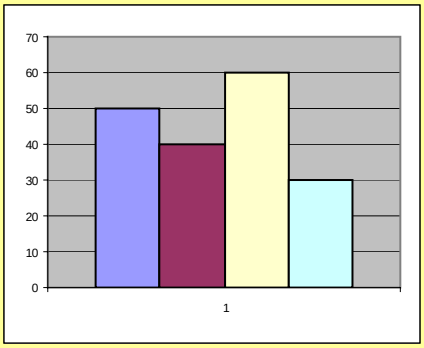
NQF Level: 1 **US No: 7451**

Learner Guide

Primary Agriculture

Collect, analyse, use and communicate numerical data



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Before we start...

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

Title:	Collect, analyse, use and communicate numerical data				
US No:	**7451**	**NQF Level:**	1	**Credits:**	2

The full unit standard will be handed to you by your facilitator. 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:

Title	ID Number	NQF Level	Credits	Mark
National Certificate in Animal Production	48970	1	120	☐
National Certificate in Mixed Farming Systems	48971	1	120	☐
National Certificate in Plant Production	48972	1	120	☐

Please mark the learning program you are enrolled in:

Your facilitator should explain the above concepts to you.

Are you enrolled in a:	Y	N
Learnership?	☐	☐
Skills Program?	☐	☐
Short Course?	☐	☐

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.

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.

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.

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What are we going to learn?

What will I be able to do?

This Unit Standard is designed to provide credits towards the mathematical literacy requirement of the NQF at Level 1. The essential purposes of the mathematical literacy requirement are that, as the learner progress with confidence through the levels, the learner will grow in:

- A confident, 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
- Identify situations for investigation and data collection, collect d
- Classify and analyse data.
- Summarise and display organized data
- Extract and interpret information from various forms of display, communicate findings and critically evaluate information; and
- Demonstrate understanding of the concept of chance and simple probabilities.

Learning Outcomes

In this Learning Guide, you will cover the content and skills you need to master the following learning outcomes:

- Select and use data from tables.
- Record and organise data.
- Calculate statistical data
- Use scales to represent statistical data
- Represent data
- Determine the trend from a data model
- Justify the trend you have identified
- Explain a graph in written or oral format

What do I need to know?

The following competency at ABET Numeracy level 3 is assumed to be in place:

- The ability to construct and use tables and graphs to organise and interpret information

Tips for the learner

- There are many activities for this Module. Get organised before you begin, by making sure you have a folder to organise your completed written work into a Portfolio of Evidence.
- As you read through the module, make your own notes. Keep all your notes in a file. They will be useful in later modules and for your assessment activities.
- Keep a simple journal about what you are learning. Each week, write comments about the course, about what you are learning and whether or not you are finding it useful.
- Talk to your facilitator about any difficulties you are having with information or ideas. Your facilitator is a learning resource for you.
- Throughout this course think about your own experiences as much as possible. Try to relate what you are learning to your own real life experiences. This will make the course more meaningful for you.

My Notes ...

Session 1

Collect numerical data and apply various techniques to organize data

After completing this session, you should be able to:
SO 1: Identify situations for investigation and data collection, collect data.

In this session we explore the following concepts:

- know when data can be collected
- collect data correctly in different ways
- record data in different ways

Open any newspaper or magazine and you will see a number of tables, charts and graphs that are trying to give you information in a concise manner. Information that is expressed in terms of numbers is called data. There are a number of steps that must be followed before you can present information in this way:

- You need to decide exactly what information you need.
- You must go out and collect the information in the correct manner.
- You must record the information somehow
- The information needs to be organized in some way.
- Calculations need to be made.

Then only can the data be presented in a graph, picture or other format.

- The petrol price over the last twelve months
- The amount of money you have spent per month on food during the last year.
- The number of heads of cattle that a dairy farmer has on his farm over a period of 10 years
- Monthly rainfall over the last 5 years

These are all examples of data collection. The data are ultimately summarized in some form of picture so that anyone glancing at it can identify a trend.

Please complete Activity **1** in your learner workbook

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1.1 What type of data can be collected?

Any situation where numbers can be recorded lends itself to data collection. Any situation that relies on a "yes" or "no" answer is not a good example of data collection. For example: You ask a number of people whether they would like some chocolate right away. If you ask the question just after the people have had a big meal, you will get a very different answer than if you ask them the same question when they are very hungry.

Please complete Activity **2** in your learner workbook

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1.2 Collection of data

Before you start to collect data you need to be very clear about what you are trying to find out.

Example:

If you ask the question "How much pocket money does a child get?" you will run into trouble.

The question you are asking is too vague and you need to define it much more clearly.

It is not clear whether this is the pocket money of a six-year old or of a 15-year old. Is the pocket money paid weekly or monthly? Does the child come from a high or low income bracket? Is the pocket money only for treats or do essentials need to be bought with it?

Your question would be much better if you asked:" How much pocket money (in Rands) does a 15-year old from Pretoria East receive per month for treats."

The question that you ask must contain the following;

- Units in which measurements are to be made
- A time frame for the measurements
- A location
- A clear definition of what is to be measured

Please complete Activity **3 and 4** in your learner workbook

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1.3 Recording of data

Before you begin to collect data you need to plan how the data will be recorded. Sometimes data is simply **listed**.

Example:

Shoe sizes of a group of 17 year old boys:

10, 9, 10, 9, 11, 10, 10, 9, 11, 8, 12, 13, 10

When data is listed it is very difficult to make sense of the information, especially when there are a lot of numbers.

The most convenient way of recording data is by **using a table**. A table consists of rows and column. Usually the independent variable is found in the first row. The independent variable reflects the categories that you have chosen.

The dependent variable is found in the columns. The dependent variable is the measurement that belongs with the matching independent variable.

If there are many independent variables, then the independent variable can also be placed in the first column for the sake of convenience. You must always be aware which one is the independent variable!!!

Note: Every table needs a detailed heading.

Example:

Table showing the bread price of white "government loaf" over the last six months

You decided to record for the months January to June.
This is the independent variable.

Month	January	February	March	April	May	June
Price in R						

The price in January was R__.__. The price depends on which month you chose to measure in. The actual price is the dependent variable.

Example

Table showing the number of students at Blikkiesfontein College in 2005

Number of students	African	Coloured	Asian	White
Male	56	45	78	12
Female	68	52	62	14
Total	**124**	**97**	**140**	**26**

Row

Column

Please complete Activity **5 and 6** in your learner workbook

My Notes ...

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1.4 Interpretation of data

The interpretation of data is very simple if you are able to work through it systematically. The most important features of data are:

- frequency
- average
- modus
- median
- range
- Frequency

  Frequency is the number of times a certain value appears in a series of data.

  Example: Let us take the list of shoe sizes of 17-year old boys given earlier.

  10, 9, 10, 9, 11, 10, 10, 9, 11, 8, 12, 13, 10

The information given in the list does not make much sense and needs to be better organized. We could organize the data in a frequency table, i.e. a table that shows us how often a certain shoe size is listed.

If we put this series of data in a table, then the frequency would be much clearer:

Number	Tally	Frequency
8	I	1
9	III	3
10	~~IIII~~	5
11	II	2
12	I	1
13	I	1
		13

Note: When you are using the tally system to determine the frequency, you will draw a line for every time something occurs, i.e. I. When it occurs four times, you draw four lines, i.e. I I I I, but when you reach the fifth occurrence, you do not draw the fifth line next to the other four, but you draw a line through the other our lines to show that you have reached 5, i.e. ~~I I I I~~. It makes it much easier to count when you reach the end.

- Average

Adding together all the values and then dividing it by the number of items calculate the average of a set of data. The average is also known as the **mean**.

Example:

We will use our previous set of data:

10, 9, 10, 9, 11, 10, 10, 9, 11, 8, 12, 13, 10

To calculate the average, we first add together all the values:

10 + 9 + 10 + 9 + 11 + 10 + 10 + 9 + 11 + 8 + 12 + 13 + 10 = 124

Then we count how many items are there, i.e. 13

10; 9; 10; 9; 11; 10; 10; 9; 11; 8; 12; 13; 10

1 2 3 4 5 6 7 8 9 10 11 12 13

Average = (Sum of all the values) ÷ (number of items)

= 124 ÷ 13

= 9, 5

The average shoe size of this particular group of boys is 9 ½

- Mode

  The mode is the number that occurs most frequently in the series of data. In the series of data below, the mode is 10.

  10, 9, 10, 9, 11, 10, 10, 9, 11, 8, 12, 13, 10

- Median

  The median in a series of data is the number that is exactly in the middle, or halfway between two numbers in the middle.

  Example:

  From our set of data:

  10, 9, 10, 9, 11, 10, 10, 9, 11, 8, 12, 13, 10

  We re-arrange it in chronological (numerical) order:

  8; 9; 9; 9; 10; 10; 10; 10; 10; 11; 11; 12; 13

  The **median** in this set of data is 10.

- Range

  The range is the difference between the highest number and the lowest number in a set of data.

  The range in the set of data we have been using as an example will be as follows:

lowest number	8; 9; 9; 9; 10; 10; 10; 10; 10; 11; 11; 12; 13	highest

Range = Highest Number – Lowest Number

= 13 – 8

= 5

Please complete Activity **7** in your learner workbook

My Notes ...

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1.5 Stem and leaf table

A stem-and-leaf method is similar to tally counting. Instead of using tallies, the given data is divided (by a vertical line) into stems on the left and leaves on the right.

Example:

24 Learners obtained the following marks out of 50 for a test.

49 38 31 27 20 48 37 31

23 41 33 10 15 34 22 35

21 39 31 27 20 19 35 26

The first digit forms the stem and the second digit the leaf.

The stem-and-leaf table will look like this:

1	0; 5; 9;	3
2	0; 0; 1; 2; 3; 6; 7; 7;	8
3	1; 1; 1; 3; 4; 5; 5; 7; 8; 9;	10
4	1; 8; 9;	3
↓	↓	24
Stem	**Leaf**	Check the total:

3 + 8 + 10 + 3 = 24

All data is shown on the table even if it appears many times.

From this stem-and-leaf table, we can conclude the following information:

- the frequency of learners who got 31marks is 3
- the average mark of the learners lies between 30 and 35
- the range is: 49 – 10 = 39

Please complete Activity **8** in your learner workbook

My Notes ...

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Concept (SO 1)	I understand this concept	Questions that I still would like to ask
Situations for data collection are identified in terms of the purpose of data collection.		
Appropriate methods are selected to collect data.		
A variety of appropriate data collection methods are used to collect data from primary and secondary sources.		
The potential misuse of data.		
Reasons for and limitations of using sampling are described.		

My Notes ...

Session 2 Represent data in different ways

After completing this session, you should be able to:
SO 2: Classify and analyse numerical data.

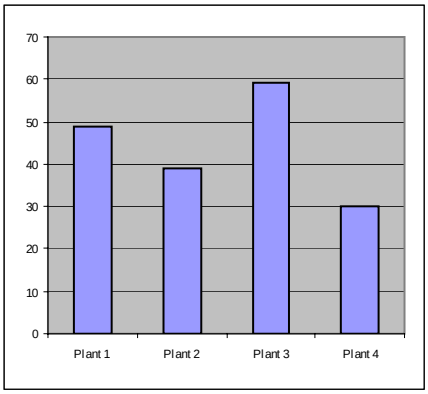
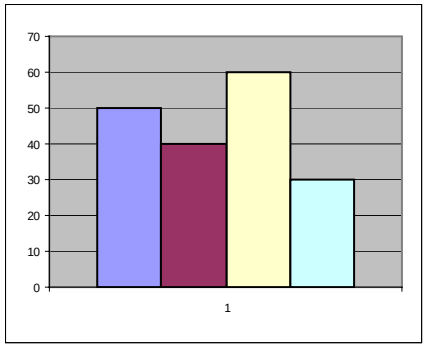
In this session we explore the following concepts:

- Presenting data as graphs
- Using scales to represent statistical data
- Organizing data for a meaningful analysis.

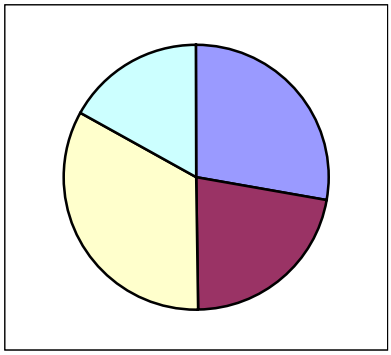
Graphs

Graphs are visual representations of what is written in a data table. There are many types of graphs that we can use and it usually depends on what you need to represent and to whom the representation is made.

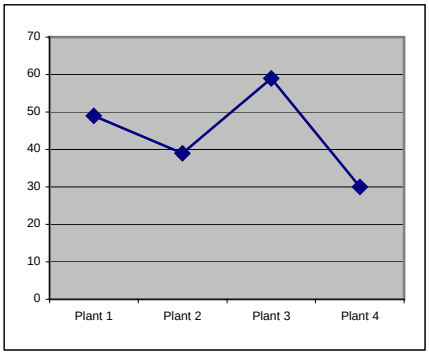
Example

Bar graph	Histogram
	

Pie Chart



Broken Line Graphs



Pictogram

Jan	Feb	Mar	Apr	May
$		$		
$		$		
$	$	$		
$	$	$		
$	$	$	$	
$	$	$	$	$

Please complete Activity **9** in your learner workbook

My Notes ...

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2.1 Pictogram

Pictograms are graphs that show us data by using identical pictures instead of figures and lines.

Example

Susie has counted how many telephone calls the people in her department make during the day. This is the data she has collected:

Name	Total number of calls made
Janie	63
Henry	77
Thea	47
Malvin	49
Thys	44

She decides to draw up a pictogram to show the data she has collected. First she rounds off the number of phone calls to the nearest ten:

Name	Total	Rounded off
Janie	63	60
Henry	77	80
Thea	47	50
Malvin	49	50
Thys	44	40

And then she uses a scale.

(= 10 Telephone calls

Finally she draws up a pictogram to show the number of calls made by each person.

Name	Total Telephone Calls for the Day
Janie	((((((
Henry	((((((((
Thea	(((((
Malvin	(((((
Thys	((((

The pictogram shows the number of telephone calls made in a visual and graphic way.

Please complete Activity **10** in your learner workbook

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2.2 Bar graphs and Histograms

A bar graph and a histogram can be used when the data needs to be grouped into periods and the frequency of each period needs to be clarified.

The difference between the bar graph and the histogram is as follows: when we draw a histogram, we do not leave spaces between the columns as with the bar graph. (Learning tip: the words *bar graph* have a space. Bar graphs have spaces. The word *histogram* has no space, the actual graph has no spaces.)

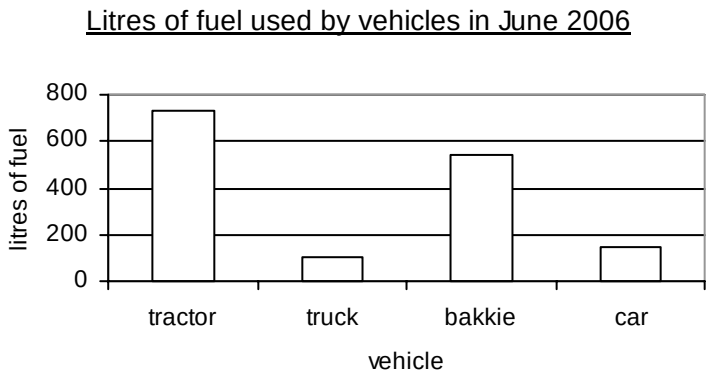
Bar graphs are used when the data classes are not continuous e.g. in comparing the annual yield of carrots, tomatoes and potatoes of a vegetable farm. There is no intermediate between carrots and tomatoes. The classes are different from each other.

Example of a bar graph:

A farmer wants to compare the amount of fuel used by a number of vehicles on his farm. He has summarized the data in a table.

Vehicle	Tractor	Truck	Bakkie	Car
Litres of fuel used in June 2006	730	100	545	150

He must construct a bar graph, because a truck is very different to a car.



Data that is presented in a bar graph can also be shown as a pie chart.

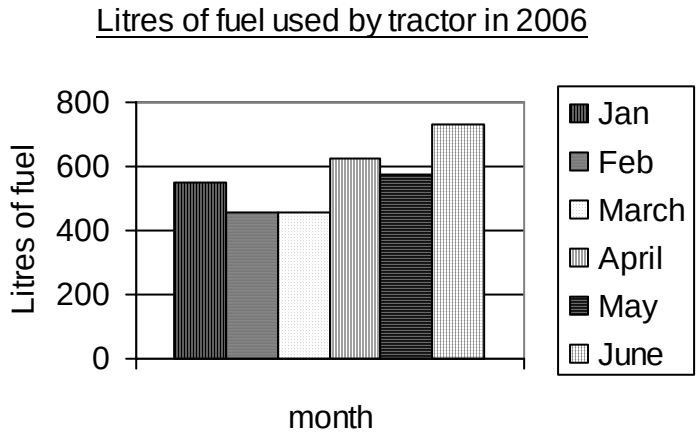
Histograms are used if the data classes are continuous. For example, a farmer wants to see how many tons of carrots a certain field produced per year from 2000 to 2006. There are no spaces between the bars, because 2000 borders on 2001. Time is continuous. He could also use a line graph.

Example of a histogram:

The same farmer wants to compare the amount of fuel used by his tractor each month from January to June.

Month	Jan	Feb	March	Apr	May	June
Litres of fuel used by tractor	550	456	458	624	576	730

He must draw a histogram because time is continuous.



Please complete Activity **11** in your learner workbook

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2.3 Pie Graphs

Pie graphs are graphs that represent the data as segments of a circle. The various data will take up a certain angle of the total angles in a circle (360º).

Example
In a community, a researcher named Janet is collecting information about how many people have access to telephones. She goes about asking questions to the community and arrives home with the following data:

Table showing how many people have access to telephones

Details	**Home phone**	**Cell phone**	**Public phone**	**No access**	**Total**
No of people	33	42	50	23	**148**

Janet now calculates the percentage and the segment of 360º that she will use to draw up the pie graph:

Calculation table

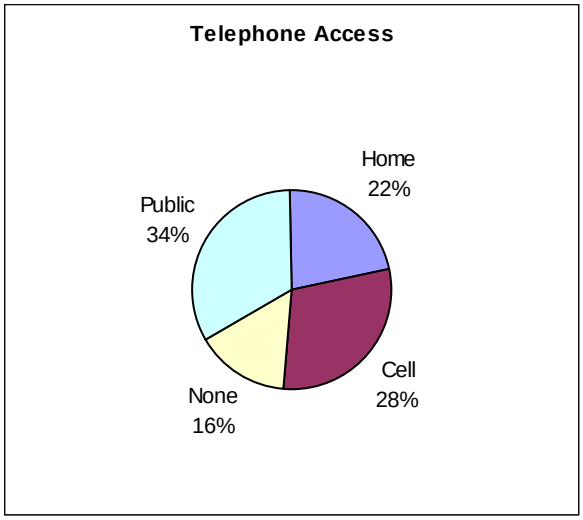
Details	**Home phone**	**Cell phone**	**Public phone**	**No access**	**Total**
No of people	33	42	50	23	148
% of total	$^{33}/_{148}$ x 100 ≈ 22,3%	$^{42}/_{148}$ x 100 ≈ 28,4%	$^{50}/_{148}$ x 100 ≈ 33,8%	$^{23}/_{148}$ x 100 ≈ 15,5%	100
Degrees of 360º	$^{33}/_{148}$ x 360º ≈ 80º	$^{42}/_{148}$ x 360º ≈ 102º	$^{50}/_{148}$ x 360º ≈ 122º	$^{23}/_{148}$ x 360º ≈ 56º	360

She checks her calculations:

Percentage 22, 3 + 28, 4 + 33, 8 + 15, 5 = 100

Degrees 80 + 102 + 122 + 56 = 360

Now she can draw her Pie Graph:



If you measure the angles of the different segments, you will find that they are exactly as worked out in the calculation table.

Pie charts are best used if there are six or less sets of data.

Please complete Activity **12** in your learner workbook

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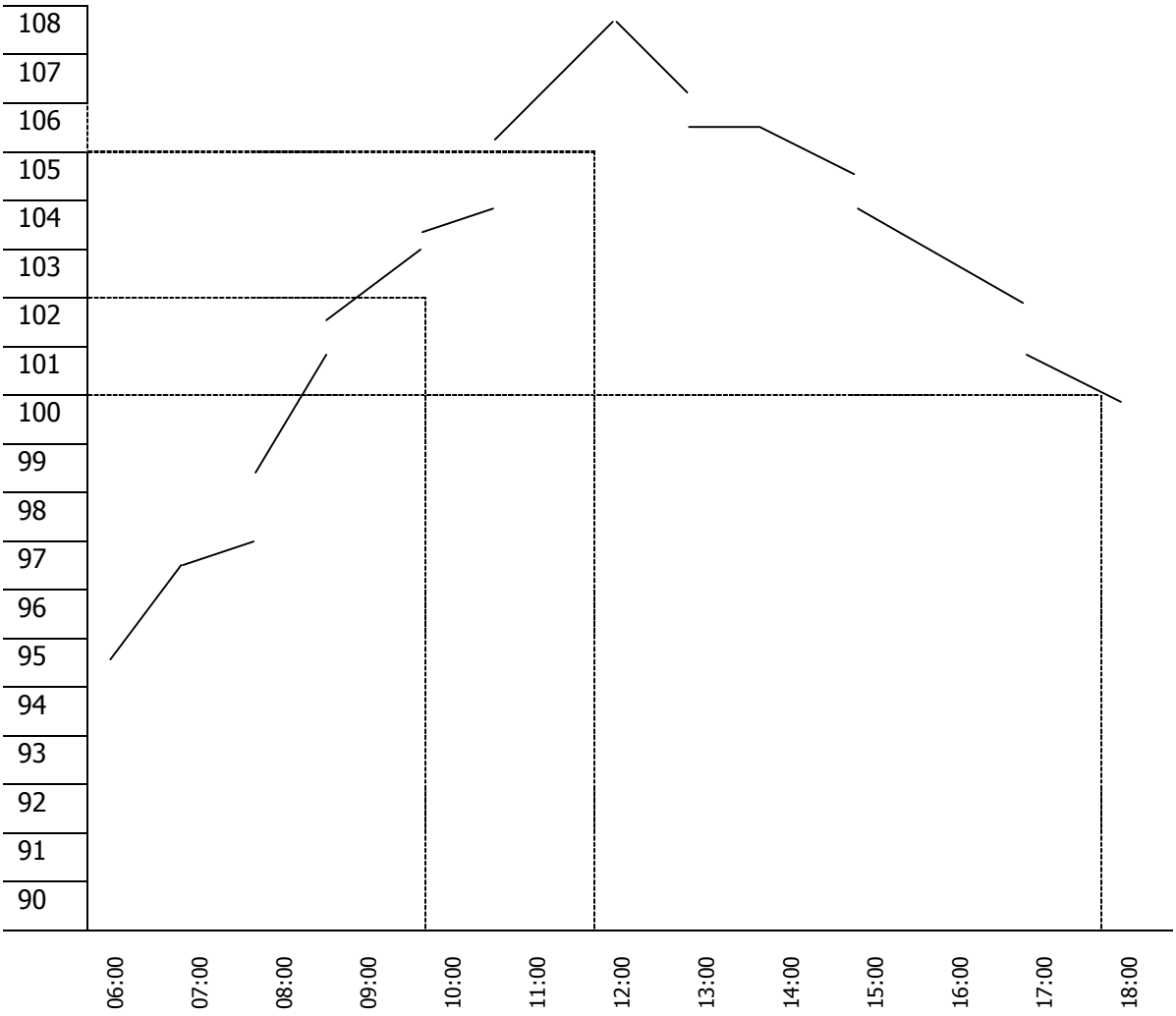
2.4 Broken line graphs

When we were drawing the bar graph and histogram, we used the whole column to show our data. With a broken line graph, we will only use points, not full columns. Broken line graphs are usually only used when there is some connection between the sets of data. i.e. a histogram could also be presented as a broken line graph.

Example
At WITWAT Manufacturing, the production manager has collected data with regards to the temperature at which a certain machine runs over a 12 hour period.

Broken Line Graph of Machine Temperature



If the production manager wants to see what the temperature on the machine was at different times, then he can read it from the graph, i.e.:

- At 09:00 the temperature of the machine was 102º
- At 11:30 the temperature of the machine was 105º
- At 17:30 the temperature of the machine was 100º

He can also read the following information from the graph:

- At what time the machine is running at the highest temperature
- At what time the machine is running at the lowest temperature
- At what time the machine if running at 100º, etc.

Please complete Activity **13** in your learner workbook

My Notes ...

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Concept (SO 2)	I understand this concept	Questions that I still would like to ask
Data are organized for meaningful analysis.		
Analytical tools are used correctly and appropriately to analyse data.		
The differences between the uses of mean, median and mode are described.		

My Notes ...

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Session 3 Misrepresentation of data and probability

After completing this session, you should be able to:
SO ?: Summarise and display organized numerical data.

In this session we explore the following concepts:

- Identifying misrepresented data
- Understanding probability

Misrepresentation of data

Statistics has often been called "lying with numbers". Data can easily be misrepresented to lead you to an incorrect conclusion. The facts could be correct but the way they are presented can be misleading.

Please complete Activity **14** in your learner workbook

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Probability

Probability is the possibility or chance that something might occur.
We work out probability by dividing the number of successful outcomes by the total number of possible outcomes.

Example

Every Saturday night we watch the lotto and the winner of the game show gets to draw a ball from a variety of balls in a round canister. We want to work out what the probability is of the winner drawing the red ball, which will make him the winner of a car.

First we have to find out how many balls are in the canister:

5 green balls

6 yellow balls

1 red ball (the winning ball)

There are 5 + 6 + 1 = 12 balls in the canister

$$\text{Probability (P)} = \frac{number\ of\ successful\ outcomes}{total\ number\ of\ possible\ outcomes}$$

Probability (Green ball) = $^{5}/_{12}$

Probability (Yellow ball) = $^{6}/_{12}$

Probability (Red ball) = $^{1}/_{12}$

So the chance of the winner drawing a red ball is 1 out of 12.

Concept (SO 3)	I understand this concept	Questions that I still would like to ask
The form of display is appropriate to the data and the context, and is justified in terms of the appropriateness.		
The scale is selected and used for a reasonable presentation of the data, and the scale is justified in terms of its reasonableness.		
Different forms of display are identified and evaluated in terms of their purposes.		

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Glossary

Term	Description
Average	Also known as the mean, it is adding together all the values and then dividing it by the number of items
Bar Graphs	Used when the data classes are not continuous
Frequency	The number of times a certain value appears in a series of data.
Histogram	Used if the data classes are continuous
Median	A series of data is the number that is exactly in the middle, or halfway between two numbers in the middle.
Mode	The number that occurs most frequently in the series of data.
Pictogram	Graphs that show us data by using identical pictures instead of figures and lines
Pie graphs	Graphs that represent the data as segments of a circle.
Probability	The possibility or chance that something might occur.
Range	The difference between the highest number and the lowest number in a set of data.

My Notes ...

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Terms & Conditions

Acknowledgements

- **Project Management:**
  M H Chalken Consulting
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- **Developer:**
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- **Authenticator:**
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- **Design:**
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- **Layout:**
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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED UNIT STANDARD:

Collect, analyse, use and communicate numerical data

SAQA US ID	**UNIT STANDARD TITLE**		
7451	Collect, analyse, use and communicate numerical data		
SGB NAME	**NSB**	**REGISTERING PROVIDER**	
SGB Math. Literacy Mathematics and Math Sciences	NSB 10-Physical, Mathematical, Computer and Life Sciences		
FIELD		**SUBFIELD**	
Physical, Mathematical, Computer and Life Sciences		Mathematical Sciences	
ABET BAND	**UNIT STANDARD TYPE**	**NQF LEVEL**	**CREDITS**
ABET Level 4	Regular-Fundamental	Level 1	2
REGISTRATION STATUS	**REGISTRATION START DATE**	**REGISTRATION END DATE**	**SAQA DECISION NUMBER**
Reregistered	2003-12-03	2006-12-03	SAQA 1351/03

PURPOSE OF THE UNIT STANDARD

People credited with this unit standard are able to:

- Identify situations for investigation and data collection, collect data;
- Classify and analyse data;
- Summarise and display organised data;
- Extract and interpret information from various forms of display, communicate findings and critically evaluate information; and
- Demonstrate understanding of the concept of chance and simple probabilities.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

The following competency at ABET Numeracy level 3 is assumed to be in place:

The ability to construct and use tables and graphs to organise and interpret information.

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Identify situations for investigation and data collection and collect numerical data.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Situations for data collection are identified in terms of the purpose for data collection.

ASSESSMENT CRITERION 2

2. Appropriate methods are selected to collect data.

ASSESSMENT CRITERION 3

3. A variety of appropriate data collection methods are used to collect data from primary and secondary sources.

ASSESSMENT CRITERION RANGE

Surveys, books, interviews, observations, tally sheets and questionnaires.

ASSESSMENT CRITERION 4

4. The potential misuse of data achieved through the data collection method is described.

ASSESSMENT CRITERION 5

5. Reasons for and limitations of using sampling are described.

SPECIFIC OUTCOME 2

Classify and analyse numerical data.

OUTCOME RANGE

Grouped and ungrouped data.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Data is organised for meaningful analysis.

ASSESSMENT CRITERION RANGE

Classification, ordering, listing.

ASSESSMENT CRITERION 2

2. Analytical tools are used correctly and appropriately to analyse the data.

ASSESSMENT CRITERION RANGE

Median, mean, modes, frequency, range.

ASSESSMENT CRITERION 3

3. The differences between and uses of mean, median and mode are described.

SPECIFIC OUTCOME 3

Summarise and display organised numerical data.

OUTCOME RANGE

Graphs: pie, frequency polygon, histogram, simple bar graph, stem and leaf.
Tables, basic tree diagrams.
Display may be through different technologies.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. The form of display is appropriate to the data and context, and is justified in terms of its appropriateness.

ASSESSMENT CRITERION 2

2. The scale is selected and used for a reasonable presentation of the data, and the scale is justified in terms of its reasonableness.

ASSESSMENT CRITERION 3

3. Different forms of display are identified and evaluated in terms of their purposes.

SPECIFIC OUTCOME 4

Extract, interpret and critically evaluate information from various forms of display.

OUTCOME NOTES

Extract, interpret and critically evaluate information from various forms of display and communicate findings.

OUTCOME RANGE

Graphs: pie, frequency polygon, histogram, simple bar graph, stem and leaf.
Tables, basic tree diagrams.
Display may be through different technologies.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. The information extracted from the display is consistent with the display.

ASSESSMENT CRITERION 2

2. The information is interpreted to form informed opinions.

ASSESSMENT CRITERION 3

3. Displays that distort information are identified and the manner in which they distort information is described.

ASSESSMENT CRITERION 4

4. The effect of distortions in displays is described in terms of the impact on meaning in social, socio-historical, political and economic contexts.

ASSESSMENT CRITERION 5

5. Projections or predictions are made in a manner that is consistent with the display.

ASSESSMENT CRITERION 6

6. The information is analysed to determine and report on the validity of data collection methods, forms of display and projections that are made.

ASSESSMENT CRITERION 7

7. Communication of findings is clear, consistent with the display and makes use of accepted terminology.

SPECIFIC OUTCOME 5

Demonstrate understanding of the concept of chance and calculate simple probabilities.

OUTCOME RANGE

Limited to systematic counting strategies.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Situations are identified in which chance arises.

ASSESSMENT CRITERION 2

2. Simple probabilities are determined.

ASSESSMENT CRITERION 3

3. Statements of chance are correctly interpreted.

ASSESSMENT CRITERION 4

4. The number of combinations and the probability of a particular event are determined.

ASSESSMENT CRITERION 5

5. Probabilities are used to address simple real or simulated problems.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING

Identify and solve mathematical problems in which responses display that responsible decisions using critical and creative thinking have been made.

UNIT STANDARD CCFO ORGANIZING

Organise and manage oneself and one`s activities responsibly and effectively.

UNIT STANDARD CCFO COLLECTING

Collect, analyse, organise critically evaluate numerical data.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively using numerical data.

UNIT STANDARD CCFO DEMONSTRATING

Understand the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.