Into Binary System.

2	56	
2	28	0
2	14	0
2	7	0
2	3	1
2	1	1
2	0	1

The *answer* is third column from down to up, that is 111000 base two. This is read as one-one-one-zero-zero-zero base two.

Remainder	
2	56
2	28 — 0
2	14 — 0
2	7 — 0
2	3 — 1
2	1 — 1
	0 — 1
Answer: 111000	

Now, change the following base ten numerals into base two numerals (choose the correct answer, a or b or c or d):

- 81** a) None of these b) 1010001 c) 1010101 d) 1001001
- 1001** a) 101010101 b) 1111000011 c) 10101110 d) 1111101001
- 51** a) 11011 b) 11010 c) 110011 d) 11011
- 1210** a) 1000100101 b) 10010111010 c) 1010111001 d) 1010101111
- 36** a) 111000 b) 110011 c) 10100 d) 101010
- 25** a) 11100 b) None of these c) 11001 d) 10101
- 49** a) 10110 b) 110001 c) 10101 d) 11100
- 9** a) 1001 b) 1100 c) 1110 d) 1010

Facilitator comments:

Assessment:



2.1

SO 6 AC 1-4

Complete these exercises.
Place value (1) and numbers in figures (2).

My Name:

My Workplace:

My ID Number:

1. Fill in the numbers showing the value of each figure. The first one is done for you.

- a. 23 is 2 tens 3 units
- b. 765 is ___ hundreds ___ tens ___ units
- c. 809 is ___ hundreds ___ tens ___ units
- d. 832 is ___ hundreds ___ tens ___ units
- e. 2 934 is ___ thousands ___ hundreds ___ tens ___ units
- f. 6 203 is ___ thousands ___ hundreds ___ tens ___ units
- g. 7 042 is ___ thousands ___ hundreds ___ tens ___ units
- h. 23 934 is ___ tens of thousands ___ thousands ___ hundreds ___ tens ___ units
- i. 90 462 is ___ tens of thousands ___ thousands ___ hundreds ___ tens ___ units
- j. 72 895 is ___ tens of thousands ___ thousands ___ hundreds ___ tens ___ units
- k. 56 005 is ___ tens of thousands ___ thousands ___ hundreds ___ tens ___ units
- l. 10 090 is ___ tens of thousands ___ thousands ___ hundreds ___ tens ___ units

2. Use the place value table to write the following numbers in figures:

- a. Two hundred and four
- b. One thousand
- c. Six thousand five hundred and six
- d. Two thousand and nine
- e. Forty five thousand
- f. Sixty four thousand and twenty nine
- g. One hundred thousand
- h. Two hundred and six thousand
- i. Six hundred and nineteen thousand
- j. Seventy four thousand six hundred and four
- k. One hundred and nineteen thousand
- l. Nine hundred and nine thousand six hundred and two
- m. One million

M	Hth	Tth	Th	H	T	U

Facilitator comments:

Assessment:

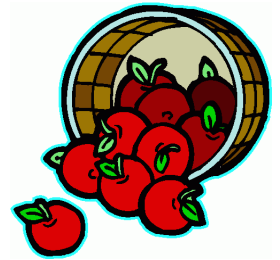


2.2
SO 6 AC 1-4

Complete these exercises in your workbook.

My Name:
My Workplace:
My ID Number:

1. You are working in a packing store, where apples are packed. You are asked to count the number of apples that are packed in an hour. **Give a detailed account of the following:**



a. Where would you start?

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b. If you were told to estimate the number of apples packed in the hour, how would you go about it?

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c. If you were told to count the exact number of apples packed in an hour, how would you go about it?

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d. If you asked the driver of the tractor and he told you that he arrived every hour with a load of 10 picking baskets that could always fit approximately 100 apples each, how would it make your estimate easier?

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e. If you know that there are 50 apples packed in a box, ready for distribution, and at the end of an hour you find that 70 boxes have been filled, how would that make you accurate calculation task easier?

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2. Explore different counting patterns using a calculator:

a. Use the numbers 2, 3, 5, 10, 20, 25, 30 and 50. Skip counting by what numbers will include 100 as part of the pattern?

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b. What pattern do you see when you count by twos and begin with 2?

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c. What do you notice when you count by twos and begin with 1? Why?

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d. Will there be a pattern if you skip-count by fives and begin with 3? Why? Why not?

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e. What happens if you skip-count by tens and start with 37? What do you notice?

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Facilitator comments:

Assessment:



2.3

SO 6 AC 1-4

Complete these exercises in your workbook. Answer the questions about decimals.

My Name:

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My Workplace:

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My ID Number:

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Try these questions and see how you do:

1. Draw a line to match each number to its equivalent value in words.

106.7	Fourteen point nine six
324	Thirty-two point four
5.09	One hundred and six point seven
14.96	Five hundred and nine
509	Three hundred and twenty-four
32.4	Five point zero nine

2. Write each number as digits, putting in decimal points where needed.
 - a. One thousand and sixty five point two four _____
 - b. Fifty-seven point nine two _____
 - c. One hundred and one _____
 - d. Ten point one _____
 - e. Zero point five six _____

3. Write each of these decimal numbers using digits.

- a. Three and four tenths _____
- b. Sixteen and two hundredths _____
- c. Twenty five hundredth _____
- d. One and five thousandths _____
- e. Four hundred and five and three tenths _____
- f. Twenty six thousandths _____

4. Tick 'True' or 'False' for each of these statements (✓):

	True	False
a. Four hundredths = 0.04		
b. Five and six tenths = 50.6		
c. 14.07 = fourteen and seven thousandths		
d. Two point one six = two and six hundredths		
e. 59.008 = fifty nine and eight thousandths		
f. 9.019 = nine and nineteen thousandths		

5. Try these questions and see how you do.

- a. Which is greater, 5.7 or 5.18? _____
- b. Which is smaller, 2.19 or 2.6? _____
- c. 9.162 is more than 9.17 True or False? _____
- d. 0.175 is more than 0.2 True or False? _____
- e. Which is the largest, 96.145, 96.2 or 96.19? _____
- f. Which is the smallest, 25.62, 25.26 or 25.6? _____
- g. Put these in size order, largest first:
75.1, 25.7, 75.06, 25.008 _____
- h. Put these in size order, smallest first:
0.17, 0.8, 0.072, 0.06 _____

Facilitator comments:

Assessment:



4.1

SO 1 AC 1-3

Look up the meaning of each word in English, in the dictionary.

My Name:

My Workplace:

My ID Number:

Now look up the same or equivalent word in a dictionary in your mother tongue. Write down in your own mother tongue what you understand about each word.

1. Key words for **Addition**

Word	English Dictionary Meaning	What I understand it to mean in my mother tongue
Add		
Sum		
Altogether		
Increase		
Total		
More		
Plus		

2. Key words for **Subtraction**

Word	English Dictionary Meaning	What I understand it to mean in my mother tongue
Subtract		
Minus		
Decrease		
Difference		
Less than		
Take away		
Fewer than		
Reduce		

3. Key words for **Multiplication**

Word	English Dictionary Meaning	What I understand it to mean in my mother tongue
Multiply		
Multiple		
Times		
Sets of		
Lots of		
Groups of		
Factors		
Product		

4. Key words for division

Word	English Dictionary Meaning	What I understand it to mean in my mother tongue
Divide		
Divisible		
Left over		
Remainder		
Share		
Groups		

Facilitator comments:

Assessment:



5.1

SO 2 AC 1-5

Complete this exercise.

My Name:

My Workplace:

My ID Number:

Complete these mathematical sentences:

1. $9 - (4 \times 2)$	=	
2. $(9 - 4) \times 2$	=	
3. $(9 - 4) \times (2 \times 1)$	=	
4. $48 - [42 - (3 \times 9)]$	=	
5. $63 - [8/2 + (14 - 10)]$ (Note: $8/2$ is the same as 8 divided by 2, just like in fractions.)	=	
6. $[800 / (200 \times 4)]$	=	
7. $28 + [10 - (4 + 2)]$	=	
8. $(11-5) \times (10 + 14)$	=	
9. $125 / (5 \times 5)$ (Remember from number 5? $/$ = divided by.)	=	
10. $[28 - (4 \times 5)] - 4$	=	

My Notes ...

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Facilitator comments:

Assessment:



5.2
SO 2 AC 1-5

Complete these exercises.

My Name:
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My Workplace:
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My ID Number:
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Complete these mathematical sentences.

- Write down the mathematical expression for each of the following every day situations or problems: (You don't have to calculate the answer)

Samuel is 18 years of age. Zindi is 4 years old.

- The sum of Samuel and Zindi's ages?

Mathematical Sentence:

- Zindi's age in 6 years time?

Mathematical Sentence:

- Samuel's age 9 years ago?

Mathematical Sentence:

- Double Zindi's age?

Mathematical Sentence:

- The number of learners enrolled in the class are 40.
How many are present if 8 are absent today?

Mathematical Sentence:

- A train travels from Cape Town to Kayalitsha outside of peak hour.
At the first station 6 people get on; 5 get on at the next station and 4 at the third station. How many people are on the train?

Mathematical Sentence:

- The number of passengers left on a bus if 20 out of 75 got off at the first stop?

Mathematical Sentence:

- The amount of money you spent if you bought mealy meal @ R 11.99; bread @ R3.49; Margarine @ R5.50 and Curry Powder @ R2.60 ?

Mathematical Sentence:

- The amount of money you spent if you bought 6 new shirts at R25 each?

Mathematical Sentence:

2. Write down the mathematical expression for each of the following every day situations or problems: (You also have to calculate the answer)
- a. Nine tourists book flights to visit South Africa. Their flight tickets cost them R 3500 each. What is the total amount of money paid by the tourists to the airline?

Mathematical Sentence:

Answer :

- b. A learnership class of learners write a test. There are 14 learners in the class. The facilitator marks 70 questions in total. How many questions did each learner answer?

Mathematical Sentence:

Answer :

3. Make up your own examples of an everyday problem or situation that might be related to the following mathematical expressions.

1. Question:

$$24 / 4$$

What the problem could be:

2. Question:

$$R100 - R40 - R55$$

What the problem could be:

3. Question:

$$6 \times 4$$

What the problem could be:

4. Question:

$$22 + 55 + 68$$

What the problem could be:

Facilitator comments:

Assessment:



7.1

SO 4 AC 1-2

Complete this exercise.

My Name:

My Workplace:

My ID Number:

1. Tick off whether you think the statement is true or false.

- a. "Pi" is a real number.
- b. 2.52 is a real, rational number.
- c. $n + 5$ is an expression for "the sum of a number and five."
- d. 3 is an irrational number.
- e. "Twice a number divided by three" can be written as $2n - 3$.
- f. "Five decreased by twice a number" can be written as $5 - 2x$.
- g. "Ten less than a number" can be written as $10 - n$.
- h. An integer is not a rational number.

	True	False
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		

My Notes ...

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Facilitator comments:

Assessment:



7.3

SO 4 AC 1-2

Complete this exercise.
Applying the problem solving skills that you have learnt.

My Name:

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My Workplace:

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My ID Number:

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Have a go at solving these problems using addition and subtraction.

Question 1

Step 1 Read the problem	You arrive at the bus stop at 10.30am. Your bus is due at 10.45am. How many minutes will you have to wait?
Step 2 Organize the calculation	
Step 3 Answer the calculation	
Step 4 Answer the problem	

Question 2

Step 1 Read the problem	Your puppy needs to have its inoculations before it can go out for a walk. If the puppy is 8 weeks old when it has its first inoculation, you have to wait 6 weeks for its booster and another 4 weeks for the booster to take effect. How old will the puppy be when it can go out?
Step 2 Organize the calculation	
Step 3 Answer the calculation	
Step 4 Answer the problem	

Question 3

Step 1 Read the problem	You're buying cable for your hi-fi. You need one piece 3m long and one piece 7m long. If you buy a 15m roll, how much will you have left ?
Step 2 Organize the calculation	
Step 3 Answer the calculation	
Step 4 Answer the problem	

My Notes ...

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Facilitator comments:**Assessment:**

Assessment Feedback Form

Comments / Remarks	
Feedback to learner on assessment:	
Feedback from learner to assessor:	
Learner's Signature:	Date:
Assessor's Signature:	Date:

Am I ready for my test?

- ◆ Check your plan carefully to make sure that you **prepare in good time**.
- ◆ You have to be found **competent** by a qualified **assessor** to be declared competent.
- ◆ Inform the assessor if you have any **special needs** or requirements **before** the agreed date for the test to be completed. You might, for example, require an interpreter to translate the questions to your mother tongue, or you might need to take this test orally.
- ◆ Use this worksheet to help you prepare for the test. These are **examples of possible questions** that might appear in the test. All the information you need was taught in the classroom and can be found in the learner guide that you received.

1. **I am sure** of this and understand it well
2. **I am unsure** of this and need to ask the Facilitator or Assessor to explain what it means

Concept	1. I am sure	2. I am unsure
Counting systems from different cultures		
Our own		
How this counting system developed and its significance.		
Examples of how the systems might have been used		
The limitations of the system		
Egyptian		
How this counting system developed and its significance.		
Examples of how the systems might have been used		
The limitations of the system		
Roman		
How this counting system developed and its significance.		
Examples of how the systems might have been used		
The limitations of the system		
Different number base systems, what they are used for and how to translate between them		
Base 2		
Base 5		
Base 10		
Base 16		

Concept	1. I am sure	2. I am unsure
Place value, role of 0 in our number system, patterned nature of whole numbers, history and contestations.		
The development and significance of zero.		
Let's explore and understand the place value of numbers.		
Let's explore the patterned nature of whole numbers.		
The decimal number system		
The contestations around it		
How and why we use it		

Concept	1. I am sure	2. I am unsure
Different types of numbers		
The properties of whole numbers		
The properties of rational numbers		
The difference between rational and whole numbers		
The increasing density of each type of numbers		
Whole numbers as a subset of rational numbers.		

Concept	1. I am sure	2. I am unsure
Mathematical and number problem solving strategies – what are they and how can we use them?		
How to apply a problem solving strategy correctly according to a correct interpretation of the problem situation.		
Let's learn to estimate first.		
Now let's calculate...		
Why it is important to calculate accurately.		
How to ensure that your calculation follow some form of logical reasoning process, which is presented clearly.		

Concept	1. I am sure	2. I am unsure
How and why we should check and verify our own solutions.		
How and why we should check and verify the solutions of others.		
Explaining the reasoning process clearly.		
Justifying Solutions in terms of the context.		
Ensuring that our solutions are shown to be consistent with estimations and vice versa.		

Checklist for practical assessment ...

Use the **checklist** below to help you prepare for the part of the practical assessment when you are observed on the **attitudes** and **attributes** that you need to have to be found competent for this learning module.

When observed ...	Answer Yes or No	Motivate your answer (Give examples, reasons, etc.)
1. Can you identify problems and deficiencies correctly?		
2. Are you able to work well in a team?		
3. Do you work in an organised and systematic way while performing all tasks and tests?		
4. Are you able to collect the correct and appropriate information and / or samples as per the instructions and procedures that you were taught?		
5. Are you able to communicate your knowledge orally and in writing, in such a way that you show what knowledge you have gained?		
6. Can you base your tasks and answers on scientific knowledge that you have learnt?		
7. Are you able to show and perform the tasks required correctly?		
8. Are you able to link the knowledge, skills and attitudes that you have learnt in this module of learning to specific duties in your job or in the community where you live?		

- ◆ The assessor will complete a checklist that gives details of the points that are checked and assessed by the assessor.
- ◆ The assessor will write commentary and feedback on that checklist. They will discuss all commentary and feedback with you.
- ◆ You will be asked to give your own feedback and to sign this document.
- ◆ **It will be placed together with this completed guide in a file as part of your Portfolio of Evidence.**
- ◆ The assessor will give you feedback on the test and guide you if there are areas in which you still need further development.

Paperwork to be done ...

Please assist the assessor by filling in this form and then sign as instructed.

Learner Information Form				
Unit Standard	7447			
Program Date(s)				
Assessment Date(s)				
Surname				
First Name				
Learner ID / SETA Registration Number				
Job / Role Title				
Home Language				
Gender:	Male:		Female:	
Race:	African:	Coloured:	Indian/Asian:	White:
Employment:	Permanent:		Non-permanent:	
Disabled	Yes:		No:	
Date of Birth				
ID Number				
Contact Telephone Numbers				
Email Address				
Postal Address				Signature: