ZIMBABWE

MINISTRY OF PRIMARY AND SECONDARY EDUCATION

STATISTICS SYLLABUS

FORMS 3 - 4

2015 - 2022

Curriculum Development and Technical Services
P.O. Box MP 133
Mount Pleasant
Harare

© All Rights Reserved
2015
ACKNOWLEDGEMENT

The Ministry of Primary and Secondary Education wishes to acknowledge the following for their valued contribution in the production of this syllabus:

- The National Statistics Syllabus Panel
- Zimbabwe School Examinations Council
- Ministry of Higher and Tertiary Education, Science and Technology Development
- Publishers
- United Nations Children’s Fund (UNICEF)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)
CONTENTS

ACKNOWLEDGEMENT.................................................................................................................. i

CONTENTS..................................................................................................................................... ii

1.0 PREAMBLE............................................................................................................................... 1

2.0 PRESENTATION OF SYLLABUS............................................................................................. 1

3.0 AIMS.......................................................................................................................................... 1

4.0 SYLLABUS OBJECTIVES........................................................................................................ 2

5.0 METHODOLOGY AND TIME ALLOCATION............................................................................ 2

6.0 TOPICS...................................................................................................................................... 2

7.0 SCOPE AND SEQUENCE......................................................................................................... 3

8.1 FORM THREE........................................................................................................................... 9

8.2 FORM 4...................................................................................................................................... 20

9.0 ASSESSMENT........................................................................................................................... 28
1.0 PREAMBLE

1.1 Introduction

The Forms 3 - 4 Statistics syllabus is a two-year learning phase which is designed to promote critical thinking, problem solving, analytical and organisational skills. The subject seeks to equip learners with knowledge which lays a foundation for its application in other learning areas, further studies and for future careers. It creates awareness of their immediate environment, enables them to solve socio-economic problems and make informed decisions.

1.2 Rationale

Statistics is significant to the development of the Zimbabwean society. The knowledge of statistics enables learners to develop statistical skills such as research and analytical competencies essential for sustainable development. The importance of statistics can be underpinned in inclusivity and human dignity (Unhu/Ubuntu/Vumunhu) as it plays a pivotal role in careers such as education, medicine, agriculture, meteorology and engineering.

The statistics syllabus enables learners to develop skills in:
- Problem solving
- Critical thinking
- Decision making
- Leadership
- Self-management
- Communication
- Technology and innovation
- Enterprise

1.3 Summary of Content

The syllabus is designed to cover Forms 3-4 of secondary education in statistics which will lay a firm foundation for its application in other learning areas, further studies and career development. The syllabus covers theory and practical activities in data collection, presentation, interpretation, analysis and statistical inferences. Learners’ performance will be evaluated through summative and continuous assessment.

1.4 Assumptions

It is assumed that learners:
- can carry out arithmetic operations
- engage in logical thinking
- have a basic knowledge of statistics
- have prior knowledge of ICT

1.5 Cross Cutting Themes

In order to foster competence development for further studies, life and work, the teaching and learning of Statistics at forms 3 - 4 should integrate the following cross cutting themes:
- Enterprise skills and financial literacy
- Digital literacy
- Collaboration
- HIV and AIDS
- Heritage studies
- Human Rights
- Gender
- Environmental issues
- Disaster Risk management

2.0 PRESENTATION OF SYLLABUS

The Statistics Forms 3 -4 syllabus is presented as one document. The syllabus has aims, objectives, methodology and time allocation, topics, scope and sequence, competency matrix and assessment.

3.0 AIMS

The syllabus enables learner to:

3.1 develop an appreciation of the role of statistics in national development
3.2 effectively use ICT tools to solve statistical problems
3.3 apply statistical knowledge and skills in other disciplines
3.4 develop a statistical foundation for further studies
3.5 use statistical data with integrity (Unhu/Ubuntu/Vumunhu)
3.6 value heritage, history and culture through research and statistical inferences
3.7 acquire entrepreneurship and leadership skills
in an indigenised economy through research and project based learning

3.8 develop critical and logical thinking

4.0 SYLLABUS OBJECTIVES

By the end of the course learners should be able to:

4.1 define statistics and statistical terms
4.2 collect and present data in written, graphical, diagrammatical and tabular form
4.3 draw inferences through manipulation of statistical data
4.4 relate statistical concepts to real life situations
4.5 carry out statistical calculations
4.6 construct statistical arguments through appropriate use of precise statements and logical deduction
4.7 use ICT tools in statistical analysis
4.8 carry out statistical research projects

5.0 METHODOLOGY AND TIME ALLOCATION

5.1 Methodology

The following learner centred and participatory methods are recommended in the teaching of Statistics:

- Demonstrations
- Discovery
- Experimentation
- Group work
- Question and answer
- Problem solving
- Discussion
- Research and Presentations
- Project-based learning
- Simulation and modelling

The above suggested methods should be enhanced through the application of multisensory approaches to teaching and learning and principles of individualization, unification, concreteness, stimulation and self-activity

5.2 Time Allocation

The learning area should be allocated 5 periods of 40 minutes each per week.

6.0 TOPICS

6.1 Introduction to Statistics
6.2 Data Collection and Presentation
6.3 Measures of Central Tendency
6.4 Measures of Dispersion
6.5 Sampling
6.6 Probability
6.7 Random Variables
6.8 Errors
6.9 Index Numbers
6.10 Time Series
6.11 Linear Regression
### 7.0 SCOPE AND SEQUENCE

**TOPIC 7.1.0 INTRODUCTION TO STATISTICS**

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
</table>
| Introduction to statistics | • Statistical terms  
  - Statistics  
  - Data  
  - Frequency  
  - Tally system  
  - Descriptive  
  - Inferential |                                                                        |
| Importance of Statistics | • Statistics in the  
  - home  
  - School  
  - community | • Techniques of collecting data  
  • Methods of representing data |

**TOPIC 7.1.1 DATA COLLECTION AND PRESENTATION**

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
</table>
| Types of Data              | • Types of data  
  - Primary data and secondary data  
  - Grouped and ungrouped  
  - Qualitative and quantitative  
  - Discrete and continuous |                                                                        |
| Methods of collecting data | • Methods of collecting data:  
  - Survey  
  - Observational Study  
  - Census  
  - Experiment | • Techniques of collecting data:  
  - Observation  
  - Questionnaire  
  - Interviews |
## TOPIC 7.1.2 DATA COLLECTION AND PRESENTATION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of representing data</td>
<td>• Pictogram</td>
<td>• Graphs</td>
</tr>
<tr>
<td></td>
<td>• Pie chart</td>
<td>- Line graphs</td>
</tr>
<tr>
<td></td>
<td>• Bar chart</td>
<td>- Histograms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Frequency polygon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cumulative curve</td>
</tr>
</tbody>
</table>

## TOPIC 7.1.3 MEASURES OF CENTRAL TENDENCY

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean, mode and median of ungrouped data and grouped data</td>
<td>• Ungrouped data</td>
<td>• Grouped data</td>
</tr>
<tr>
<td></td>
<td>- Mean</td>
<td>- Mean</td>
</tr>
<tr>
<td></td>
<td>- Mode</td>
<td>- Mode</td>
</tr>
<tr>
<td></td>
<td>- Median</td>
<td>- Median</td>
</tr>
</tbody>
</table>

## TOPIC 7.1.4 MEASURES OF DISPERSION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>• Identify highest and lowest values of ungrouped data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Define range of ungrouped data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Calculate range of raw data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• State advantages and disadvantages of using data</td>
<td></td>
</tr>
</tbody>
</table>
### TOPIC 7.1 5 MEASURES OF DISPERSION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
</table>
| Measures of relative position | • Ungrouped data
  - Quartiles
  - In quartile range
  - Semi quartile range     | • Grouped data
  - Quartiles of grouped data
  - In quartile range
  - Semi quartile range
  - Percentiles
  - Deciles                |
| Variance and Standard deviation | • Variance
  • Standard deviation          | • Variance
  • Standard deviation          |

### TOPIC 7.1 6 SAMPLING

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
</table>
| Sampling – key terms          | • Sampling
  • Population
  • Randomness
  • Sample Survey
  • Census                  |                                                                                       |
| Sampling – techniques         | • Random sampling
  • Non-random sampling
  • Biased sampling
  • Representative sample    | • Simple random sampling
  • Systematic sampling
  • Stratified sampling
  • Cluster sampling
  • Quota sampling
  • Convenient Sampling       |
## TOPIC 7.1 7 PROBABILITY

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability – key terms</td>
<td>• Probability&lt;br&gt;• Trial&lt;br&gt;• Sample space&lt;br&gt;• Outcome&lt;br&gt;• Events&lt;br&gt;• Experiment</td>
<td></td>
</tr>
<tr>
<td>Experimental and theoretical</td>
<td>• Experimental probability&lt;br&gt;• Theoretical probability</td>
<td></td>
</tr>
<tr>
<td>probability</td>
<td></td>
<td>• Combined events&lt;br&gt;• Probability space&lt;br&gt;• Probability rules&lt;br&gt;• Conditional; probability</td>
</tr>
<tr>
<td>Combined events</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## TOPIC 7.1 8 RANDOM VARIABLES

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of variables</td>
<td>• Variable&lt;br&gt;• Randomness&lt;br&gt;• Discrete random variable&lt;br&gt;• Continues random variables</td>
<td></td>
</tr>
<tr>
<td>Discrete random variable</td>
<td></td>
<td>• Discrete random variable</td>
</tr>
</tbody>
</table>
### Topic 7.1.9 Errors

#### Sub-Topic
- Estimation
- Measurement
- Errors
- Absolute errors
- Relative errors
- Source of errors
- Rounded off estimation
- Computation of errors
- Errors
- Absolute errors
- Relative errors

### Topic 7.1.10 Index Numbers

#### Sub-Topic
- Types and uses of index numbers
- Index numbers
- Base year
- Price relative
- Unweighted and weighted aggregate cost index
- Average percentage base period
- Price relative index
- Expenditure index
- Average percentage base period
- Weighted and unweighted average
- Demographic rates
- Crude death rate
- Crude birth rate
- Growth rate
- Standardized rates
### TOPIC 7.1 11 TIME SERIES

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series – key terms</td>
<td>- Time series</td>
<td>- Time series graphs</td>
</tr>
<tr>
<td></td>
<td>- Variables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Period: day/ week/ month/ season</td>
<td></td>
</tr>
<tr>
<td>Components of time series</td>
<td>- Seasonal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Cyclic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Random variations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Trend</td>
<td></td>
</tr>
<tr>
<td>Time series graphs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TOPIC 7.1 12 LINEAR PROGRESSION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>FORM 3</th>
<th>FORM 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent and independent variables</td>
<td>- Variables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Dependent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- independent</td>
<td></td>
</tr>
<tr>
<td>Scatter diagrams</td>
<td>- Scatter diagrams</td>
<td>- Scattergram</td>
</tr>
<tr>
<td></td>
<td>- Drawing</td>
<td>- Line of best fit</td>
</tr>
<tr>
<td></td>
<td>- Interpretation</td>
<td>- Equation of a straight line</td>
</tr>
</tbody>
</table>
## 8.1 FORM THREE

### 8.1.1 TOPIC 1: INTRODUCTION TO STATISTICS

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Introduction to statistics | • define statistical terms  
• state the branches of statistics                                                                 | • Statistical terms:  
- Statistics  
- Data  
- Frequency  
- Tally system  
• Descriptive  
• Inferential                                                                 | • Discussing statistical terms  
• Explaining meanings of terms  
• Counting and grouping items  
• Citing relevant examples of branches of statistics                                                                 | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books  
• Available objects |
| Importance of Statistics    | • state the importance of statistics  
• explain the value of Statistics in life                                                                 | • statistics in the  
- home,  
- school  
- community                                                                 | • Discussing the significance of statistics in the home, school and community  
• Researching on the application of statistics in the home, school and community                                                                 | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books |
### 8.1.2: DATA COLLECTION AND PRESENTATION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of Data</td>
<td>Learners should be able to:</td>
<td>• Types of data</td>
<td>• Discussing the types of data in statistics</td>
<td>• ICT tools</td>
</tr>
<tr>
<td></td>
<td>• name the types of data in statistics</td>
<td>- Primary data and secondary data</td>
<td>• Explaining the difference between two given types of data</td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td>• compare different types of data</td>
<td>- Grouped and ungrouped</td>
<td>• Classifying data according to type</td>
<td>• Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Qualitative and Quantitative</td>
<td></td>
<td>• Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Discrete and Continuous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methods of collecting data</td>
<td>Learners should be able to:</td>
<td>• Methods of collecting data:</td>
<td>• Discussing and demonstrating methods of collecting data</td>
<td>• ICT tools</td>
</tr>
<tr>
<td></td>
<td>• explain methods of collecting data</td>
<td>- Survey</td>
<td>• Designing and administering:</td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td>• use the methods to collect data</td>
<td>- Observational study</td>
<td>- Questionnaires</td>
<td>• Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Census</td>
<td>- Interview guides</td>
<td>• Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Experiment</td>
<td>• Carrying out experiments such as tossing a coin or throwing a die</td>
<td>• Local environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Observing events and recording outcomes</td>
<td></td>
</tr>
<tr>
<td>Methods of representing</td>
<td>Learners should be able to:</td>
<td>• Pictogram</td>
<td>• Explaining ways of representing data</td>
<td>• ICT tools</td>
</tr>
<tr>
<td>data</td>
<td>• explain ways of representing ungrouped data</td>
<td>• Pie chart</td>
<td>• Drawing:</td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td>• represent ungrouped data in various forms</td>
<td>• Bar Chart</td>
<td>- Pictograms</td>
<td>• Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td>• interpret statistical diagrams</td>
<td></td>
<td>- Pie chart</td>
<td>• Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Bar chart</td>
<td>• Pictures</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Interpreting statistical diagrams</td>
<td>• Drawing instruments</td>
</tr>
</tbody>
</table>
### 8.1.3: MEASURES OF CENTRAL TENDENCY

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Mean, mode and median of ungrouped data | Learners should be able to:  
- define terms:  
  - Mean  
  - Mode  
  - Median  
- find the mode of ungrouped data  
- find the median of ungrouped data  
- calculate the mean of ungrouped data  
- explain the advantages and disadvantages of the measures of central tendency  
- solve problems involving measures of central tendency |  
- Mean  
- Mode  
- Median |  
- Discussing  
- Mean  
- Mode  
- Median  
- Calculating mean and median of ungrouped data  
- identifying mode from ungrouped data  
- discussing the advantages and disadvantages of the measures of central tendency  
- solving problems involving measures of central tendency |  
- ICT tools  
- Relevant texts  
- Braille material and equipment  
- Talking books  
- Objects of different sizes, colour or shapes |
8.1.4: MEASURES OF DISPERSION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| **Range**            | • identify highest and lowest values of ungrouped data  

- define range of ungrouped data  

- calculate range of raw data  

- state advantages and disadvantages of using range | • Range                                                                 | • identifying highest and lowest values of ungrouped data  

- Calculating range for raw data  

- Discussing advantages and disadvantages of using range | • ICT tools  

- Relevant texts  

- Braille material and equipment  

- Talking books  

- Measuring instruments |
| **Measures of relative position** | • define quartiles  

- arrange numbers in ascending order  

- determine quartiles  

- calculate:  

  - interquartile range  

  - semi-interquartile range  

  - from ungrouped data  

- explain the meaning of interquartile range | • Quartiles  

- Interquartile range  

- Semi-interquartile range | • Finding quartiles from ungrouped data  

- Calculating:  

  - interquartile range  

  - semi interquartile range  

- discussing the significance of interquartile range | • ICT tools  

- Relevant texts  

- Braille material and equipment  

- Talking books  

- Measuring instruments |
| **Variance and standard deviation** | • Define:  

  - variance  

  - standard deviation  

- calculate:  

  - variance of ungrouped data  

  - standard deviation of ungrouped data  

- explain the significance of:  

  - variance  

  - standard deviation | • Variance  

- Standard deviation | • Calculating variance and standard deviation  

- Discussing the significance of variance and standard variation | • ICT tools  

- Relevant texts  

- Braille material and equipment  

- Talking books  

- Local environment |
## 8.1.5: SAMPLING

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampling - key terms</td>
<td>Learners should be able to:</td>
<td>Sampling</td>
<td>Discussing the meanings of the following key terms:</td>
<td>ICT tools</td>
</tr>
<tr>
<td></td>
<td>• explain the key terms:</td>
<td>Population</td>
<td>- sample and sampling</td>
<td>Relevant texts</td>
</tr>
<tr>
<td></td>
<td>- sample and sampling</td>
<td>Randomness</td>
<td>- population</td>
<td>Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td>- population</td>
<td>Sample</td>
<td>- randomness</td>
<td>Talking books</td>
</tr>
<tr>
<td></td>
<td>- randomness</td>
<td>Survey</td>
<td>- survey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- survey</td>
<td>Census</td>
<td>- census</td>
<td>Raffles</td>
</tr>
<tr>
<td></td>
<td>- census</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• differentiate between:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- population and sample</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- census and survey</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sampling techniques</td>
<td>• differentiate between random and non-random sampling</td>
<td>Random sampling</td>
<td>• Listing differences between random and non-random sampling</td>
<td>ICT tools</td>
</tr>
<tr>
<td></td>
<td>• differentiate between representative and biased samples</td>
<td>Non-random sampling</td>
<td>• Distinguishing between biased and representative sample</td>
<td>Relevant texts</td>
</tr>
<tr>
<td></td>
<td>• give sources of bias</td>
<td>Biased sample</td>
<td>• Identifying sources of bias</td>
<td>Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td>• explain ways of overcoming bias</td>
<td>Representative sample</td>
<td>• Discussing ways of overcoming bias</td>
<td>Talking books</td>
</tr>
<tr>
<td></td>
<td>• deduce advantages and disadvantages of the sampling techniques</td>
<td></td>
<td>• Discussing advantages and disadvantages of sampling techniques</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• identify situations in which random and non-random sampling can be used</td>
<td></td>
<td>• Citing situations in which random and non-random sampling can be used</td>
<td>Raffles</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 8.1.6 : PROBABILITY

<table>
<thead>
<tr>
<th><strong>SUB TOPIC</strong></th>
<th><strong>LEARNING OBJECTIVES</strong></th>
<th><strong>CONTENT</strong> (Attitudes, Skills and Knowledge)</th>
<th><strong>SUGGESTED NOTES AND ACTIVITIES</strong></th>
<th><strong>SUGGESTED RESOURCES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Probability –key terms</strong></td>
<td>• Define key terms</td>
<td>• Probability</td>
<td>• Discussing the following probability key terms:</td>
<td>• ICT tools</td>
</tr>
<tr>
<td></td>
<td>- probability</td>
<td>• Trial</td>
<td>- probability</td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td>- trial</td>
<td>• Sample space</td>
<td>- trial</td>
<td>• Braille material and</td>
</tr>
<tr>
<td></td>
<td>- sample space</td>
<td>• Outcome</td>
<td></td>
<td>equipment</td>
</tr>
<tr>
<td></td>
<td>- outcome</td>
<td>• Event</td>
<td></td>
<td>• Talking books</td>
</tr>
<tr>
<td></td>
<td>- event</td>
<td>• Experiment</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Experimental and theoretical probability</strong></td>
<td>• describe:</td>
<td>• Experimental probability</td>
<td>• Discussing theoretical and experimental probabilities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- experimental probability</td>
<td>• Theoretical probability</td>
<td>- Citing situations where experimental or theoretical probabilities are used</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- theoretical probability</td>
<td></td>
<td>- Carrying out experiments such as tossing a coin and throwing a die</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- deduce probabilities from results of experiments</td>
<td></td>
<td>- Computing probabilities of events</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- identify situations where experimental or theoretical probabilities are used</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Single events</strong></td>
<td>• calculate probabilities of single events</td>
<td>• probability space</td>
<td>• Carrying out experiments of single events</td>
<td>• ICT tools</td>
</tr>
<tr>
<td></td>
<td>• compute probabilities of complementary events</td>
<td>• complementary events</td>
<td>• Computing probabilities of complementary events</td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Braille material and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Coins</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Dice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Balls</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Playing cards</td>
</tr>
</tbody>
</table>
### 8.1.7: RANDOM VARIABLES

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of random variables</td>
<td>Learners should be able to:</td>
<td>Variable</td>
<td>Discussing types of random variables</td>
<td>ICT tools</td>
</tr>
<tr>
<td></td>
<td>- define:</td>
<td>Randomness</td>
<td>Discussing the properties of discrete random variables and continuous random variables</td>
<td>Relevant texts</td>
</tr>
<tr>
<td></td>
<td>- variable</td>
<td>Discrete random variables</td>
<td>Conducting experiments to show randomness</td>
<td>Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td>- randomness</td>
<td>Continuous random variables</td>
<td></td>
<td>Talking books</td>
</tr>
<tr>
<td></td>
<td>- random variable</td>
<td></td>
<td></td>
<td>Balls of different colours</td>
</tr>
<tr>
<td></td>
<td>- state the types of random variables</td>
<td></td>
<td></td>
<td>Metre rule, Clothing, footwear, scale and clock</td>
</tr>
</tbody>
</table>
## 8.1.8: ERRORS

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Estimation      | • use the approximation sign  
• define the term estimation  
• estimate quantities  
• measure quantities | • Estimation  
• Measurement | • Discussing estimation  
• Estimating quantities  
• Measuring quantities | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books  
• Rulers, scale, measuring cylinders |
| Types of errors | • define an error  
• state the types of errors  
• distinguish between absolute error and relative error  
• state sources of errors | • Errors  
- Absolute  
- Relative  
- Sources of errors  
- Rounding off  
- Estimation | • Discussing the types of errors  
• Differentiating absolute error from relative error  
• Measuring quantities and giving results to an appropriate degree of accuracy | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books Rulers, scales and clocks |
### 8.1. 9: INDEX NUMBERS

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Types and uses of index numbers | Learners should be able to: | • define:  
- index number  
- price relative  
- base year  
- weighted and unweighted aggregate cost index  
• calculate price relative numbers using base year price  
• interpret a given price relative index number  
• identify applications of price relative index numbers | • index numbers  
• base year  
• price relative  
• unweighted and weighted aggregate cost index  
• Average percentage base period | • Discussing index number terms  
• Collecting prices of different items such as bread, sugar, cooking oil, salt, soap over a specified period  
• Computing the price relative index numbers  
• Discussing application of index number  
• Debating on cost of living and adjustments of wages | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books Price fliers  
• Resource person  
• Price Fliers |
## 8.1. 10: TIME SERIES

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series – key terms</td>
<td>Learners should be able to:</td>
<td>• Time series</td>
<td>• Observing and analyzing examples of time series graphs</td>
<td>• ICT tools</td>
</tr>
<tr>
<td></td>
<td>• define:</td>
<td>• Variable</td>
<td>• Explaining variables and period</td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td>• time series</td>
<td>• Period: day/week/month/season</td>
<td>• Identifying time series data</td>
<td>• Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td>• variable</td>
<td></td>
<td></td>
<td>• Talking books</td>
</tr>
<tr>
<td></td>
<td>• period</td>
<td></td>
<td></td>
<td>• Resource person</td>
</tr>
<tr>
<td></td>
<td>• identify time series data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Components of time series</td>
<td>Learners should be able to:</td>
<td>• Seasonal</td>
<td>• discussing components of time series</td>
<td>• ICT tools</td>
</tr>
<tr>
<td></td>
<td>• identify the components of time series</td>
<td>• Cyclic</td>
<td></td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Random variations</td>
<td></td>
<td>• Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Trend</td>
<td></td>
<td>• Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Time series records</td>
</tr>
</tbody>
</table>
## 8.1 11: LINEAR REGRESSION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent and independent variables</strong></td>
<td>Learners should be able to:</td>
<td>• Variables - dependent - independent</td>
<td>• Describing variables</td>
<td>• ICT tools</td>
</tr>
<tr>
<td></td>
<td>• define variables</td>
<td></td>
<td>• Discussing dependent and independent variables</td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td>• explain dependent and independent variables</td>
<td></td>
<td></td>
<td>• Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Flyers</td>
</tr>
<tr>
<td><strong>Scatter diagrams</strong></td>
<td>• collect raw data</td>
<td>• Scatter diagrams - drawing - interpretation</td>
<td>• Gathering raw data</td>
<td>• ICT tools</td>
</tr>
<tr>
<td></td>
<td>• identify dependent and independent variables</td>
<td></td>
<td>• Identifying dependent and independent variables</td>
<td>• Relevant texts</td>
</tr>
<tr>
<td></td>
<td>• plot scatter diagrams</td>
<td></td>
<td>• Plotting scatter diagrams</td>
<td>• Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td>• interpret scatter diagrams</td>
<td></td>
<td>• Interpreting scatter diagrams</td>
<td>• Talking books Drawing tools</td>
</tr>
<tr>
<td></td>
<td>• use scatter diagrams to make statistical inference</td>
<td></td>
<td>• Using scatter diagrams to make statistical inferences</td>
<td></td>
</tr>
</tbody>
</table>
## 8.2 FORM 4

### 8.2 1: DATA COLLECTION AND PRESENTATION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Techniques of collecting data</td>
<td>Learners should be able to:</td>
<td>• observation • questionnaire • interviews</td>
<td>• Designing questionnaires for data collection • Conducting a survey using data collecting techniques • Discussing advantages and disadvantages of each data collection technique</td>
<td>• ICT tools • Relevant texts • Braille material and equipment • Talking books • Local environment</td>
</tr>
<tr>
<td></td>
<td>• design questionnaires and interview guides • conduct a survey • state advantages and disadvantages of each technique</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methods of representing data</td>
<td>Learners should be able to:</td>
<td>• Graphs - Line graphs - Histograms - Frequency polygon - Cumulative frequency curve</td>
<td>• Explaining ways of representing data • Constructing graphs from data collected in the environment • Interpreting line graphs, histogram, frequency polygon and cumulative frequency curve</td>
<td>• ICT tools • Relevant texts • Braille material and equipment • Talking books • Drawing instruments</td>
</tr>
</tbody>
</table>
## 8.2.2 : MEASURES OF CENTRAL TENDENCY

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES (Attitudes, Skills and Knowledge)</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean, mode and median of grouped data</td>
<td>Learners should be able to:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Compute estimates of median and mean of grouped data</td>
<td>• mean</td>
<td>• Computing estimates of median and mean of grouped data</td>
<td>ICT tools</td>
</tr>
<tr>
<td></td>
<td>• find the modal class of grouped data</td>
<td>• mode</td>
<td>• Stating the modal class of grouped data</td>
<td>Relevant texts</td>
</tr>
<tr>
<td></td>
<td>• solve problems involving measures of central tendency</td>
<td>• median</td>
<td>• solving problems involving measures of central tendency</td>
<td>Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Local environment</td>
</tr>
</tbody>
</table>
### 8.2.3: MEASURES OF DISPERSION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Measures of relative position of grouped data | Learners should be able to:  
- find quartiles from cumulative frequency curves  
- calculate:  
  - inter-quartile range  
  - semi-interquartile range  
- interpret the significance of the inter-quartile and semi-interquartile range  
- find percentiles and deciles from cumulative frequency curves  
- Relate deciles to percentiles |  
- Quartiles of grouped data  
- Interquartile range  
- Semi-interquartile range  
- Percentile  
- Deciles |  
- Using cumulative frequency curves to estimate measures of relative position  
- Calculating the:  
  - Interquartile range  
  - Semi-interquartile range  
- Discussing the significance of:  
  - Interquartile range  
  - Semi Interquartile range  
- Finding deciles and percentiles from cumulative frequency curves  
- Comparing deciles and percentiles |  
- ICT tools  
- Relevant texts  
- Braille material and equipment  
- Talking books |
| Variance and standard deviation |  
- Calculate estimates of variance and standard deviation of grouped data  
- explain the significance of variance and standard deviation of grouped data  
- solve problems involving variance and standard deviation for grouped data |  
- Variance  
- Standard deviation |  
- Calculating estimates of variance and standard deviation of grouped data  
- commenting on the value of the variance and standard deviation of grouped data  
- solving problems involving variance and standard deviation for grouped data |  
- ICT tools  
- Relevant texts  
- Braille material and equipment  
- Talking books |
### 8.2.4: SAMPLING

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Sampling methods | Learners should be able to: | • state sampling methods  
• describe each of the sampling methods  
• explain situations in which random and non-random sampling methods are used  
• describe advantages and disadvantages of each of the sampling method | • Simple random sampling  
• Systematic sampling  
• Stratified sampling  
• Cluster sampling  
• Quota sampling  
• Convenient sampling | • Explaining each of the sampling methods  
• identifying situations in which sampling methods are used  
• Discussing the advantages and disadvantages of each of the sampling method | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books |

### 8.2.5: PROBABILITY

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Combined events | Learners should be able to: | • define with examples combined events  
• construct outcome tables and probability space diagrams  
• use probability rules in the computation of probabilities  
• calculate conditional probabilities  
• solve problems involving probability in life situations | • Combined events  
• Probability space  
• Probability rules  
• Conditional probability | • Discussing combined events  
• Citing examples of combined events  
• Constructing outcome tables and probability space diagrams  
• Computing probability using probability rules  
• solving problems involving probability in life situations | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books  
• Dice  
• Coins  
• Playing cards  
• Balls |
## 8.2.6: RANDOM VARIABLES

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Discrete random variables | Learners should be able to: | • Construct the probability distribution table  
• Calculate the E(X) and Var (X) | • Discrete random variables  
• Carrying out experiments such as tossing a coin, throwing a die  
• Drawing up a probability distribution table  
• Computing the E(X) and Var (X) | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books  
• Coins  
• Dice  
• Scale  
• Ruler |

## 8.2.7: ERRORS

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| Computation of errors | Learners should be able to: | • Calculate errors:  
  - absolute error  
  - relative error | • Errors:  
  - absolute  
  - relative | • Computing absolute and relative errors  
• Discussing how knowledge of errors can be applied in everyday life  
• Explaining the dangers related to errors | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books |
## 8.2 8: INDEX NUMBERS

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price index and expenditure index</td>
<td>define:</td>
<td>Price relative index</td>
<td>Describing:</td>
<td>ICT tools</td>
</tr>
<tr>
<td></td>
<td>- average percentage</td>
<td>Expenditure index</td>
<td>- price relative index</td>
<td>Relevant texts</td>
</tr>
<tr>
<td></td>
<td>- expenditure index</td>
<td>Average percentage</td>
<td>- expenditure index</td>
<td>Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td>distinguish between price relative and expenditure index</td>
<td>Weighted and un-weighted averages</td>
<td>- Computing expenditure index of households</td>
<td>Talking books</td>
</tr>
<tr>
<td></td>
<td>calculate expenditure index of households</td>
<td></td>
<td>- Explaining the importance of expenditure index</td>
<td></td>
</tr>
<tr>
<td></td>
<td>state the importance of expenditure index</td>
<td></td>
<td>- Discussing the use of expenditure index in everyday life</td>
<td></td>
</tr>
<tr>
<td></td>
<td>use expenditure index in everyday life</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographic rates</td>
<td>define demographic rates</td>
<td>Demographic rates</td>
<td>Describing the demographic rates</td>
<td>ICT tools</td>
</tr>
<tr>
<td></td>
<td>calculate demographic rates</td>
<td>- Crude death rate</td>
<td>- Computing the demographic rates</td>
<td>Relevant texts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Crude birth rate</td>
<td></td>
<td>Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Growth rate</td>
<td></td>
<td>Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Standardized rates</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUGGESTED RESOURCES**

- ICT tools
- Relevant texts
- Braille material and equipment
- Talking books
### 8.2 9: TIME SERIES

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
</table>
| **Time series graphs** | • analyse time series graphs  
• identify components from a time series graph | • Time series graphs  
• identifying components from a time series graph | • Discussing time series graphs  
• identifying components from a time series graph | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books |
| **Smoothening**      | • explain the purpose of smoothening  
• calculate moving averages  
• draw trend lines  
• plot moving averages  
• solve problems involving time series in life | • Moving averages  
• Trend lines | • Discussing the purpose of smoothening  
• Computing moving averages  
• Constructing trend lines  
• Interpreting the trend lines  
• Plotting moving averages  
• Solving problems involving time series in life | • ICT tools  
• Relevant texts  
• Braille material and equipment  
• Talking books |
### 8.2. 10 LINEAR REGRESSION

<table>
<thead>
<tr>
<th>SUB TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT (Attitudes, Skills and Knowledge)</th>
<th>SUGGESTED NOTES AND ACTIVITIES</th>
<th>SUGGESTED RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line of best fit</td>
<td>Learners should be able to:</td>
<td>Scattergram</td>
<td>Drawing a scatter diagram</td>
<td>ICT tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Line of best fit</td>
<td>Drawing the line of best fit</td>
<td>Relevant texts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equation of a straight line</td>
<td>Finding the equation of the line of best fit</td>
<td>Braille material and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Estimating the value of $y$ for a given value of $x$</td>
<td>Talking books</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>solving problems involving linear regression</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• plot the scatter diagram</td>
<td>• Scattergram</td>
<td>• Drawing a scatter diagram</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• draw the line of best fit by eye</td>
<td>• Line of best fit</td>
<td>• Drawing the line of best fit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• determine the equation of line of best fit in the form $y = mx + c$</td>
<td>• Equation of a straight line</td>
<td>• Finding the equation of the line of best fit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• use the equation of the line of best fit to estimate value of $y$ given $x$</td>
<td>• Estimating the value of $y$ for a given value of $x$</td>
<td>• solving problems involving linear regression</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• solve problems involving linear regression</td>
<td>• solving problems involving linear regression</td>
<td>• Talking books</td>
<td></td>
</tr>
</tbody>
</table>
9.0 ASSESSMENT

9.1 ASSESSMENT OBJECTIVES

Learners will be assessed on their ability to:

- Recall, recognize and use statistical terms and definitions
- Carry out calculations accurately showing all the necessary steps
- Explain statistical terms, processes and procedures
- Estimate and approximate quantities to a suitable degree of accuracy
- Measure variables to a suitable degree of accuracy
- Draw tables, graphs, charts and diagrams
- Read and interpret tables, graphs, charts and diagrams accurately
- Use appropriate statistical methods to collect data
- Analyse and interpret data accurately
- Make statistical inferences
- Use research skills to investigate, analyse and solve personal and community problems

9.2 SCHEME OF ASSESSMENT

The Forms 3 - 4 assessment in Statistics will be based on 30% continuous assessment and 70% summative assessment.

Arrangements, accommodation and modifications must be visible in both continuous and summative assessment to enable learners with special needs to access assessment and receive accurate performance measurement of their abilities. Access arrangements must neither give these candidates an undue advantage over others nor compromise the standards being assessed.

Candidates who are unable to access the assessments of any component or part of component due to disability (transitory or permanent) may be eligible to receive an award based on the assessment they would have taken.

a) Continuous Assessment

Continuous assessment will consists of topic tasks, written tests and end of term examinations:

i) Topic Tasks
These are activities that teachers use in their day to day teaching. These may include assignments and team work activities.

ii) Written Tests
These are tests set by the teacher to assess the concepts covered during a given period of up to a month. The tests should consist of short structured questions as well as long structured questions.

iii) End of term examinations
These are comprehensive tests of the whole term’s or year’s work. These can be set at school, cluster, district or provincial level.

iv) Project
This should be done from term two to term five.

Summary of Continuous Assessment Tasks
From term one to five, candidates are expected to have done at least the following recorded tasks per term:

- 1 Topic task
- 2 Written tests
iv) Project
This should be done from term two to term five.

Summary of Continuous Assessment Tasks
From term one to five, candidates are expected to have done at least the following recorded tasks per term:

- 1 Topic task
- 2 Written tests
- 1 End of term test
- 1 Project

### Detailed Continuous Assessment Tasks Table

<table>
<thead>
<tr>
<th>Term</th>
<th>Number of Topic Tasks</th>
<th>Number of Written Tests</th>
<th>Number of End of Term Tests</th>
<th>Project</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>Starts</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>In progress</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>In progress</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>Finalization</td>
<td></td>
</tr>
</tbody>
</table>

| Weighting | 15% | 15% | 30% | 40% | 100% |
| Actual weight | 4.5% | 4.5% | 9%  | 12% | 30%  |

Comment: Term 6 is for the National Examination

### Specification grid for continuous assessment

<table>
<thead>
<tr>
<th>Component Skills</th>
<th>Topic Tasks</th>
<th>Written Tests</th>
<th>End of Term</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill 1 Knowledge Comprehension</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Skill 2 Application Analysis</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Skill 3 Synthesis Evaluation</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual weighting</td>
<td>4.5%</td>
<td>4.5%</td>
<td>9%</td>
<td>12%</td>
</tr>
</tbody>
</table>
9.3 ASSESSMENT MODEL

Learners will be assessed using both continuous and summative assessments.