



PROVINCE OF THE
EASTERN CAPE
EDUCATION

DIRECTORATE:
CURRICULUM FET PROGRAMMES
LESSON PLANS

TERM 3
MATHEMATICAL LITERACY
GRADE 12

FOREWORD

The following Grade 10, 11 and 12 Lesson Plans were developed by Subject Advisors during May 2009. Teachers are requested to look at them, modify them where necessary to suit their contexts and resources. It must be remembered that Lesson Plans are working documents, and any comments to improve the lesson plans in this document will be appreciated. Teachers are urged to use this document with the following departmental policy documents: Subject Statement; LPG 2008; SAG 2008; Examination Guidelines 2009 and Provincial CASS Policy / Guidelines. Lesson planning is the duty of each and every individual teacher but it helps when teachers sometimes plan together as a group. This interaction not only helps teachers to understand how to apply the Learning Outcomes (LOs) and Assessment Standards (ASs) but also builds up the confidence of the teachers in handling the content using new teaching strategies.

It must please be noted that in order to help teachers who teach across grades and subjects, an attempt has been made to **standardise lesson plan templates** and thus the new template might not resemble the templates used in each subject during the NCS training. However, all the essential elements of a lesson plan have been retained. This change has been made to assist teachers and lighten their administrative load.

Please note that these lesson plans are to be used only as a guide to complete the requirements of the Curriculum Statements and the work schedules and teachers are encouraged to develop their own learner activities to supplement and /or substitute some of the activities given here (depending on the school environment, number and type of learners in your class, the resources available to your learners, etc).

Do not forget to build in the tasks for the Programme of Assessment into your Lesson Plans.

Strengthen your efforts by supporting each other in clusters and share ideas. Good Luck with your endeavours to improve Teaching, Learning and Assessment.

SUBJECT: MATHEMATICAL LITERACY. GRADE 12. LESSON PLAN 1. TERM 3. TIME: 13 1/2 HOURS.					
Content :Scale drawing, Maps and Compass directions.			Context : Geographical and real life.		
Link with previous lesson : Measuring and calculation of surface area, volume of prisms, conversions of units					
KNOWLEDGE (K): .Scale drawing views, map grids and compass direction					
SKILLS (S): Drawing and interpretation of plans.					
VALUES (V): Appreciation of the use of scales					
<i>LO 1. Numbers and operations in context. The learner is able to use knowledge of numbers and their relationships to investigate a range of different contexts which include financial aspects of personal, business and national issues.</i>		<i>LO 2: Functional Relationships. The learner is able to recognize, interpret, describe and represent various functional relationships to solve problems in real and simulated contexts.</i>		<i>LO 3: Space, Shape & Measurement. The learner is able to measure, estimate and calculate physical quantities and to interpret, describe and represent properties and relationships between 2- and 3-Dimensional objects.</i>	
AS: 12.1.1 Correctly apply problem solving and calculation skills to situations and problems dealt with.		AS:12.2.1 Work with numerical data and formulae in a variety of real life situations to solve design and planning problems		AS: 12.3.1 Solve problems in 2-dimensional and 3-dimensional contexts by estimating, measuring and calculating values.	
AS: 12.1.2 Relate calculated answers correctly and appropriately to the problem situations.		AS; 12.2.2 Draw graphs as required by the situations and problems being investigated.		AS: 12.3.2 Convert units of measurement between different scales as required in dealing with problems.	
AS: 12.1.3 Analyze and critically interpret a variety of financial situation – personal and business finance, taxation, inflation and effects of changes in interest rates on personal		AS: 12.2.3 Critically interprets tables and graphs including graphs with negative values on axes and more than one graph on a system of axes.		AS: 12.3.3 Use and interpret scale drawings of plans to estimate and calculate values according to scale and build models.	
				AS: 12.4.1. Investigate problems on issues relating to social, environmental and political factors using appropriate statistical methods and comparing data from different sources and samples	
				AS: 12.4.2 Choose and interpret the use of method to summarize and display data in statistical charts and graphs. Describe trends.	
				AS: 12.4.3 Compare data using measures of central tendencies and spread – mean, median , mode variance , standard deviation, quartiles and percentiles	

credit, investment and growth options.						
				AS: 12.3.4 Use grids to determine locations and describe relative positions.	√	AS: 12.4.4. Represent and critically analyze data, statistics and probability values to draw conclusions and predict trends.
				AS: 12.3.5 Use basic trigonometric ratios - sine, cosine and tangent to interpret and solve problems.		AS; 12.4.5. Critically engage with the use of probability values in making predictions of outcomes in the contexts of games and real life situations.
				AS: 12.3.6 Recognize, visualizes, describe and compare geometrical figures and solids.		AS: 12.4.6 Critically evaluate statistically base arguments , describe the use and misuse of statistics and make well-justified recommendations

	Teacher Activity	Learner Activity	Assessment	Resources	Date completed
Activity 1 Scale drawing, Views and Models.	<p>Teacher provides learners with 2D plans of houses to work with in identifying scales, views and guides learners to draw plans of houses and make models.</p> <p>Teacher demonstrates how to use model-building techniques to draw 3D models of objects and buildings.</p>	<p>Learners work in groups in identifying scales and work out conversions using the scale.</p> <p>They calculate real dimensions using floor plans given to them.</p> <p>Find isometric views of an object.</p> <p>Use building plans to calculate costs involved.</p> <p>Use model-building techniques to draw 3D models of objects. Eg. School building, community hall, church, etc.</p>	<p>Methods:</p> <p>Class work, home work, class test.</p> <p>Tools:</p> <p>Memos.</p>	<p>Drawings of floor plans of different buildings.</p> <p>Text book,</p> <p>Mathematical instruments.</p>	
Activity 2	Teacher provides learners with	Work individually or in groups to use the	Class work, home	Test books,	

Maps and Grids.	different maps and town plans. Guides the learners in determining positions using grids , compass directions.	maps provided to determine locations in terms of distance and directions. Determine position using grids. Determine position in terms of latitude and longitude.	work. Tool: Memos.	Maps, globe, Municipality or town plans, Mathematical sets.	
Activity 3 Maps and compass directions.	Teacher guides learners to find directions using bearings. Shows how to calculate actual distances from scales and vice versa. Illustrates how to draw simple maps and describe how to reach destinations.	Learners work in groups in determining bearings of positions in degrees and minutes. Follow instructions to calculate actual distances from scales and vice versa. Learners draw simple maps (eg. School area, locations) and describe how to reach destinations.	Methods: Class work, home work, Class test. Tool: Memos.	Maps/ atlases Text books Calculators Mathematical instruments, Grid papers.	
Home work.					
Expanded opportunities:	Explain and assist learners in the use of GPS(Global Positioning System). Additional exercises from exemplar and past examination papers.				
Teacher Reflections.					

Signature of: Teacher:

HOD:

Date:.....

Date:

SUBJECT: MATHEMATICAL LITERACY. GRADE 12. LESSON PLAN 2. TERM 3. TIME: 13 1/2 HOURS.					
Content: Financial Maths; Data Handling.			Context : Personal and Business Finance and Taxation. Real life situations		
Link with previous lesson : Taxation, Currency fluctuation, inflation and interest. Planning problems and compound change. Data Handling					
<p>KNOWLEDGE (K): .Taxation, currency fluctuations and financial issues. Linear, inverse proportions and compound change profit margins (graphs and tables). Data Handling – collection , summary, display and analysis of data.</p> <p>SKILLS (S): Computational, drawing of graphs, use of calculators and interpretation.</p> <p>VALUES (V): Appreciation of the effect of the above knowledge in personal and business finance.. Appreciate the advantages of the use of tables and graphs. Appreciate the need to manage data effectively and the role it plays in decision taxing.</p>					
<p><i>LO 1. Numbers and operations in context.</i> The learner is able to use knowledge of numbers and their relationships to investigate a range of different contexts which include financial aspects of personal, business and national issues.</p>		<p><i>LO 2: Functional Relationships.</i> The learner is able to recognize, interpret, describe and represent various functional relationships to solve problems in real and simulated contexts.</p>		<p><i>LO 3: Space, Shape & Measurement.</i> The learner is able to measure, estimate and calculate physical quantities and to interpret, describe and represent properties and relationships between 2- and 3-Dimensional objects.</p>	
<p>AS: 12.1.1 Correctly apply problem solving and calculation skills to situations and problems dealt with.</p>		<p>AS:12.2.1 Work with numerical data and formulae in a variety of real life situations to solve design and planning problems</p>		<p>AS: 12.3.1 Solve problems in 2-dimensional and 3-dimentional contexts by estimating, measuring and calculating values.</p>	
<p>AS: 12.1.2 Relate calculated answers correctly and appropriately to the problem situations.</p>		<p>AS; 12.2.2 Draw graphs as required by the situations and problems being investigated.</p>		<p>AS: 12.3.2 Convert units of measurement between different scales as required in dealing with problems.</p>	
<p>AS: 12.1.3 Analyze and critically interpret a variety of financial situation – personal and business finance, taxation,</p>		<p>AS: 12.2.3 Critically interprets tables and graphs including graphs with negative values on axes and more than one graph on</p>		<p>AS: 12.3.3 Use and interpret scale drawings of plans to estimate and calculate values according to scale and build</p>	
				<p>AS: 12.4.1. Investigate problems on issues relating to social, environmental and political factors using appropriate statistical methods and comparing data from different sources and samples</p>	
				<p>AS: 12.4.2 Choose and interpret the use of method to summarize and display data in statistical charts and graphs. Describe trends.</p>	
				<p>AS: 12.4.3 Compare data using measures of central tendencies and spread – mean, median , mode variance , standard</p>	

inflation and effects of changes in interest rates on personal credit, investment and growth options.		a system of axes.		models.		deviation, quartiles and percentiles	
				AS: 12.3.4 Use grids to determine locations and describe relative positions.		AS: 12.4.4. Represent and critically analyze data, statistics and probability values to draw conclusions and predict trends.	√
				AS: 12.3.5 Use basic trigonometric ratios - sine, cosine and tangent to interpret and solve problems.		AS; 12.4.5. Critically engage with the use of probability values in making predictions of outcomes in the contexts of games and real life situations.	√
				AS: 12.3.6 Recognize, visualizes, describe and compare geometrical figures and solids.		AS: 12.4.6 Critically evaluate statistically base arguments , describe the use and misuse of statistics and make well-justified recommendations	√

	Teacher Activity	Learner Activity	Assessment	Resources	Date completed
Activity 1 Taxation, Currency Fluctuations, Inflation , Interest	Provides worksheets that deal with questions on: <ul style="list-style-type: none"> Income and expenditure Effects of taxation and changing interest rates. Simple and compound interest. Financial indicator and effects of currency fluctuations. Questions that will require discussions 	Learners use the provided worksheet to work out questions on: <ul style="list-style-type: none"> Income and expenditure Effects of taxation and changing interest rates. Simple and compound interest. Financial indicator and effects of currency fluctuations. Questions that will require discussions to make appropriate decisions. 	Classwork Home work Controlled test	Exemplars. Question papers. Study Guides. Textbook. Interest Sourcing	

	to make appropriate decisions.				
Activity 2 Planning Problems , Compound Change, Graphs and tables	<p>Teacher provides worksheets that deal with real life situations in relation to the following:</p> <ul style="list-style-type: none"> • Linear , inverse proportion and compound growth. • Break even points and optimal ranges. • Situations that require formulating simple linear equations to solve and design problems. • Drawing of graphs and interpretations 	<p>Learners complete the worksheet on Linear , inverse proportion and compound growth. Break even points and optimal ranges. Situations that require formulating simple linear equations to solve and design problems and drawing of graphs. Learners interpret and make their own summaries.</p>	<p>Class work Homework, Class test Memo</p>	<p>Exemplars Previous question papers Calculators Instrument box Text book Internet sourcing Exam guidelines</p>	
Activity 3 Data Handling (all aspects)	<p>Provide worksheets to learners to work with the following aspects:</p> <ul style="list-style-type: none"> • Analysis of data on investigation of problems. • Summarizing and displaying data. • Interpretation of summarized data. • Determination and use of probability values in making 	<p>Learners will have to complete worksheets to:</p> <ul style="list-style-type: none"> • Analyze, summarize data given. • Interpret and draw conclusion. • Calculate the measures of central tendency and spread- inclusive of mean , median , mode, range , interpretation of variance and standard deviation and quartiles. • To work out probability values and make predictions • Participate and contribute in the guided discussion on use and misuse of statistics 	<p>Class work Homework, Class test Memo</p>	<p>Exemplars Previous question papers Calculators Instrument box Text book Internet sourcing Exam guidelines</p>	

	<p>predictions.</p> <ul style="list-style-type: none"> • Critique statistically based arguments (use and misuse) 				
Home work.					
Expanded opportunities:	Provides learners with additional exercises from the past papers, exemplars and study guides on all aspects of data handling. Encourage learners to research on use and misuse of statistics in real life situations.				
Teacher Reflections.					

Signature of: Teacher:

HOD:

Date:.....

Date:

SUBJECT: MATHEMATICAL LITERACY. GRADE 12. LESSON PLAN 3. TERM 3. TIME: 18 HOURS.							
Content: Revision work and Trial Examination.				Context : Mathematical and Real Life situations			
Link with previous lesson : All learning outcomes and assessment standards grade 10-12 covered							
KNOWLEDGE (K): . All learning outcomes and assessment standards grade 10-12 covered							
SKILLS (S): Interpretation (reasoning and logical skills) Application , Manipulation and accuracy							
VALUES (V): Appreciation of the being ready for the final examination							
LO 1. Numbers and operations in context. The learner is able to use knowledge of numbers and their relationships to investigate a range of different contexts which include financial aspects of personal, business and national issues.		LO 2: Functional Relationships. The learner is able to recognize, interpret, describe and represent various functional relationships to solve problems in real and simulated contexts.		LO 3: Space, Shape & Measurement. The learner is able to measure, estimate and calculate physical quantities and to interpret, describe and represent properties and relationships between 2- and 3- Dimensional objects.		LO 4: Data Handling. The learner is able to collect, summarize, display and analyze data and apply knowledge of statistics and probability to communicate, justify & predict findings and draw conclusions.	
AS: 12.1.1 Correctly apply problem solving and calculation skills to situations and problems dealt with.	√	AS:12.2.1 Work with numerical data and formulae in a variety of real life situations to solve design and planning problems	√	AS: 12.3.1 Solve problems in 2-dimensional and 3-dimensional contexts by estimating, measuring and calculating values.	√	AS: 12.4.1. Investigate problems on issues relating to social, environmental and political factors using appropriate statistical methods and comparing data from different sources and samples	√
AS: 12.1.2 Relate calculated answers correctly and appropriately to the problem situations.	√	AS; 12.2.2 Draw graphs as required by the situations and problems being investigated.	√	AS: 12.3.2 Convert units of measurement between different scales as required in dealing with problems.	√	AS: 12.4.2 Choose and interpret the use of method to summarize and display data in statistical charts and graphs. Describe trends.	√
AS: 12.1.3 Analyze and critically interpret a variety of financial situation – personal and business finance, taxation, inflation and effects of changes in interest rates on personal	√	AS: 12.2.3 Critically interprets tables and graphs including graphs with negative values on axes and more than one graph on a system of axes.	√	AS: 12.3.3 Use and interpret scale drawings of plans to estimate and calculate values according to scale and build models.	√	AS: 12.4.3 Compare data using measures of central tendencies and spread – mean, median , mode variance , standard deviation, quartiles and percentiles	√

credit, investment and growth options.							
				AS: 12.3.4 Use grids to determine locations and describe relative positions.	√	AS: 12.4.4. Represent and critically analyze data, statistics and probability values to draw conclusions and predict trends.	√
				AS: 12.3.5 Use basic trigonometric ratios - sine, cosine and tangent to interpret and solve problems.		AS; 12.4.5. Critically engage with the use of probability values in making predictions of outcomes in the contexts of games and real life situations.	√
				AS: 12.3.6 Recognize, visualizes, describe and compare geometrical figures and solids.	√	AS: 12.4.6 Critically evaluate statistically base arguments , describe the use and misuse of statistics and make well-justified recommendations	√

	Teacher Activity	Learner Activity	Assessment	Resources	Date completed
Activity 1 Trial Examination	Teacher provides learners with examination techniques.	Learners follow the instruction s/ guidelines to prepare for the examination	Examination and memo	Prepared worksheets on examination techniques. Question Papers	
Activity 2 Discussion and Remedial work	Teacher provide and guide learners with their scripts and question papers	Learners work out the corrections of the trial question papers	Class work Home work Memos	Question Papers and scripts . Memo Textbook. Graph books	

of Trial Examinations				Calculators Instrument box	
Home work.					
Expanded opportunities:	To provide and expose learners to more revision exercises in grade 10-12 work.				
Teacher Reflections.					

Signature of: Teacher:

HOD:

Date:.....

Date: