

MATHEMATICAL LITERACY

LESSON PLANS

GRADE 11.

LESSON PLAN 1.

Subject: MATHEMATICAL LITERACY	Grade 11		
Lesson Plan: Personal finance	Number of Activities : 3		
Duration : +/- 13H30	Week : 1 - 3 Date:		
Context : Personal finance management, Business context.			
Link with previous lesson: Basic algebraic operations.			
CORE CONTENT: (KSV KNOWLEDGE (K): Reinforce knowledge of exponents, roots, percentage, ratio, proportion, simple and compound interest. SKILLS (S): Calculating, estimating, rounding off, problem solving. VALUES: (V) Appreciation and self confidence in the ability to perform mathematical operations and solve problems.			
	ACTIVITY 1	ACTIVITY 2	ACTIVITY 3
Activity Content	Ratio and proportion	Income and expenditure	Budgeting
LO,s and AS's	11.1.1.	11.1.2.	11.1.3.
Detail of Activity	Teacher engages the learners with a worksheet to reinforce their skills to do basic mathematical operation such as rounding off, estimate, and calculate percentage increase or decrease and simple and compound growth. They do more exercises on ratio, proportion, exponents and significant figures.	Teacher provides learners with worksheets to engage them in calculations based on hire purchase, profit and loss, repayment of a loan or account. Learners work in groups to solve problems and to critically interpret answers in terms of given contexts.	Teacher collects relevant bank statements to engage learners in discussing advantages of budgeting personal finances. Learners are guided in drawing up personal finance budget and to develop their skills in entrepreneurship. Learners do calculations on income and expenditure as well as estimate and check profits.
Teaching Methods	Group work	Group work	Investigation.
Assessment Strategy :Form : Tool : Method	Class work, home work. Memo Individual, peer.	Class work, home work, short test. Memos. Peer, teacher	Class work, investigation. Memo, rubric. Peer, teacher.
Expanded Opportunities:	More challenging tasks to be given on personal banking, and business management.		

Resources	Textbook, worksheet.	Text book, worksheet.	Finance statements, Textbook.
Teacher reflection			

LESSON PLAN 2.

Subject: MATHEMATICAL LITERACY		Grade 11	
Lesson Plan: Space and shape		Number of Activities : 3	
Duration : +/- 9H00		Week 4 - 5 Date:	
Context : Socio-economic, Mathematical, building plans.			
Link with previous lesson: Personal and business finance management.			
CORE CONTENT: (KSV)			
KNOWLEDGE (K): Length, area and volume of 2D and 3D figures and solids, rounding off, conversion of units.			
SKILLS (S): Calculate, estimate, round off, identify, solve problems.			
VALUES: (V) Appreciation and self confidence in the ability to solve mathematical problems independently.			
	ACTIVITY 1	ACTIVITY 2	ACTIVITY 3
Activity Content	Areas and volumes	Measurements	Scale drawing
LO,s and AS's	11.3.1.	11.3.2.	11.3.3.
Detail of Activity	Teacher gives learners worksheet containing revision work on calculating lengths, areas and volumes. And revises the work done in Grade 10. Learners work in groups to reinforce their knowledge and skills on 2D and 3D figures and solids and solving problems .	Teacher asks learners to bring different geometrical shapes and solids and engage them in making accurate measurements and to calculate their surface areas and volumes And to convert the measurements and answers into other units, e.g. Km to m, mm ³ - litres, miles to km, kg to lb, etc.	Teacher introduces the scale drawing of objects and plans of building and explains the importance using an appropriate scale. Learners given exercises to read off from Maps and plans.eg. study the plan of the school building and identify its location and determine available area for future extensions.
Teaching Methods	Group work	Practical activity	Discussion and group work
Assessment Strategy :Form : Tool : Method	Classwork, home work Memo Peer, individual	Class work, Class test Memos Peer, teacher	Class work, Assignment. Memo, rubric. Individual, teacher.
Expanded Opportunities:	Designing shapes of containers to be used in factories in terms of space and cost effectiveness.		
Resources	Worksheet, text book	Various geographical shapes & solids.	Plans of buildings and maps.
Teacher reflection			

LESSON PLAN 3.

Subject: MATHEMATICAL LITERACY		Grade 11	
Lesson Plan: Ratio, proportion and rate		Number of Activities : 3	
Duration : 13H30		Week : 6 - 8 Date:	
Context : Socio-economic, financial, travel.			
Link with previous lesson: Number patterns, fractions, decimals, and percentages.			
CORE CONTENT: (KSV)			
KNOWLEDGE (K): Ratio and proportion, working with ratios.			
SKILLS (S): Simplify, compare, identify, make conclusions.			
VALUES (V) : Develop self confidence in dealing with numbers and operation with numbers.			
	ACTIVITY 1	ACTIVITY 2	ACTIVITY 3
Activity Content	Ratio and proportion	Scales and maps	Grid reference, compass directions.
LO,s and AS's	11.1.1.	11.1.2; 11..3.3.	11.3.4.
Detail of Activity	Teacher revises the concepts of fractions, percentages, ratio and proportion. Learners are given sets of examples (worksheet) to work with so that they are able to solve problems confidently and individually.	Learners draw figures of same shape but different sides and write the ratio of corresponding sides. Everyday examples of ratio and proportion are used to reinforce the learner's knowledge and skills in solving problems and to use the answers logically to communicate processes and results.	Teacher explains the use of grids and maps as well as compass directions to determine locations and to describe relative positions of points, objects and places. Learners work with examples to describe positions using grids as well as locating positions when given grids.
Teaching Methods	Group work, problem solving	Practical work, discussion, problem solving	Group work, practical activity.
Assessment Strategy :Form : Tool : Method	Group work, home work. Memos Peer, individual	Class work, class test Memos Peer, teacher.	Class work, assignment. Memo, rubric. Individual, teacher.
Expanded Opportunities:	Solve problems with compound and complex fractions. Use a variety of different plans and maps to work with.		
Resources	Work sheet, text book, calculator.	Text books.	Maps, plans.
Teacher reflection			

LESSON PLAN 4.

Subject: MATHEMATICAL LITERACY	Grade 11		
Lesson Plan: Data handling	Number of Activities : 3		
Duration : +/- 9H00	Week 9 - 10 Date:		
Context : Statistics, socio-economic.			
Link with previous lesson: Graphs of relationships, drawing and interpreting graphs.			
CORE CONTENT: (KSV)			
KNOWLEDGE (K): Collection, sorting, analyzing and displaying of data.			
SKILLS (S): Data collection, sorting skills, drawing, interpreting.			
VALUES: (V) Understanding of different methods of collecting data and analyzing and interpreting them.			
	ACTIVITY 1	ACTIVITY 2	ACTIVITY 3
Activity Content	Data collection, display of data	Display of data	Data interpretation
LO,s and AS's	11.4.1.	11.4.2.	11.4.4.
Detail of Activity	<p>Teacher revises the data collection and display methods used in Grade 10. More methods of data collection are discussed. Eg. Questionnaire and interviews .</p> <p>Using appropriate statistical methods to compare data from different sources on issues such as:</p> <ul style="list-style-type: none"> -Social, environmental and political issues - human rights and inclusivity <p>Learners collect data using different methods sort and display by tables, charts and graphs.</p>	<p>Teacher provides learners with statistical information from different govt. departments for learners to answer questions and to draw conclusions as well as to make predictions.</p> <p>Learners also work in groups to summarise and display data by means of tally tables, pie-chart, single and compound bar graphs, line and broken line graphs.</p>	<p>Learners are guided to use the data collected and given to them in order to interpret correctly and draw conclusions.</p> <ul style="list-style-type: none"> - Learners are given data from two similar organizations to compare and draw conclusions and make appropriate decisions. <p>e.g. Choose the right:</p> <ul style="list-style-type: none"> - cell phone service provider, - tracking device company - banking service, etc.
Teaching Methods	Practical activity, Question and answer	Group work	Group work
Assessment Strategy :Form : Tool : Method	Class work, home work Memos Individual, peer.	Class work, class test Memos Peer, teacher	Class work, assignment. Memo, rubric Teacher, individual
Expanded Opportunities:	Further exercises of collecting data by interviews.		

Resources	Model questionnaires, text books.	Dept. stats, graphs, text books.	
Teacher reflection			