GRADE	12	SUBJECT	MATHEMATICAL LITERAC	Y WEEK	1	TOPIC	SCALE (Number scale)LP1: TIME: 60 min	
LESSON SUMM	iary fo	R: DATE STARTED:		DATE COMPLETED:				
LESSON OBJEC	CTIVES	The Learn Explain the Use a give Use a give Determine	ers should be able to: e meaning of a given scale en scale to determine actu en scale in conjunction with e the scale of a map.	e (e.g. explain wh al measurements measurement c	nat the scal s when give on a map to	e 1 : 100 means en measured val o determine leng	in terms of the measurements on a map). lues, or measured values from given actual values. gth/dimensions.	

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to leacher activity.		4. NSC Nat ional
Explain the meaning of a given scale Baseline assessment tasks	Performance Task:		examination question
Many learners battle with basic calculation skills and using a calculator	Refer to teacher activity column -	Pre- knowledge -	papers (2008 – 2011)
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Select appropriate task from	5min	5. GDESSIP Grade 10-12
from resources in the resources column.	resources in the resources column.	Baseline- 10	Learner Notes and Typical
LESSON PREPARATION	Homework:	min	examination questions
Scale- Maps	LEARNER ACTIVITY Q6-7 and/ or:	Performance	6. GDE Prelim question
Work with the following types of scales on maps: number scales expressed in the form 1:500 bar scales expressed in the form	Select appropriate task from	task- 20 min	papers (2009 – 2011)
	resources in the resources column	Home-work-	7. DoE NSC exempl ar
0m 10 m 20m		25 min	question papers
Discuss advantages and disadvantages of each type of scale and the situations in which one type of scale is more appropriate than the other.			8. GDE Data Bank Math Lit Questions and answers
Calculate actual length and distance when map measurements are known.			
Calculate map measurements when actual lengths and distances are known.			

Determine the most appropriate scale in which to draw/construct a map and use this scale to	9. Textboo	ks
complete the task.	Street map	os, provincial
Determine the scale in which a map has been drawn in the form 1: and use the scale to	and nation	nal road maps,
determine other dimensions on the map .	and maps	showing railway
	routes; tim	etables, fare
	tables and	I distance charts;
LEARNER ACTIVITY	appropria	te floor plans
	and eleva	tion plans;
1.What is a scale?		a for making
	models	
Scale is a ratio that shows the relationship between a length measured on a plan or a map		
and the actual measured plan or a map and the actual real world length/distance.		
2. Name the types of Scale		
2.1 Number Scale Is represented by means of a ratio		
2.1. Remote Scale - is represented by means of diatance between two places on a man		
2.2 But scale - A scale but helps you find the distance between two places on a map.		
3 Name two ways in which a scale can be written		
In the form of a ratio(no units)		
In the form of an equation to represent a relationship between two quantities		
sometimes of different units		
4. Mention two applications of scale		
A scale can be used on maps it can also be used on plane		
Il can also be used on plans		
5. If using the scale of 1 : 50, state what each of the following on the plan equal to on the		
actual length		
• 1 mm on the plan = 50 mm in actual length		
• 2 cm on the plan = 100 cm in actual length		
• 4 m on the plan = 200 m in actual length		
6. The following formula is used to calculate the scale factor:		
Scale factor $-\frac{the actual measurements}{the actual measurements}$		
the plan measurements		

What	are the scale factors of the following:		
(a)	1 : 4 Answe r: 4 which is an enlargement of 4 units		
(b)	2:1 Answer: 0.5, which is a reduction factor to half		
7. On betwe 2 000 (a map the distance between Kimberley and Bloemfontein is 7,3 cm. The actual distance en Kimberley and Bloemfontein is 146 km. What is the scale of the map? Answer - 1 : 100		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATIC	AL LITERACY	WEEK	1	TOPIC	SCALE (plans)LP2: TIME: 60 min

LESSON SOMMART FOR. DA	IL STARLED.		DATE COMILETED.	
	The Learners should be able	to:		
	Use a given scale in conjunc	ction with measurement on a plar	n to determine length/	dimensions.
LESSON OBJECTIVES	Determine the scale of a pl	an.		
	Use a given scale in conjunc	ction with other content or skills to	complete a project.(e	e.g. use a given scale to determine the dimensions in which to draw

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to feacher activity.		4. NSC Nat ional
Explain the meaning of a given scale	Performance Task:		examination question
Use a given scale in conjunction with measurement on a map to determine length/dimensions.	LEARNER ACTIVITY Q1.1-1.3 and/or:	Pre-	papers (2008 – 2011)
Baseline assessment tasks	Select appropriate task from	5min	5. GDESSIP Grade 10-12
Many learners battle with basic calculation skills and using a calculator	resources in the resources column.	Pasalina 10	Learner Notes and Typical
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Homework:	min	examination questions
from resources in the resources column.	LEARNER ACTIVITY Q2 and/ or:	Performance	6. GDE Prelim question
	Select appropriate task from	task- 20 min	papers (2009 – 2011)
LESSON PREPARATION	resources in the resources column	Home-work-	7. DoE NSC exempl ar
Scale- plans		25 min	question papers
Calculate actual length and distance when plan measurements are known.		20	
Calculate plan measurements when actual lengths and distances are known using a given scale to inform the drawing of 2-dimensional plans and pictures.			
Determine the most appropriate scale in which to draw/construct a plan and use this scale to complete the task.			

Determine the scale in which a plan has been drawn in the form 1:... and use the scale to determine other dimensions on the plan.

LEARNER ACTIVITY

1 In order to make sense of a map or scale diagram, the scale must known. Answer the following questions by making use of the scale provided.

1.1



9 cm

	8. GDE Data Bank Math Lit Questions and answers Textbooks Street maps, provincial and national road maps, and maps showing railway routes; timetables, fare tables and distance charts; appropriate floor plans and elevation plans; cardboard for making models	





2.1.	Write down the height of the tower on the picture(in mm). 45 mm		
2.2	What is the scale on the scale drawing?		
	45 mm> 350 m		
	45 mm>350 000 mm		
	$\frac{45mm}{45mm} > \frac{350000mm}{45mm}$		
	$\frac{1}{1} > \frac{70000}{9}$		
	therefore the scale used is 9 : 70 000		

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATIC	AL LITERACY	WEEK	1	TOPIC	SCALE (models)LP3 : TIME: 60 min		
LESSON SUMN	MARY FO	DR: DATE STARTED	:			DATE CO	MPLETED:			
LESSON OBJECTIVES		The Learn	The Learners should be able to:							
		Critique t	Critique the scale in which an object has been drawn and offer an opinion as to a more appropriate scale.							
		Decide o	Decide on an appropriate scale in which to draw a picture or build a model, and then complete the project.							

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook Spot On-Gr10
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to leacher activity.		4. NSC Nat ional
Calculate actual length and distance when plan measurements are known.	Performance Task:		examination question
Baseline assessment tasks	Refer to te acher activity column-		papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Select appropriate task from	Pre-	5. GDE SSI P Grade 10-12
from resources in the resources column.		knowledge –	Learner Notes and Typical
LESSON PREPARATION	Homework:	Smin	examination questions
Scale - Models	LEARNER ACTIVITY Q4 and/ or:	Baseline- 10	6. GDE Prelim question
	Select appropriate task from	min	papers (2009 – 2011)
Calculate measurements when actual lengths and distances are known using a given scale to inform the 3-dimensional models.	resources in the resources column	Performance task- 20 min	7. DoE NSC exempl ar
Determine the most appropriate scale in which to draw/construct a model, and use this scale			question papers
to complete the task.		Home-work-	8. GDE Data Bank Math Lit
		25 min	Questions and answers Textbooks
LEARNER ACTIVITY			Street maps, provincial and national road maps,
When making a drawing of an object which is meant to be in proportion to the size of the			routes; timetables, fare
object, and from which measurements can be taken, a scale is used to fix the ratio between			tables and distance charts;
of two/or both forms: either as a ratio or as a statement of how one measurement is related to			appropriate floor plans
the other.			cardboard for making models

I. Con	npiete:				
1:1 mec	ans the drawing is the	(same size) as th	ne object.		
1:10 med	ans 1 cm on the drawing re	presents(10	cm) on the object.		
1.100 me	cans 1 cm on the drawing r	enresents(1	100 cm) on the object or(1) m	tre	
1.100 110					
1;25 000	means 1 cm represents	(250) metres.			
2. A m	odel giraffe is made to a sc	cale of 1:50. What c	does this tell you about		
a. The	height of the actual giraffe	. (it is 150 times big	ger than the model)		
h The	height of the model giraffe	2 (it is 150 times sm	aller than a real airaffe)		
0. me	neight of the model grane				
c. The	height of the actual giraffe m tall)	if the model is 3,5c	cm tall. (the actual giraffe is 3,5 x 150	:m =	
0,20					
3. Am	odel is made using the scal	le 1:20			
The table	e gives details of the mode	l and the real Mose	es Madiba Sport Stadium in Durban.		
Comple	te the table				
		Model	Real Stadium		
	Length of the field	600cm	A		
	Height of the stadium	В			
		-			
	Height of the entrance aate	20cm	С		
	Width of the entrance D 5m				
	Width of the field	450cm	E		

A= 120n B= 150c C= 4m D=25cm E= 90m 000 4. A sc the	n m cale model of an aerop table	lane was built using a scale of ⁻	1 cm representing 2m. Complete
		Model aeroplane	Real aeroplane
	Length Wing span	A 25cm	62m
	Height of doors	C	1 Am
	Width of doors	0,4cm	D
	Length of cabin	3,9cm	E
	Width of cabin	1,3cm	F
A= 31cn B= 50m C= 0,8ci D= 0,8m E= 7,8m F= 2,6m	n m		

Reflection/Notes:		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	1	TOPIC	SCALE (consolidation)LP4: TIME: 60 min			
LESSON SUMM	MARY FOR:	DATE STARTED:			DA	TE COMPLETED:				
		The Learn	ers should be able to:							
		Explain th	Explain the meaning of a given scale							
		Use a give	en scale to determine actual m	nine actual measurements when given measured values, or measured values from given actual values.						
LESSON OBJE	CTIVES	Use a give	Use a given scale in conjunction with measurement on a plan/map to determine length/dimensions.							
			Determine the scale of a map or plan.							
		Use a give	Use a given scale in conjunction with other content or skills to complete a project.							
		Critique tl	ne scale in which an object ha	s been drawn	and offer c	in opinion as to a m	nore appropriate scale.			
		Decide o	n an appropriate scale in whic	h to draw a pi	cture or bui	ld a model, and the	en complete the project.			

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook Spot On-Gr10
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :	Pre-	3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.	5min	4. NSC Nat ional
Calculate actual length and distance when map and/or plan measurements are known.	Performance Task:	Rasolino 10	examination question
Baseline assessment tasks	Refer to teacher activity column-	min	papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	Select appropriate task from	Performance	5. GDE SSI P Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	resources in the resources column.	task- 20 min	Learner Notes and Typical
from resources in the resources column.	Homework:	Home-work-	examination questions
LESSON PREPARATION	Reter to teacher activity column- Investigation: What happens if you	25 min	6. GDE Prelim question
Scale - Revision	resize a map or plan?: Select		papers (2009 – 2011)
	appropriate task from r esources in the resources column		

Work with the following types of scales on maps, plans and in the construction of models: number scales expressed in the form 1:500 bar scales expressed in the form	
	7. DOE NSC exemple ar
Um 10m 20m	question papers
Discuss advantages and disadvantages of each type of scale and the situations in which one type of scale is more appropriate than the other.	Questions and answers Textbooks
Calculate actual length and distance when map and/or plan measurements are known.	and national road maps,
Calculate map and/or plan measurements when actual lengths and distances are known using a given scale to inform the drawing of 2-dimensional plans and pictures and the construction of 3-dimensional models.+	and maps snowing railway routes; timetables, fare tables and distance charts; appropriate floor plans
Determine the most appropriate scale in which to draw/construct a map, plan and/or model, and use this scale to complete the task.	and elevation plans; cardboard for making models
Determine the scale in which a map and/or plan has been drawn in the form 1: and use the scale to determine other dimensions on the map and/or plan.	
Assessment Level 1: Explain the meaning of a given scale e.g. explain what the scale 1 : 100 means in terms of the measurements on a plan and actual dimensions).	
Level 2: Use a given scale to determine actual measurements when given measured values, or measured values from given actual values.	
Level 3: Use a given scale in conjunction with measurement on a plan/map to determine length/dimensions.	
Determine the scale of a map or plan.	
Use a given scale in conjunction with other content or skills to complete a project (e.g. use a given scale to determine the dimensions in which to draw a 2-dimensional plan of an object, and then draw the plan).	
Level 4: Critique the scale in which an object has been drawn and offer an opinion as to a more appropriate scale.	

Dec com	ide on an appropriate scale aplete the project.	in which to draw a picture	or build a model, and then	
LEAF	EARNER ACTIVITY			
Poss Inve	ible assessment (incorporati stigation: What happens if y	ng maps and/or plans): ou resize a map or plan?		
lnve plar	stigate the effect that resizin or map.	g a map or plan with a nur	nber scale has on the scale of	the
Inve or m	stigate the effect that resizin hap.	g a map or plan with a bar	scale has on the scale of the p	plan
Disc plar	uss the advantages and disc ns.	advantages of using numbe	er and bar scales on maps and	ł
1.	The table below shows the c If the plan is drawn in the sco feature of the house.	limensions of different parts ale 1:50, use the scale to de	of a house as measured on a etermine the actual length of e	plan. each
	Feature	Measure on the plan	Actual real-world measure (metres)	
	House length	14cm	(7m)	
	House width	10.5cm	(5.25m)	
	Height of walls	4.4cm	(2.2m)	
	Height of the roof	3cm	(1.5m)	
	Height of the doors	4cm	(2m)	
	Width of the doors	1.6cm	(0.8m)	
	Height of the big windows	2.4cm	(1.2m)	
	Width of the big windows	3.6cm	(1.8m)	
	Height of the small windows	1.2cm	(0.6m)	
	Width of the small windows	2.5cm	(1.25m)	
2.	An architect is drawing a plo actual real-world measurem the scale to determine how plan.	an of a building in the scale lents of some of the dimens long the architect will need	1:20. The table below shows th ions of the building. You need to draw these dimensions on	ne to use the

Feature	Measure on the plan	Actual real-world
	(cm)	measure
Wall length	(16cm)	8m
Wall width	(9cm)	4.5m
Wall height	(4.4cm)	2.2m
Roof height	(2.4cm)	1.2m
Door height	(3.6cm)	1.8m

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	2	TOPIC	MAPS (Seating plan)LP5: TIME:60 min		
LESSON SUMMARY FOR: DATE STARTED:				DATE COMPLETED:					
LESSON OBJECTIVES		The Learn Work with Describe Describe	ners should be able to: h the following maps: map show the position of an object (e.g. the numbering systems used fo	wing the seat <i>furniture, sea</i> or seating in s	ing plan a a <i>ts</i>) in relat ports stadi	nd/or layout fo ion to surrounc ums;	or a classroom; seating plans for cinemas and sports fields; ling objects.		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook- Spot On
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.		4. NSC National
Explain the meaning of a given scale e.g. explain what the scale 1 : 100 means in terms of the measurements on a map and actual dimensions).	Performance Task: Refer to teacher activity column– LEARNER ACTIVITY Q1,2 and/ or: Select appropriate task from		examination question papers (2008 – 2011) 5. GDE SS IP Grade 10-12
Baseline assessment tasks	resources in the resources column.	Pre- knowledge –	Learner Notes and Typical
Dasenne assessment tasks Many learners battle with basic calculation skills and using a calculator Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks from resources in the resources column. LESSON PREPARATION Work with the following maps: map showing the seating plan and/or layout for a classroom; seating plans for cinemas and sports fields; Describe the position of an object (e.g. furniture, seats) in relation to surrounding objects. Describe the numbering systems used for seating in sports stadiums;	Homework: Refer to tea cher activity column-2 LEARNER ACTIVITY Q3 and/or: Select appropriate task from resources in the resources column	5min Baseline- 10 min Performance task - 20 min Home-work – 25 min	 examination questions 6. GDE Prelim question papers (2009 – 2011) 7. DoE NSC exempl ar question papers 8. GDE Data Bank Math Lit Questions and answers
Estimate distances using measurement and a given scale;			
 LEARNER ACTIVITY Lenasia South Secondary School decides to tile the floor of the school hall, measuring 18m by 18m. A scale drawing is to be made of the hall. Determine the scale (in simplified form) to be used if the length of the wall is 60mm. (2) (1:0,3) 			

 1.2 If each chair occupies 0.5 m² determine the no of chairs that can be placed in the hall. (648) 	9. Textbooks Street maps, provincial and
Question 2:	maps showing railway
	routes: timetables, fare
C A	tables and distance charts;
	appropriate floor plans
	and elevation plans;
	cardboard for making
	models
A: Lower level	
B: Upper Level	
C: Stage	
a) If a person wants to view the facial expressions and close-up views of the performers, which seat A, B, or C would you recommend? Give a reason for your answer. (C)	
b) If a person wants to view the play as a whole, seeing all the artists perform together, which seat A, B or C should the person select?	
Give a reason for your answer. (B)	
Explain why the cost of a ticket for seat A is less than the cost of the other seats. (A person will good view)	
 3. A 2-dimensional floor plan of an office is given below. A bar scale is attached to the floor plan. (Source of the picture:Marc North & Tamara Ridgway. 2009. <i>The Answer Series</i> Grade 11 <i>3-in-1 Study Guide</i>. Ch.3) 3.1 Use the bar scale to determine the length and width of the Boardroom.(2) 3.2 Use the bar scale to determine the width of the door leading into the boardroom.(2) 3.3 Use the bar scale to write down a <i>number scale</i> for this floor plan.(2) 	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	



GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	2	TOPIC	MAPS (Buildings)LP6 : TIME:60 min

LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:			
	The Learners should be able to:					
LESSON OBJECTIVES	Work with the following map shopping centre; Describe the position of an o Describe the position of a b Find locations, follow direction and/or techniques: direction	os: map showing the layout of the object (e.g. <i>buildings</i>) in relation t uilding in relation to surrounding b ons and develop directions for tro nal indicators "left", "right", "alon	e buildings and/or sports fields a to surrounding objects. buildings (e.g. <i>the building is dire</i> avelling between two or more la g", "straight", "up" and "down	It a school; map showing the layout of the stores in a <i>ectly across the road from the double-storey brick building</i>). ocations using the following mapping reference systems "; house and/or building numbering systems;		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to leacher activity.		4. NSC Nat ional
Work with the map showing the seating plant for a classroom;	Performance Task:		examination question
Baseline assessment tasks	Refer to teacher activity column- LEARNER ACTIVITY Q(1,2) and/ or:	Pre-	papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	Select appropriate task from	knowledge –	5. GDESSIP Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	resources in the resources column.	5min	Learner Notes and Typical
from resources in the resources column.	Homework:	Baseline- 10	examination questions
LESSON PREPARATION	Refer to teacher activity column-	min	6. GDE Prelim question
Work with the following maps: map showing the layout of the buildings and/or sports fields at a school: map showing the layout of the stores in a shopping centre:	Select appropriate task from	Perform-ance	papers (2009 – 2011)
Describe the position of an object (e.g. <i>buildings</i>) in relation to surrounding objects.	resources in the resources column		7. DoE NSC exempl ar
Describe the position of a building in relation to surrounding buildings (e.g. <i>the building is directly across the road from the double-storey brick building</i>)		Home-work-	question papers
Find locations, follow directions and develop directions for travelling between two or more		25 min	8. GDE Data Bank Math Lit Questions and answers 9.
indicators "left", "right", "along", "straight", "up" and "down"; house and/or building			Textbooks
numbering systems;			

LEARNER ACTIVITY	Street maps, provincial
	and national road maps,
	and maps showing railway
and the second se	routes; timetables, fare
and the state of the second	tables and distance charts;
	appropriate floor plans
and the second se	and elevation plans;
and the second	cardboard for making
	models
and the second s	
1.1 The picture alongside shows a map on which the questions that follow are based. The scale	
5cm = 2km should be used for the first two questions	
hat was the two cities (9.2 km) 1.2 The map also shows a famous fountain which is just 5 km	
gway from an EET college. How far is the fountein gway from the college? (12.5 cm)	
away normal reliege. Now fails the foothain away normine colleges (12,3 cm)	
2. The scale of the map is 1 : 30 000. The distance from Town C to Town D is 3 Km. Determine	
how far apart the towns are on the map.	
(10 cm)	
3. The flat – roofed clubhouse has a length = 18 m , breadth = 12m and height = 5m . Use the scale 1 : 200 and draw the floor plan to scale (4)	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	2	TOPIC	MAPS (Streets)LP7: TIME: 60 min

LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:			
	The Learners should be able to:					
LESSON OBJECTIVES	Work with the following map distances on a portion of roc Locate grid reference system and/or grid reference for var Estimate: the time that will it more locations: the average	s: street maps with and without a s ad; n (<i>e.g. North Street is located on A</i> rious streets. take to travel between two or mo speed travelled during a trip (i.e.	grid reference system; nationa AD14); the "street names index" re locations; the amount and distance travelled in terms of t	al and provincial road and rail maps; strip charts showing " located at the back of street maps showing the page cost of fuel that will be used in travelling between two or time taken).		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	activity:		2. Worksheets
INTRODUCTION	Refer to Teacher activity.		3. Calculator
Pre-knowledge assessment	Baseline Assessment :		4. NSC Nat ional
Work map showing the layout of the buildings.	Refer to Teacher activity.		examination question
Baseline assessment tasks	Performance Task:	Pre-	papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	LEARNER ACTIVITY Q1.1 and/ or:	knowledge – 5min	5. GDE SSI P Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Select appropriate task from	Paralina	Learner Notes and Typical
from resources in the resources column.	resources in the resources column.	paseime-	examination questions
	Homework:	10 min	6. GDE Prelim question
LESSON PREPARATION	Refer to teacher activity column-	Performance	papers (2009 – 2011)
Work with the following maps: street maps with and without a grid reference system; national and	Select appropriate task from	task- 20 min	7. DoE NSC exempl ar
Locate grid reference system (<i>e.g. North Street is located on AD14</i>); the "street names index"	resources in the resources column	Home-work-	question papers
located at the back of street maps showing the page and/or grid reference for various streets.		25 min	8. GDE Data Bank Math Lit
of fuel that will be used in travelling between two or more locations; the average speed travelled			Questions and answers 9. Textbooks
during a trip (i.e. distance travelled in terms of time taken).			
Determine appropriate stopping locations with consideration of petrol consumption and/or			
fatigue. Determine the "operating cost" of a vehicle using the fixed, running and operating cost			
Plan and cost trips using timetables, fare charts, distance charts and budgets.			

Work with a combination of maps showing different perspectives and scales to navigate to a		Street maps, provincial
destingtion. (e.g., When travelling between two cities, a map with a large scale showing national roads and		and national road maps,
towns will be useful. Upon approaching one of the cities, a map showing the suburbs and major		and maps showing railway
roads in and around the city will be more practical for determining in which direction to travel to		routes; timetables, fare
much smaller scale will then become more practical for navigating to the particular destination.)		tables and distance
Interpret the following compass directions in the context of appropriate maps and plans:		charts; appropriate floor
"North", "South", "East" and "West";		plans and elevation plans;
"North-east", "North-west", "South-east" and "South-west".		cardboard for making
In order to:		models
Make sense of signboards on roads and in map books indicating direction (e.g. <i>The symbols "N10" on a roadside signboard indicate that you are travelling North on route/road 10</i>).		
When working with maps, it is unreasonable to expect learners to measure and determine		
distances, travelling time, petrol consumption and/or average speed accurately. There simply		
are too many factors that influence the accuracy of such calculations when working with maps:		
there are traffic lights or other obstructions (e.g. roadworks) on a stretch of road.		
For this reason, maps should be used only for <u>estimating</u> distances, travelling times and petrol consumption between different places		
A more appropriate context in which to test accurate measurement involves working with floor		
and elevation plans.		
LEARNER ACTIVITY		
Make use of the map on appendix A7 to answer the questions that follow:		
1.1 Calculate the actual distance between Kroonstad and Sasolburg.		
approximately 111 km		
1.2 If there is an FET college in Welkom, which measures a certain distance on the map (in		
cm), away from a famous fountain in Viljoenskroon, what is the actual distance between the FET		
college and the fountain? Hint: Use Viljoenskroon as the destination.		
approximately 100 km		
	1	

Name of Teacher:	HOD:	
Sign:	Sign:	

Deter	Deter	
Date:	Date:	

APPENDIX A (This map must be used to answer question in activity 1):

Source:www.africadestiny.com



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GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	2	TOPIC	MAPS (Elevation, estate)LP8 : TIME: 60 min
LESSON SUMN	Mary Fo	R: DATE STARTE	D:		DATE CON	MPLETED:	
LESSON OBJE	CTIVES	The Lea Work wi Interpre "North", "North-e	rners should be able to: th the following maps: elevatior t the following compass directic , "South", "East" and "West"; east", "North-west", "South-east	n maps (e.g. <i>of t</i> ons in the contex " and "South-we	<i>he Comra</i> t of appro est".	a <i>des Marathon</i> opriate maps a	<i>route</i>); residential or housing estate maps. nd plans:
		"North-e	east", "North-west", "South-east	" and "South-we	est".		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to leacher activity.		4. NSC Nat ional
Work with the map showing the layout of the buildings. Explain the meaning of a given scale	Performance Task:		examination question
	LEARNER ACTIVITY Q1-5 and/ or:		papers (2008 – 2011)
Baseline assessment tasks	Select appropriate task from	Pre-	5. GDESSIP Grade 10-12
Many learners battle with basic calculation skills and using a calculator	resources in the resources column.	knowledge – 5min	Learner Notes and Typical
from resources in the resources column	Homework:	Develop 10	examination questions
	8 LEARNER ACTIVITY Q and/ or:	min	6. GDE Prelim question
Work with the following maps: elevation maps (e.g. of the Comrades Marathon route):	Select appropriate task from	Performance	papers (2009 – 2011)
residential or housing estate maps.	resources in the resources column	task- 20 min	7. DoE NSC exempl ar
Interpret the following compass directions in the context of appropriate maps and plans:		Home-work-	question papers
"North", "South", "East" and "West";		25 min	8. GDE Data Bank Math Lit
"North-east", "North-west", "South-east" and "South-west".			Questions and answers 9.
Interpret elevation plans of buildings that include the words "North Elevation", "South			ICAIDOOKS
Elevation", "East Elevation" and "west Elevation".			
Inform decisions on where to position a house or a garden in relation to the position of the sun			
A more appropriate context in which to test accurate measurement involves working with floor and elevation plans.			

LEARNER ACTIVITY		Street maps, provincial
1. The following legend appears in a road chart which is schematic representation of the		and national road maps,
Soweto Marathon route.		and maps showing railway
0 15 30 45 60 km	,	routes; timetables, fare
		tables and distance charts;
		appropriate floor plans
		and elevation plans;
What is the ratio of the legend?1 : 1 500 000		cardboard for making
2. The scale of a map is 1: 40 000. The distance between Town A and Town B, on the map is 9,5		models
cm. Calculate the distance, in Km, between the towns. (3,8 km) 3. Use the bar scale provided on the man to determine the approximate distance from		
Bergville to Winterton.		
4. Use the bar scale provided on the map to determine the approximate distance from		
Pietermaritzburg to Pinetown.		
5. The actual distance from Mooi River to Estcourt is 30 km. Use this information to determine an		
6. Estimate the direction of Pietermaritzburg in relation to Durban.		
7. Determine the bearing of Durban from Pietermaritzburg.		
8. Calculate the distance in Km between Durban and Pietermaritzburg		

Reflection/Notes:		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

Question 3-8

Below is a map of a section of KwaZulu-Natal. (Source: www.sa-venues.com/maps)



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GRADE 12 SI	UBJECT MATHEMATICA	LITERACY WEEK	2 TOPIC	MAPS (Consolidation)LP9: TIME: 60 min
LESSON SUMMARY FOR: DA	TE STARTED:		DATE COMPLETED:	
LESSON OBJECTIVES	The Learners should be able Identify the labels/names of Identify the names of the to Identify the scale of a map. Identify the position of two I locations. Interpret a given set of direct Provide a set of directions to Use a map in conjunction will dentify a possible route bet distance between the two I Estimate travelling times bet Critique a proposed travel r Use maps in conjunction will fare tables; petrol price; etc Make decisions regarding of	to: national roads (e.g. N3) the vns on the route between cations on a map and us tions and describe what the travel between two loca tha distance chart to det veen two locations on a re- ocations. ween two or more location bute in relation to distance in other travel resources (en to plan and cost a trip.	hat must be travelled on to the in two locations. Se given distance values on the ocation the directions lead to ations in a town using street no termine the shortest route to map, measure the distance to ons based on estimated travel e, estimated travelling times, e.g. exchange rate information is during a journey based on	ravel between two locations. he map to determine the travelling distance between the two o. ames. travel between two locations. between the locations, and use a given scale to estimate the elling speed and known or calculated distances. etc, and suggest and justify possible alternative routes. on; distance chart; bus timetable; etc) and financial information (e.g. considerations of fatigue, petrol consumption, travelling time, etc.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:	Pre-	1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.	knowledge – 5min	2. Worksheets
INTRODUCTION	Baseline Assessment :	J. J	3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.	Baseline- 10	
Work with Maps (seating, buildings, street, elevation)	Performance Task:	min	
	Refer to te acher activity column-	Performance	

Baseline assessment tasks	Assignment: Finding your way:	task- 20 min	4. NSC Nat	ional
Many learners battle with basic calculation skills and using a calculator	Select appropriate task from	Home-work-	examination qu	estion
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks		25 min	papers (2008 – 2011)	
from resources in the resources column.	Homework:	23 11111		
LESSON PREPARATION	Refer to te acher activity column- Assignment: <i>Planning a trip</i> : Select		5. GDE SSI P Grade	10-12
Revision	appropriate task from reso urces in		Learner Notes and T	vpical
Work with the tollowing maps: map showing the seating plan and/or layout for a classroom; map showing the layout of the buildings and/or sports fields at a school: map showing the	the resources column		examination question	ns is
layout of the stores in a shopping centre; seating plans for cinemas and sports fields; street			6. GDE Prelim qu	estion
maps with and without a grid reterence system; national and provincial road and rail maps; strip charts showing distances on a portion of road; elevation maps (e.g. <i>of the Comrades</i>			papers (2009 – 2011)	
Marathon route); residential or housing estate maps.			7. DoE NSC exempl	ar
Describe the position of an object (e.g. buildings, furniture, seats) in relation to surrounding			question papers	
objects. Describe the position of a building in relation to surrounding buildings (e.g. <i>the building is directly across the road from the double-storey brick building</i>). Find locations, follow directions and develop directions for travelling between two or more locations using the following mapping reference systems and (or techniques: directional			8. GDE Data Bank M Questions and answe 9. Textbooks Street maps, provinci	ath Lit rs al
indicators "left", "right", "along", "straight", "up" and "down"; house and/or building			and national road me	aps,
numbering systems; numbering systems used for seating in sports stadiums; grid reference			and maps showing ro	iilway
street maps showing the page and/or grid reference for various streets.			routes; timetables, fa	e
Estimate: distances using measurement and a given scale (number or bar scale); the time that will be			tables and distance of	charts;
used in travelling between two or more locations; the average speed travelled during a trip (i.e.			appropriate floor pla	าร
distance travelled in terms of time taken).			and elevation plans;	
Determine appropriate stopping locations with consideration of petrol consumption and/or			cardboard for making	Э
fatigue. Determine the "operating cost" of a vehicle using the fixed, running and operating cost tables distributed by the Automobile Association of South Africa.			models	
Fight and cost hips using limetables, rate chans, distance chans and budgets				
Work with a combination of maps showing different perspectives and scales to navigate to a destination.				
(e.g. When travelling between two cities, a map with a large scale showing national roads and towns will be useful. Upon approaching one of the cities, a map showing the suburbs and major roads in and around the city will be more practical for determining in which direction to travel to get to a particular destination in the city. Upon arrival in a particular suburb, a street map with a much smaller scale will then become more practical for navigating to the particular destination.)				

Interpret the following compass directions in the context of appropriate maps and plans: "North", "South", "East" and "West"; "North-east", "North-west", "South-east" and "South-west".		
In order to: Make sense of signboards on roads and in map books indicating direction (e.g. <i>The symbols</i> <i>"N10" on a roadside signboard indicate that you are travelling North on route/road 10</i>). Interpret elevation plans of buildings that include the words "North Elevation", "South Elevation", "East Elevation" and "West Elevation". Inform decisions on where to position a house or a garden in relation to the position of the sun at different times of the day.		
Assessment		
Level 1 Identify the labels/names of national roads (e.g. N3) that must be travelled on to travel between two locations. Identify the names of the towns on the route between two locations. Identify the scale of a map.		
Level 2 Identify the position of two locations on a map and use given distance values on the map to determine the travelling distance between the two locations. Interpret a given set of directions and describe what location the directions lead to. Provide a set of directions to travel between two locations in a town using street names.		
Level 3 Use a map in conjunction with a distance chart to determine the shortest route to travel between two locations. Identify a possible route between two locations on a map, measure the distance between the locations, and use a given scale to estimate the distance between the two locations. Estimate travelling times between two or more locations based on estimated travelling speed and known or calculated distances.		
Level 4 Critique a proposed travel route in relation to distance, estimated travelling times, etc, and suggest and justify possible alternative routes. Use maps in conjunction with other travel resources (e.g. exchange rate information; distance chart; bus timetable; etc) and financial information (e.g. fare tables; petrol price; etc) to plan and cost a trip. Make decisions regarding appropriate stopping points during a journey based on considerations of fatigue, petrol consumption, travelling time, etc.		

LEARNER ACTIVITY		
Possible assessment:		
Assignment: Finding your way		
Work with a given map to find your way to a destination.		
OR		
Select the seats with the best view for an event from the remaining available seats. Possible		
assessment (incorporating finance, maps and timetables):		
Assignment: Planning a trip		
Plan a trip between two cities or countries, making use of maps, bus/train/taxi/flight timetables,		
tariff tables, exchange rates (if necessary) and the AA fixed, running and operating cost tables		
(if necessary).		

eflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJ	ECT	MATHEMATICAL LITE	RACY	WEEK	3	TOPIC	PLANS (Assembly Diagrams)LP10: TIME: 60 min
LESSON SUMMARY FOR: DATE STARTED: DATE COMPLETED:									
The Learners should be able to:									
LESSON OBJECTIVES Work with instruction/assembly diagrams, containing words and/or pictures, found in manuals for the following in order : plugs; plastic models; unassembled wooden furniture units; cellphones; electrical appliances that require individual components to be connected children's toys includir Leao-type kits.									

Complete the task presented in the instructions and/or explain what the instructions mean and/or represent using everyday language.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment		1.Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	activity:		2. Worksheets
INTRODUCTION	Refer to Teacher activity.		3. Calculator
Pre-knowledge assessment	Baseline Assessment :		4. NSC National examination
Explain the meaning of a given scale	Refer to Teacher activity.		question papers (2008 – 2011)
e.g. explain what the scale 1 : 100 means in terms of the measurements on a plan and actual dimensions)	Performance Task:		5. GDE SSI P Grade 10-12
Baseline assessment tasks	Refer to teacher activity column-	Pre- knowledge –	Learner Notes and Typ ical
Many learners battle with basic calculation skills and using a calculator	LEARNER ACTIVITY QT and/ or: Select appropriate task from	5min	examination questions
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation	resources in the resources column.	Baseline- 10	6 GDE Prelim question papers
tasks from resources in the resources column.	Homework	min	(2009 - 2011)
LESSON PREPARATION	Refer to teacher activity column-	Porformanco	7 DoE NSC exempler question
Plans	LEARNER ACTIVITY Q2 and/ or	task- 20 min	7. Doe NSC exemplal doeslion
Work with instruction/assembly diagrams, containing words and/or pictures, found in	select appropriate task from		papers
units: cellphones (e.a. installing a battery and sim card: or operating instructions): electrical		Home-work- 25	8. GDE Data Bank Math Lit
appliances that require individual components to be connected (e.g. connecting		min	Textbooks
speakers to a hi-fi; or connecting an aerial to a television); children's toys including Lego-			Street maps, provincial and
			national road maps, and
1. Use the diagram of a music system to explain how you would inset a USB and earphones			timetables fare tables and
that will enable you to listen to music. See diagram below.			distance charts; appropriate
			floor plans and elevation
			plans; cardboard for making
			models

(Place the earphones into earphone socket in the bottom left hand corner of the music system, no.10. Place the USB into the USB socket next to the earphone socket, no.11. Switch the music system, no,3. Push the CD/USB/CARD button, no.6 to select USB then press the play mode button, no.7. Adjust the volume, no.12, as required.) Front view CD door 10 Earphone socket 11 USB socket 2 iPOD dock ON/OFF button 12 Volume button 3 Function button 13 SD/MMC card slot 4 5 PROG button 14 LCD (liquid crystal display) 14 6 CD/USB/CARD button 15 Tuning knob -00 15 -16 7 PLAY mode button 16 Play/Pause/ST/MO È 17 Stop/Band button 17 0 -SKIP<< button. 9. 8 SKIP>> 12 10 11 13 2. Provide sentences to describe these diagrams a. CH-O 00
Answers: a. Insert the supporting pins b. Use nails to reinforce c. Insert pins to support shelves		

Reflection/Notes:			

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE 12 SUBJ	ECT MATHEMATICAL LITERACY WEEK	3 TC	OPIC PLANS	S(Floor/Layout)LP1	1: TIME: 60 min
LESSON SUMMARY FOR: DATE START	ED:		DATE COMPLETED:		
LESSON OBJECTIVES The Learners should be able to: Work with the rough and scaled floor/layout plans showing a top view perspective in the context of the following: a familiar structure; a less familiar structure; a complex structure. Understand the symbols and notation used on plans Describe what is being represented on the plans. Critique the layout of the structure shown on the plan and suggest alternative layout options. Determine actual lengths of objects shown on plans using measurement and a given scale (number or bar scale). Determine quantities of materials needed by using the plans together with perimeter, area and volume calculations.					
	TEACHER ACTIVITIES		LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS			Pre-knowledge		1. Textbook
Telling, Explanation, Discussion, Inve	stigation, Calculation, Interpretation, Analysis		assessment activity:		2. Worksheets
INTRODUCTION			Refer to Teacher		3. Calculator
Pre-knowledge assessment			activity.		4. NSC Nat ional
Identify the scale of a plan.	lan		Baseline Assessment :		examination question
Read off the value(s) of given dime	nsions on the plan.		activity.	Pre- knowledge –	papers (2008 – 2011)
Baseline assessment tasks				5min	5. GDE SSI P Grade 10-12
Many learners battle with basic cal	culation skills and using a calculator		Performance Task: Refer to teac ber	Baseline 10	Learner Notes and Typical
Ineretore ensure that learners do	the calculation tasks first. Select appropriate calculation	on tasks from	activity column-	min	examination questions
resources in the resources column.			LEARNER ACTIVITY Q1,2	Performance	6. GDE Prelim question
LESSON PREPARATION			appropriate task from	task- 20 min	papers $(2009 - 2011)$
Plans			resources in the	Home work 25	7 DoFNSC exemple or
Work with the following plans: rough	and scaled <u>floor/layout plans</u> showing a top view perspec	ctive	resources column.	HOITHE-WOIK- 25	7. DOLINGC EXEMPTION
			Homework:	min	question papers
And in the context of the following: a familiar structure (eg. classroom; room in a house \rightarrow bedroom or lounge); a less familiar structure (e.g. office space containing cubicles; a garden/tool shed); a complex			Refer to teac her activity column-		Lit Questions and answers

lounge); a less familiar structure (e.g. office space containing cubicles; a garden/tool shed); a complex structure (e.g. house \rightarrow RDP house).

appropriate task from Understand the symbols and notation used on plans (e.g. the symbol for a window is a double line; the resources symbol for a door is a vertical line attached to a quarter circle indicating the swing direction of the door). resources column

Textbooks

LEARNER ACTIVITY Q3

or:

in

and/

Select

the





2.2 What are the dimensions (only or one face area) of the real bed, o			
bed: 1.9 m x 2.4 m			
wardrobe: 1.9 m x 2.4 m			
table: 1 m x 0,5 m			
2.3 Will Thato be able to fit another bed in his bedroom with the prese If yes, where?	ent arrangement of the furniture?		
Remaining space = the flat floor area (minus) the area occupied by other	items		
If it is bigger than the bed area, then another bed will fit. However, make a difference in area as the furniture may not have to fit exactly in the room (maneuver.	allowance for a reasonable there should be some space to		
2.4 Draw the sketch of the floor plan and show how you would like to your bedroom.	arrange the furniture if this was		
Allocate marks appropriately for a sensible diagram with all items fitted. The drawing must be to scale preferably.			



Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	3	TOPIC	PLANS (Elevation)LP12: TIME: 60 min

LESSON SUMMARY FOR: DATE STARTED:		DAT	IE COMPLETED:	
LESSON OBJECTIVES	The Learners should be able Work with the rough and sca structure; a less familiar struc Understand the symbols and Describe what is being repre Critique the layout of the str Determine actual lengths of Determine quantities of mat Understand the terms: North	to: Iled elevation plans (front, back and si ture; a complex structure . I notation used on plans sented on the plans. Justure shown on the plan and suggest objects shown on plans using measure erials needed by using the plans toget Elevation: South Elevation: East Elevat	ide) showing a side view t alternative layout optio ement and a given scale ther with perimeter, area tion: West Elevation and	 perspective in the context of the following: a familiar ons. (number or bar scale). and volume calculations. the relevance of compass directions in the construction of
	buildings. Connect the features showr	on elevation plans with features and	perspectives shown on c	a floor plan of the same structure.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to leacher activity.	Pre-	4. NSC Nat ional
Identity the scale of a plan.	Performance Task:	knowledge – 5min	examination question
Explain the meaning of term: elevation plan.	LEARNER ACTIVITY Q1 and/ or:	5	papers (2008 – 2011)
Read off the value(s) of given dimensions on the plan.	Select appropriate task from	Baseline- 10 min	5. GDE SSI P Grade 10-12
	resources in the resources column.	Porformanco	Learner Notes and Typical
Baseline assessment tasks	Homework:	task- 20 min	examination questions
Many learners battle with basic calculation skills and using a calculator	LEARNER ACTIVITY Q2 and/ or:	Home-work-	6. GDE Prelim question
Inerefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Select appropriate task from	25 min	papers (2009 – 2011)
from resources in the resources column.		2011111	7. DoE NSC exempl ar
			question papers

LESSON PREPARATION	8. GDE Data Bank Math Lit
Plans	Questions and answers
Work with the following plans: rough and scaled elevation plans (front, back and side) showing	Textbooks
a side view perspective.	Street maps, provincial
And in the context of the following in order to: a familiar structure (eq. classroom: room in a	and national road maps,
house \rightarrow bedroom or lounge); a less familiar structure le a office space containing cubicles; a	and maps showing railway
arden/tool shed): a complex structure (e.g. house \rightarrow RDP house)	routes; timetables, fare
	tables and distance charts;
Understand the symbols and notation used on plans (e.g. the symbol for a window is a double	appropriate floor plans
line: the symbol for a door is a vertical line attached to a quarter circle indicating the swing	and elevation plans;
direction of the door)	cardboard for making
Describe what is being represented on the plans	models
Critical the layout of the structure shown on the plan and suggest alternative layout options.	
Determine actual lengths of objects shown on plans using measurement and a given scale	
(number or bar scale).	
Determine auantities of materials needed by using the plans together with perimeter, area and	
volume calculations.	
Understand the terms "North Elevation": "South Elevation": "East Elevation": "West Elevation"	
and the relevance of compass directions in the construction of buildings.	
Connect the features shown on elevation plans with features and perspectives shown on a floor	
plan of the same structure.	
LEARNER ACTIVITY	
1. Explain Elevation Plan with example.	
Elevation Plan is a two-dimensional vertical view seen when the object is looked at from the	
position to one side of the object and looking straight at it. Usually elevations are drawn to scale	
so that magging months can be taken from them, and are further identified as front side or and	
so mai measorements can be taken nom ment, and are former taenined as nom, side of end	
elevations. Points of the compass can also be used in identifying elevations.	
For any last the fallet in a interview hat the set of the state is far-in the the Castle	
Examples: The following identification hold only if the house is facing to the south.	
"South" Elevation	







Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

I

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	3	TOPIC	PLANS (Design Drawings)LP13: TIME: 60 min

LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:	
LESSON OBJECTIVES	The Learners should be able Determine the most approp on a plan when actual dime Draw scaled 2-D floor and e a familiar structure ; a less familiar structure	to: riate scale in which to draw a plc ensions are known. levation plans for: ure	an and use the scale In order to	determine how long/wide/high an object must be drawn

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.		4. NSC Nat ional
Explain the meaning of terms (e.g. floor plan; elevation plan; layout plan; etc).	Performance Task:	Pre-	examination question
Baseline assessment tasks	Refer to te acher activity column-	knowledge – 5min	papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	Select appropriate task from	D	5. GDESSIP Grade 10-12
Iherefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	resources in the resources column.	Baseline- 10 min	Learner Notes and Typical
from resources in the resources column.	Homework:		examination auestions
LESSON PREPARATION	Refer to te acher activity column-	Performance	6. GDE Prelim question
Plans	Select appropriate task from		papers (2009 – 2011)
determine how long/wide/high an object must be drawn on a plan when actual dimensions	resources in the resources column	Home-work-	
are known.		25 min	
			question papers
Draw scaled 2-D floor and elevation plans for: a familiar structure (eg. classroom; room in a house \rightarrow bedroom or lounge); a less familiar structure (e.g. office space containing cubicles; a garden/tool shed); a complex structure (e.g. house \rightarrow RDP house).			8. GDE Data Bank Math Lit Questions and answers Textbooks



GRADE 12 SU	IBJECT	MATHEMATICAL LITE	RACY	WEEK	4	TOPIC	PLANS (consolidation) LP14 TIME: 60 min
LESSON SUMMARY FOR: DATE STARTED:					DATE COMPLETED	D:	
LESSON OBJECTIVES	The Learne Identify the Explain the Read off th Use a given Identify on Measure d Use plans in order to es Describe a Critique the Decide on Make conr	ers should be able to e scale of a plan. e meaning of terms (e ne value(s) of given o n key to identify the which plan a partic imensions on a plan in conjunction with o stablish the amount o an item represented i e design of a structu an appropriate scal <u>nections between pl</u>	e.g. floor plan; dimensions on number of wir ular structure i and use a giv ther content, s arpet needed n a plan re shown on a e in which to ans showing c	elevation pla the plan. dows/doors/r s shown. en scale to de skills or applice d for the floor plan. draw a plan a	n; layout plan; etc). coms shown on a pla etermine actual dime ations to complete a or the room). nd then draw the pla of the same structure	an for a builc ensions. project (e.g an. e.	ling. . interpret plans to determine the dimensions of a room in

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:	Pre-	1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.	5min	2. Worksheets
INTRODUCTION	Baseline Assessment :	Baseline 10	3. Calculator
Pre-knowledge assessment	Refer to federier delivity.	min	4. NSC Nat ional
Identify the scale of a plan.	Performance Task:	Performance	examination question
Read off the value(s) of given dimensions on the plan.		task- 20 min	papers (2008 – 2011)

Baseline assessment tasks	I FARNER ACTIVITY - Assignment	Home-work-	5 GDESSLP Grade 10-12
Many learner battle with basic calculation skills and using a calculator	Building a house	25 min	Logran Notos and Tursian
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks		25 min	
			examination questions
from resources in the resources column.	Refer to teacher activity column-		6. GDE Prelim question
LESSON PREPARATION	LEARNER ACTIVITY- <u>Assignment</u> :		papers (2009 – 2011)
	Building a house		7 DoENSC exempl ar
Plans- Revision			
for the following in order : plugs: plastic models: unassembled wooden furniture units:			question papers
cellphones (e.g. installing a battery and sim card; or operating instructions); electrical			8. GDE Data Bank Math Lit
appliances that require individual components to be connected (e.g. connecting speakers to			Textbooks
a hi-fi; or connecting an aerial to a television); children's toys including Lego-type kits.			Street maps, provincial
Complete the task presented in the instructions and/or explain what the instructions mean			and national road maps,
and/or represent using everyday language.			and maps snowing railway
			tables and distance charts;
Work with the following plans: rough and scaled <u>floor/layout plans</u> showing a top view			appropriate floor plans
perspective rough and scaled design drawings of items to be manufactured (e.g. clothing:			and elevation plans;
furniture).			caraboara for making
			models
And in the context of the following in order to : a familiar structure (e.g. classroom; room in a house a bedroom or lounge) : a less familiar structure (e.g. office space containing cubicles; a			
aarden/tool shed); a complex structure (e.a. house \rightarrow RDP house).			
Understand the symbols and notation used on plans (e.g. the symbol for a window is a double			
line; the symbol for a door is a vertical line attached to a quarter circle indicating the swing direction of the door)			
Describe what is being represented on the plans.			
Critique the layout of the structure shown on the plan and suggest alternative layout options.			
Determine actual lengths of objects shown on plans using measurement and a given scale			
(number or bar scale).			
volume calculations.			
Understand the terms "North Elevation"; "South Elevation"; "East Elevation"; "West Elevation"			
and the relevance of compass directions in the construction of buildings.			
Connect the teatures shown on elevation plans with teatures and perspectives shown on a			

Determine the most appropriate scale in which to draw a plan and use the scale In order to determine how long/wide/high an object must be drawn on a plan when actual dimensions are known. Draw scaled 2-D floor and elevation plans for: a familiar structure (e.g. <i>classroom; room in a house</i> \rightarrow <i>bedroom or lounge</i>); a less familiar structure (e.g. <i>office space containing cubicles; a garden/tool shed</i>); a complex structure (e.g. <i>house</i> \rightarrow <i>RDP house</i>).	
Assessment	
Level 1 Identify the scale of a plan.	
Explain the meaning of terms (e.g. floor plan; elevation plan; layout plan; etc).	
Read off the value(s) of given dimensions on the plan (e.g. the length of the wall is 4 m).	
Level 2 Use a given key to identify the number of windows/doors/rooms shown on a plan for a building. Identify on which plan a particular structure is shown (e.g. the door is shown on the North elevation plan).	
Level 3 Measure dimensions on a plan and use a given scale to determine actual dimensions. Use plans in conjunction with other content, skills or applications to complete a project (e.g. interpret plans to determine the dimensions of a room in order to establish the amount carpet needed for the floor or the room).	
Level 4 Describe an item represented in a plan Critique the design of a structure shown on a plan. Decide on an appropriate scale in which to draw a plan and then draw the plan. Make connections between plans showing different views of the same structure (e.g. explain which wall shown on a floor plan is represented on a particular side view plan).	
LEARNER ACTIVITY Possible assessment (incorporating finance, models, plans, perimeter, area and volume): <u>Assignment</u> : Building a house Investigate some of the considerations involved in the construction of a house, including: interpreting plans of the house, building a scale model of the house and performing perimeter, area and volume calculations in the context of fencing, paint, concrete, etc.; analysing a budget for the building project; analysing inflation figures to predict possible adjustments to building costs.	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATIC	AL LITERACY	WEEK	4	TOPIC	MODELS (Containers) LP15: TIME: 60 min
LESSON SUMMARY FOR: DATE STARTED:						DATE COMP	LETED:	
LESSON OBJEC	CTIVES	The Learn Investigat cans and, Make and dimension Investigat Investigat Investigat	ers should be able e packaging arrar (or boxes for optim a use the 3-dimens al models of pack e the best packag e the best packag e the amount of m e the number of fu	to: ngements using a nal usage of space ional scale mode aging containers ing shape to use ing shape to use naterial used to m irniture items that	actual_cans an ce and to dete els of packagir s in order to: for packaging for fragile and nake a box. t can fit in a ve	d a range of ac ormine the most ag containers ar g a particular pr d irregular-shape onue, while cons	ctual_boxes in ord cost-effective w nd 2-dimensional roduct. ed objects, while sidering the spac	ler to determine the most appropriate way to package ay to package a number of cans and/or boxes. scale cut-outs/pictures of appropriate views of 3- trying to minimise wasted space and cost. se needed for tables, chairs and walking around.
		Estimate o	uantities of mater	ials needed using	g perimeter, ar	ea and volume	calculations.	

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook-Spot On
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.		4. NSC Nat ional
Explain the meaning of a given scale	Performance Task:	Pre-	examination question
dimensions).	Refer to teacher activity column-	knowledge -	papers (2008 – 2011)
	Select appropriate task from	5min	5. GDESSIP Grade 10-12
Baseline assessment tasks	resources in the resources column.	Baseline- 10	Learner Notes and Typi cal
Many learners battle with basic calculation skills and using a calculator	Homework:	min	examination questions
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Refer to teacher activity column-	Performance	6. GDE Prelim question
from resources in the resources column.	Select appropriate task from	task- 20 min	papers (2009 – 2011)
LESSON PREPARATION	resources in the resources column	Home-work-	7. DoE NSC exempl ar
Models		25 min	question papers
Investigate packaging arrangements using <u>actual</u> cans and a range of <u>actual</u> boxes.			8. GDE Data Bank Math Lit
In order to: Determine the most appropriate way to package cans and/or boxes for optimal usage of			Questions and answers
space.			
Determine the most cost-effective way to package a number of cans and/or boxes.			

Make and use the following in order to: 3-dimensional scale models of packaging containers (e.g. <i>packaging containers for balls, biscuits, etc.</i>); 2-dimensional scale cut-outs/pictures of appropriate views of 3 dimensional models of packaging containers	Street maps, provincial and national road maps, and maps showing roilyay
	routes; timetables, fare
Investigate the best packaging shape to use for packaging a particular product (e.g. Should halls be packaged in a cylindrical or rectangular container?)	tables and distance charts;
Investigate the best packaging shape to use for fragile and irregular-shaped objects (e.g. a	and elevation plans;
<i>television set</i>), while trying to minimise wasted space and cost.	cardboard for making
Investigate the amount of material used to make a box.	models
needed for tables, chairs and walking around.	
Estimate quantities of materials needed (e.g. <i>paint; tiles</i>) using perimeter, area and volume	
calculations.	
The primary focus is on using scale models and pictures to solve problems.	
The models and/or pictures must be drawn to scale.	
Additional contexts and/or resources involving 3-D models and 2-D pictures in which the concepts described above can be explored include the following:	
 packaging containers: fruit juice containers; chocolate boxes; cool drink cans; tinned food; 	
tennis ball containers; golf ball containers; boxes used for packaging fruit juice containers	
and/or cool drink cans; boxes used for packaging floor files.	
LEARNER ACTIVITY	
1. Bring an empty food tin or cool drink can to school. Make a model of the tin using scrap paper	
by rolling it around the tin, stapling it, then cutting the correct height of the original tin. Make	
24 such tins.	
a. Calculate the minimum dimensions of a box that would be able to	
hold 24 tins.	
b. Build a cardboard box and place the tins inside.	
2. Design packaging for three tennis balls.	
a) Would you require more material to	
package the tennis balls in a	
rectangular prism or in a cylinder?	
b) Create both packages to determine the answer.	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	4	TOPIC	MODELS (Buildings) LP16 TIME: 60 min

LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:	
	The Learners should be able	to:		
LESSON OBJECTIVES	Make and use the 3-dimens Investigate possible ways to Critique aspects of the layou Investigate the placement of Estimate quantities of mater Investigate the number of fu Analyse a model and critiqu	ional scale models of buildings fro stack/arrange boxes in a storero ut and/or design of a structure ar of cupboards and other furniture ials needed (e.g. <i>paint; tiles</i>) using urniture items that can fit in a venue the layout of the structure show	om given or constructed 2-dime om in order to minimise wasted ad make suggestions for alterati n a room. g perimeter, area and volume ue, while considering the space on in the model.	ensional floor and elevation plans in order to : 1 space. ions. calculations+. e needed for tables, chairs and walking around.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook-
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.		4. NSC Nat ional
Measure the dimensions of a container constructed.	Performance Task:		examination question
	Refer to teacher activity column-	Pre-	papers (2008 – 2011)
Baseline assessment tasks	Select appropriate task from	knowledge –	5. GDE SSI P Grade 10-12
Many learners battle with basic calculation skills and using a calculator	resources in the resources column.	5min	Learner Notes and Typical
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Homework:	Baseline- 10	examination questions
from resources in the resources column.	Refer to teacher activity column-	min	6. GDE Prelim question
	Select appropriate task from	Performance	papers (2009 – 2011)
LESSON PREPARATION	resources in the resources column	task- 20 min	7. DoE NSC exempl ar
Models		Home-work-	question papers
Make and use the following in order to : 3-dimensional scale models of buildings (e.g. <i>classroom; storeroom; school hall; house</i>) from given or constructed 2-dimensional floor and elevation plans;		25 min	8. GDE Data Bank Math Lit Questions and answers Textbooks
Investigate possible ways to stack/arrange boxes in a storeroom in order to minimise wasted space. Critique aspects of the layout and/or design of a structure and make suggestions for alterations. Investigate the placement of cupboards and other furniture in a room.			

Estimate quantities of materials needed (e.g. <i>paint; tiles</i>) using perimeter, area and volume calculations+. Investigate the number of furniture items that can fit in a venue, while considering the space needed for tables, chairs and walking around.	Street maps, provincial and national road maps, and maps showing railway routes; timetables, fare
The primary focus is on using scale models and pictures to solve problems. The models and/or pictures must be drawn to scale. Additional contexts and/or resources involving 3-D models and 2-D pictures in which the concepts described above can be explored include the following:	tables and distance charts; appropriate floor plans and elevation plans; cardboard for making models
• 3-D models of buildings: school tuck shop; spaza shop and/or local café/supermarket; sports club change room.	

Reflection/Notes:		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATICAL	ITERACY	WEEK	5	TOPIC	MODELS (Cut-outs/ Pictures) LP17: TIME: 60 min
				•				
LESSON SUMI	MARY FC	R: DATE STARTE	D:			DATE COMPLETE	ED:	
LESSON OBJE	ECTIVES	The Lea Make a Investig Investig Investig Estimate Make a Investig Critique Investig	rners should be able nd use the 2-dimens ate the best packas ate the best packas ate the amount of n ate the number of fu e quantities of mater nd use the 2-dimens ate possible ways to aspects of the layo ate the placement	to: ional scale cut-or ging shape to use ging shape to use naterial used to m urniture items that ials needed using ional scale cut-or stack/arrange b ut and/or design of cupboards and	uts/pictures of for packaging for fragile and nake a box. t can fit in a ve g perimeter, ar uts/pictures of oxes in a store of a structure d other furniture	appropriate views g a particular produ d irregular-shaped c enue, while conside ea and volume cal appropriate views room in order to min and make suggestin e in a room.	of 3-dimension uct. objects while ring the space lculations. of buildings in nimise wasted ons for alterat	nal models of packaging containers in order to: trying to minimise wasted space and cost. e needed for tables, chairs and walking around. n order to : d space. tions.
Estimate quantities of mat Investigate the number of				urniture items that	g perimeter, ar t can fit in a ve	ea ana volume cal enue, while conside	ring the space	e needed for tables, chairs and walking around.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook –Spot On
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.	Pre-	4. NSC Nat ional
Measure the dimensions of a building constructed.	Performance Task:	knowledge –	examination question
Use a given scale to determine the dimensions in which to build a Building model.	Refer to teacher activity column- LEARNER ACTIVITY Q1.2 and/ or:	5min	papers (2008 – 2011)
Baseline assessment tasks	Select appropriate task from	Baseline- 10	5. GDESSIP Grade 10-12
Many learners battle with basic calculation skills and using a calculator	resources in the resources column.	min	Learner Notes and Typical
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Homework:	Performance	examination questions
from resources in the resources column.	Refer to teacher activity column-	task- 20 min	6. GDE Prelim question
LESSON PREPARATION	Select appropriate task from	Home-work-	papers (2009 – 2011)
	resources in the resources column	25 min	7. DoENSC exemplar
Models			avestion papers
make and use the z-aimensional scale cut-outs/pictures of appropriate views of 3-dimensional models of packaging containers in order to:			8. GDE Data Bank Math Lit Questions and answers Textbooks

Investigate the best packaging shape to use for packaging a particular product (e.g. <i>Should balls be packaged in a cylindrical or rectangular container?</i>). Investigate the best packaging shape to use for fragile and irregular-shaped objects (e.g. <i>a television set</i>), while trying to minimise wasted space and cost. Investigate the amount of material used to make a box. Investigate the number of furniture items that can fit in a venue, while considering the space needed for tables, chairs and walking around. Estimate quantities of materials needed (e.g. <i>paint; tiles</i>) using perimeter, area and volume calculations.	Street maps, provincial and national road maps, and maps showing railway routes; timetables, fare tables and distance charts; appropriate floor plans and elevation plans; cardboard for making models
Make and use the 2-dimensional scale cut-outs/pictures of appropriate views of buildings in order to :	
Investigate possible ways to stack/arrange boxes in a storeroom in order to minimise wasted space. Critique aspects of the layout and/or design of a structure and make suggestions for alterations. Investigate the placement of cupboards and other furniture in a room. Estimate quantities of materials needed (e.g. <i>paint; tiles</i>) using perimeter, area and volume calculations+. Investigate the number of furniture items that can fit in a venue, while considering the space needed for tables, chairs and walking around.	
Make and use the following in order to : 3-dimensional scale models of buildings (e.g. <i>classroom; storeroom; school hall; house</i>) from given or constructed 2-dimensional floor and elevation plans; The primary focus is on using scale models and pictures to solve problems. The models and/or pictures must be drawn to scale. Additional contexts and/or resources involving 3-D models and 2-D pictures in which the concepts described above can be explored include the following:	
• 2-D pictures: office space containing office cubicles; matric dance and/or birthday party and/or wedding venue; crop estimates for a piece of land; possible seating arrangements at a local sports ground.	
 LEARNER ACTIVITY 1. In a scale drawing of a square advertisement poster, the length of one of the sides is 8cm. The logo on the scale drawing of the advertisement is 3cm long and 1cm wide. The side length of the actual advertisement is to be 4m. a) What is the scale of the scale drawing? Give your answer in the form 1:n (1:50) b) What is the length and width of the logo on the real advertisement? (150:50) 2. On cardboard, using the scale 5cm reorsents2m, draw scale drawings of the floor plans of the following furniture: a. A bed 1m by 2m b. A wardrobe 1,5m by 0,5m 	

с.	A chest of drawers 70cm by 40cm		
d.	A desk 70cm by 120cm		
3.	Cut out the floor plans of the furniture drawn and arrange them in a sensible way		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATICAL LI	TERACY	WEEK	5	TOPIC	MODELS (Consolidation) LP18: TIME: 60 min	
LESSON SUMMARY FOR: DATE STARTED:						DATE COMPLETE	D:		
LESSON OBJE	CTIVES	The Learn Measure t Build a ma Use a give Build a ma the mode the mode	The Learners should be able to: Measure the dimensions of a structure for which a model or 2-D picture will be constructed. Build a model using a given table of dimensions or a given cut-out. Use a given scale to determine the dimensions in which to build a model or draw a 2-D picture, and complete the project. Build a model and use the model in conjunction with other content, skills or applications to solve a problem (e.g. build a model of a container and use the model to investigate different types of packaging arrangements; or build a model of a container and determine the surface area and volume of the model to investigate the amount of storage space available in the container).						
		Decide or project. Construct packagin Analyse a	Decide on an appropriate scale in which to build a model or draw a 2-D picture, use the scale to determine dimensions, and the complete the project. Construct and compare two models in terms of storage space and materials used and make a decision about which model will the better choice for packaging an item. Analyse a model and critique the layout of the structure shown in the model.						

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to leacher activity.	Pre- knowledge –	4. NSC National examination
Measure the dimensions of a structure for which a model or 2-D picture will be	Performance Task:	5min	question papers (2008 – 2011)
Build a model using a given table of dimensions or a given cut-out.	Refer to teacher activity column–	Baseline- 10 min	5. GDE SSIP Grade 10-12 Learner
Use a given scale to determine the dimensions in which to build a model or draw a	Building a model of a school hall	Performance task-	Notes and Typical examination
		20 min	questions
Baseline assessment tasks	Homework:	Home-work- 25 min	6. GDE Prelim question papers
Many learners battle with basic calculation skills and using a calculator	Reter to teacher activity column–		(2009 – 2011)
Therefore ensure that learners do the calculation tasks first. Select appropriate	Building a model of a school hall		7. DoE NSC exemplar question
calculation tasks from resources in the resources column.			papers

LESSON PREPARATION	8. GDE Data Bank Math Lit
	Questions and answers
	Textbooks
Models- Revision	Street maps, provincial and
Investigate packaging arrangements using <u>actual</u> cans and a range of <u>actual</u>	
boxes.	nalional roda maps, and maps
In order to	showing railway routes;
Determine the most appropriate way to package caps and/or boyes for optimal	timetables, fare tables and
become the most appropriate way to package cars analytic backs for opinital	distance charts; appropriate
usage of space.	floor plans and elevation plans;
Determine the most cost-effective way to package a number of cans ana/or	cardboard for making models
boxes.	9
Make and use the following in order to: 3-dimensional scale models of packaging	
containers (e.g. <i>packaging containers for balls, biscuits, etc.</i>); 2-dimensional scale	
cut-outs/pictures of appropriate views of 3-dimensional models of packaging	
containers	
Investigate the best packaging shape to use for packaging a particular product	
Investigate the best packaged in a guild stable to use to packaging a patient product	
(e.g. should balls be packaged in a cylindrical of rectangular container).	
Investigate the best packaging shape to use for tragile and irregular-shaped	
objects (e.g. <i>a television set</i>), while trying to minimise wasted space and cost.	
Investigate the amount of material used to make a box.	
Investigate the number of furniture items that can fit in a venue, while considering	
the space needed for tables, chairs and walking around.	
Estimate augntities of materials needed (e.g. <i>paint: tiles</i>) using perimeter, area and	
volume colculations	
Make and use the following in order to : 3-dimensional scale models of buildings	
La a classica de la contra constructed 2	
(e.g. classiooni, stolerooni, school hall, house) from given of constructed z-	
almensional floor and elevation plans; 2-almensional scale cut-outs/pictures of	
appropriate views of buildings.	
Investigate possible ways to stack/arrange boxes in a storeroom in order to	
minimise wasted space.	
Critique aspects of the layout and/or design of a structure and make suggestions	
for alterations.	
Investigate the placement of cupboards and other furniture in a room.	
Estimate augntities of materials needed (e.g. <i>paint: tiles</i>) using perimeter, area and	
volume colculations+	
Investigate the number of furniture items that can fit in a vonue, while considering	
the area preded for tables, obsize and walking ground	
The space needed for tables, chairs and walking around.	
The primary locus is on using scale models and pictures to solve problems.	
The models and/or pictures must be drawn to scale.	
Additional contexts and/or resources involving 3-D models and 2-D pictures in	
which the concepts described above can be explored include the following:	

• packaging containers: fruit juice containers; chocolate boxes; cool drink cans; tinned food; tennis ball containers; golf ball containers; boxes used for packaging fruit juice containers and/or cool drink cans; boxes used for packaging floor tiles.		
 3-D models of buildings: school tuck shop; spaza shop and/or local café/supermarket; sports club change room. 		
• 2-D pictures: office space containing office cubicles; matric dance and/or birthday party and/or wedding venue; crop estimates for a piece of land; possible seating arrangements at a local sports ground.		
Models		
Level 1		
Measure the dimensions of a structure for which a model or 2-D picture will be constructed.		
Level 2 Build a model using a given table of dimensions or a given net/cut-out.		
Level 3 Use a given scale to determine the dimensions in which to build a model or draw a 2-D picture, and complete the project. Build a model and use the model in conjunction with other content, skills or applications to solve a problem (e.g. build a model of a container and use the model to investigate different types of packaging arrangements; or build a model of a container and determine the surface area and volume of the model to investigate the amount of storage space available in the container).		
Level 4 Decide on an appropriate scale in which to build a model or draw a 2-D picture, use the scale to determine dimensions, and the complete the project. Construct and compare two models in terms of storage space and materials used and make a decision about which model will the better choice for packaging an item. Analyse a model and critique the layout of the structure shown in the model.		
<u>Assignment</u> : <i>Building a model of a school hall</i> Build a model of a school hall to investigate the best way to arrange furniture (tables, chairs, dance floor, etc.) for a school function (e.g. matric dance).		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

	GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	5	TOPIC	DEVELOPING AND COLLECTING Data (Developing questions) LP19: TIME: 60 min
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LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:					
	The Learners should be able Developing questions and c Read information directly fro conducted).Complete a giv	e Learners should be able to: eveloping questions and collecting data ead information directly from a given questionnaire/survey (e.g. the name of the organisation for which the questionnaire is being						
LESSON OBJECTIVES	Conduct a given Question/ survey with a group of people.							
	Critique the questions/layout of a questionnaire/survey.							
	Make a deduction about whether collected is biased or valid based on the structure of instrument used to collect the data and the way in which the data was collected.							

re-knowledge assessment activity:		Recommended texts
efer to Teacher activity.		and/or resources: Textbooks
aseline Assessment :		1. Textbook- Spot On
efer to Teacher activity.	Pre- knowledae –	2. Worksheets
erformance Task:	5min	3. Calculator
efer to Learner Activity Annexure – 1-3 and/ or: Select appropriate	Baseline- 10	4. NSC National
olumn	min	examination question
	Performance	papers (2008 – 2011)
omework: efer to Learner Activity Annexure –	task- 20 min	5. GDE SSIP Grade 10-12
4 and/ or: Select appropriate task	Home-work-	Learner Notes and Typical
om resources in the resources	25 min	examination questions
olumn		6. GDE Prelim question
		papers (2009 – 2011)
ef ef ef ef ef of of of of of of of	 -knowledge assessment activity: er to Teacher activity. eline Assessment : er to Teacher activity. formance Task: er to Learner Activity Annexure – -3 and/ or: Select appropriate k from resources in the resources umn. mework: fer to Learner Activity Annexure – and/ or: Select appropriate task m resources in the resources umn 	-knowledge assessment activity:er to Teacher activity.:eline Assessment :er to Teacher activity.formance Task:er to Learner Activity Annexure3 and/ or: Select appropriatek from resources in the resourcesumn.mework:fer to Learner Activity Annexure -and/ or: Select appropriateand/ or: Select appropriate taskm resources in the resourcesumnHome-work-25 min

Every stage in the process is dependent on the stage that precedes it and directly impacts on	7. DoE NSC exemplar
The stage that follows it. As such, if the data that is collected is biased, then every following stage will be flawed:	question papers
or if the data is summarised using an inappropriate average, then the analysis of the data will	8. GDE Data Bank Math Lit
be incorrect.	Questions and answers
It is important that learners come to understand the interconnectedness of the statistical	Sources of national/global
process and that these processes are taught and assessed as related stages.	statistics (e.g. teenage
	behaviour \rightarrow Second
Developing questions	National Youth Risk
	Behaviour Survey;
Develop a question or set of questions that requires the collection of multiple sets of data.	population statistics; motor
	accident statistics;
Recognise that the way in which questions are phrased can impact on the data collected and,	education statistics; health
nence, on the tinaings of the investigation in order to investigate problems relating to national	statistics)
ana giodai issues.	

etlection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

LEARNER ACTIVITY ANNEXURE

1.Every statistical process is made up of at least six interconnected stages. Name the stages. posing a question; collecting data; classifying and organising data; summarising data; representing data; and interpreting/analysing data.

2. When developing questions what must be noted?

(Questions must be short, simple and easy to understand; Answers must be one word or a chose between two or mor5e possible answers; Tick boxes must be provided where there is a choice of answers; Do not ask sensitive information; Ony ask relavent questions; Do not ask vague questions; Do not ask negative questions.)

3.Study the questions:

- a. How old are you? Young, middle aged or old?
- b. Do you not give money to charity? Yes or no?
- c. If you were a teacher, what would you have taught the children in Grade 10 and 11 during the first term, that they would find useful after leaving school and studying at a college or doing some other job, instead of teaching them Mathematical Literacy or Life Orientation?
- i. Explain what is wrong with each question.
- ii. Improve the way each question is asked.

(answers: a. Can be interpreted differently by different individuals. Provide specific age groups; b. Negative question. Remove 'not' from the question; c. Sentence too long and difficult to follow. Shorten or create more shorter questions with tick boxes or one word answers.)

- 4. Show how the below questionnaire about magazines can be improved:
- a. Do you read a lot of magazines? Yes or No
- b. How much time do you spend reading magazines per week? 0-1 hour or 1-2 hours
- c. What do you read?
- d. What do you do with your old magazines?
- e. Do you have a guest room in your house?

Answers:

- a. The words a lot will have different meanings to different people. Rather ask the following: how many different magazines do you usually read during the week? None, 1, 2, or 3 or more.
- b. Some people may not be able to choose one of the two. Add more options: less than 1 hour; from 1-2 hours; from 2-3 hours; from 3-4 hours; from 4-5 hours; more than 5 hours.
- c. This question is too vague. Rather ask: which of the following to you read: Family Fun; All sorts Sports; Popular Places; Your Garden; Meals in minutes; Pets and Vets.
- d. This question is clear, but giving options makes things easier: keep it; give it away; throw it away; other.
- e. This question has nothing to do with the other questions, so leave it out.

GRADE 12	SUE	BJECT	MATHEMATIC	AL LITERACY	WEEK	5	TOPIC	DEVELOPING AND COLLECTING DATA(Observation) LP20: TIME: 60 min
LESSON SUMMARY FO	OR: DAT	E STARTED:				DATE CO	MPLETED:	
LESSON OBJECTIVES		The Learne Read inforr conducted Conduct a Decide on Critique the Make a de data was c	rs should be able nation directly fro d).Complete a giv given Question/ appropriate que e questions/layou duction about w collected.	to: om a given ques ven questionnair survey with a gra stions to include t of a questionna hether collected	tionnaire/surve e. oup of people. on a questionr aire/survey. d is biased or vo	y (e.g. the no naire/survey, ulid based or	ame of the organi construct and the a the structure of ir	sation for which the questionnaire is being en conduct the questionnaire/survey. Instrument used to collect the data and the way in which the

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TENENTIAL FORMATION TENENTIAL FORMATION Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis INTRODUCTION Pre-knowledge assessment Every statistical process is made up of at least six interconnected stages. Discuss Developing questions. Baseline assessment tasks Many learners battle with basic calculation skills and using a calculator Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks from resources in the resources column. LESSON PREPARATION Collecting data	Pre-knowledge assessment activity: Refer to Teacher activity. Baseline Assessment : Refer to Teacher activity. Performance Task: Refer to Learner Activity Annexure – Q1-4 and/ or: Select appropriate task from resources in the resources column. Homework: Refer to Learner Activity Annexure – Q5-6 and/ or: Select appropriate task from resources in the resources column.	Pre- knowledge – 5min Baseline- 10 min Performance task- 20 min Home-work- 25 min	Recommended texts and/or resources: Textbooks1. Textbook- Spot On2. Worksheets3. Calculator4. NSC National examination question papers (2008 – 2011)5. GDE SSIP Grade 10-12 Learner Notes and Typical examination questions6. GDE Prelim question papers (2009 – 2011)7. DOE NSC exemplar question
			papers
Develop and use an observation instrument for collecting multiple sets of data,	8. GDE Data Bank Math Lit		
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with an awareness of the following: the situations for which the different types of	Questions and answers Sources of		
data collection instruments are most appropriate and the advantages and	national/global statistics (e.g.		
disadvantages of each type; the difference between a "population" and a	teenage behaviour \rightarrow Second		
"sample"; how to select an appropriate sample from a population; the impact that	National Youth Risk Behaviour		
the choice of sample will have on the reliability of the data collected in order to	Survey; population statistics;		
collect data on problems being investigated relating to national and global issues.	motor accident statistics;		
	education statistics; health		
	statistics)		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

LEARNER ACTIVITY ANNEXURE

1. Explain the term Observation in Data collection.

An experiment is carried out to obtain data by means of counting or measuring .

- 2. State the information which can be gathered by means of observation.
 - a. Who is the class's favourite teacher?
 - b. Information regarding householders' electricity consumption, water consumption and the number and ages of people in the household.
 - c. Do dogs with longer legs run faster? (Observation. Dogs' legs will be measured and they will be timed to see how fast they run.)
- 3. State the information which can be gathered by means of observation.
 - a. How many vehicles use a certain road between 16:00 and 18:00 on weekdays? (observation)
 - b. What are the water consumption habits of a typical Grade 10 learner?
 - c. Will you use the Gautrain on a regular basis to work?
- 4. What is the difference between a "population" and a "sample". (A population is all the possible individuals or items from which data can be obtained. A sample is a relatively small number of individuals or items selected to represent the whole population.)
- 5. You have to determine the percentage of South Africans who has excess to clean, running water. Will you use a sample or the whole population? (A well chosen sample).
- 6. When is a sample not biased but fair? (Sample must be well defined; items must be selected at random; differences in population must be reflected in the same ratio in the sample; sample must be large enough to get reliable conclusions.)

GRADE	12	SU	JBJECT MATHEMATIC		AL LITERACY	WEEK	5	TOPIC	DEVELOPING AND COLLECTING DATA (Interview) LP21: TIME: 60 min
LESSON SUMN	/IARY FO	DR: DAT	e started:				DATE COMPLETE	D:	
LESSON OBJE	CTIVES		The Learner Read infor conducte Conduct of Decide or Critique the Make a de data was	ers should be able mation directly fro d).Complete a giv a given Question/ a appropriate que e questions/layou eduction about w collected.	to: om a given ques ven questionnair survey with a gr stions to include it of a questionn hether collected	stionnaire/surve re. oup of people. on a question aire/survey. d is biased or vo	y (e.g. the name of naire/survey, constru alid based on the str	the organisa uct and then ucture of inst	tion for which the questionnaire is being conduct the questionnaire/survey. rument used to collect the data and the way in which the

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts and/or
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		Textbooks
INTRODUCTION	Baseline Assessment :		1. Textbook- Spot On
Pre-knowledge assessment	Refer to leacher activity.	Pre- knowledge -	2. Worksheets
Every statistical process is made up of at least six interconnected stages. Discuss	Performance Task:	5min	3. Calculator
Observation technique for collecting data.	Refer to Learner Activity Annexure – Q1-3 and/ or: Select appropriate	Baseline- 10 min	4. NSC National examination
Baseline assessment tasks	task from resources in the resources		question papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	column.	20 min	5. GDE SSIP Grade 10-12 Learner
Therefore ensure that learners do the calculation tasks first. Select appropriate	Homework:		Notes and Typical examination
calculation tasks from resources in the resources column.	Reter to Learner Activity Annexure – Q4 and/ or: Select appropriate task	Home-work- 25	questions
LESSON PREPARATION	from resources in the resources	min	6. GDE Prelim question papers
Collecting data	column		(2009 – 2011)
			7. DoE NSC exemplar question
			papers

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Develop and use an interview instrument for collecting multiple sets of data, with an	8. GDE Data Bank Math Lit
awareness of the following: the situations for which the different types of data	Questions and answers Sources
collection instruments are most appropriate and the advantages and	of national/global statistics (e.g
disadvantages of each type; the difference between a "population" and a	teenage behaviour \rightarrow Second
"sample"; how to select an appropriate sample from a population; the impact that	National Youth Risk Behaviour
the choice of sample will have on the reliability of the data collected in order to	<i>Survey</i> ; population statistics;
collect data on problems being investigated relating to national and global issues.	motor accident statistics;
	education statistics; health
	statistics)

ction/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

LEARNER ACTIVITY ANNEXURE

- 1. For each of the questions, design tick boxes to collect the answers:
- A. What is your home language?
- B. What do you think the minister of education should do to improve discipline in school?
- C. What measures are taken by your family to save water?
- D. What is your opinion about human rights?
- 2. Explain the term Interview in Data collection. (people are asked a few questions orally)
- 3. Say in each case whether information can be gathered by means of an interview.
- a. Who is the class's favourite teacher? (interview)
- b. Information regarding householders' electricity consumption, water consumption and the number and ages of people in the household.
- c. Do dogs with longer legs run faster?
- 4. Say in each case whether information can be gathered by means of an interview.
- a. How many vehicles use a certain road between 16:00 and 18:00 on weekdays?
- b. What are the water consumption habits of a typical Grade 10 learner?
- c. Will you use the Gautrain on a regular basis to work? (interview)

GRADE	12	SUBJECT	MATHEMATIC	AL LITERACY	WEEK	6	TOPIC	DEVELOPING AND COLLECTING DATA (Survey) LP22: TIME: 60 min
LESSON SUMN	MARY FC	DR: DATE STARTED:				DATE COMPLETED):	

	The Learners should be able to:
	Read information directly from a given questionnaire/survey (e.g. the name of the organisation for which the questionnaire is being conducted).Complete a given questionnaire.
	Conduct a given Question/ survey with a group of people.
LESSON OBJECTIVES	Decide on appropriate questions to include on a questionnaire/survey, construct and then conduct the questionnaire/survey.
	Critique the questions/layout of a questionnaire/survey.
	Make a deduction about whether collected is biased or valid based on the structure of instrument used to collect the data and the way in which the data was collected.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		and/or resources: Textbooks
INTRODUCTION	Baseline Assessment :		1. Textbook- Spot On
Pre-knowledge assessment	Reter to Teacher activity.	Pre-	2. Worksheets
Every statistical process is made up of at least six interconnected stages. Discuss	Performance Task:	knowledge -	3. Calculator
Baseline assessment tasks	Refer to Learner Activity Annexure –	5min	4. NSC National
Many learners battle with basic calculation skills and using a calculator	task from resources in the resources	Baseline- 10	examination question
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	column.	min	papers (2008 – 2011)
from resources in the resources column.	Homework:	Performance	5. GDE SSIP Grade 10-12
LESSON PREPARATION	Refer to Learner Activity Annexure –	task- 20 min	Learner Notes and Typical
Collecting data	task from resources in the resources	Home-work-	examination questions
Develop and use a questionnaire or survey appropriate instrument for collecting multiple sets of data with an awareness of the followina: the situations for which the different types of data	column	25 min	6. GDE Prelim question
collection instruments are most appropriate and the advantages and disadvantages of each			papers (2009 – 2011)
type; the difference between a "population" and a "sample"; how to select an appropriate sample from a population: the impact that the choice of sample will have on the reliability of			7. DoE NSC exemplar
the data collected in order to collect data on problems being investigated relating to national and global issues.			question papers

	8. GDE Data Bank Math Lit
	Questions and answers
	Sources of national/global
	statistics (e.g. teenage
	behaviour \rightarrow Second
	National Youth Risk
	Behaviour Survey;
	population statistics; motor
	accident statistics;
	education statistics; health
	statistics)

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

LEARNER ACTIVITY

- 1. Explain the term Questionnaire in collecting data. (people complete a list of questions in writing, more questions can be asked in this way).
- 2. When designing a questionnaire what must be noted?

(Questions must be short, simple and easy to understand; Answers must be one word or a chose between two or mor5e possible answers; Tick boxes must be provided where there is a choice of answers; Do not ask sensitive information; Ony ask relavent questions; Do not ask vague questions; Do not ask negative questions.)

- 3. Design a questionnaire to find out information about the television viewing habits of people.
- 4. Say in each case whether information can be gathered by means of a written questionnaire:
- a. Who is the class's favourite teacher?
- b. Information regarding householders' electricity consumption, water consumption and the number and ages of people in the household. (questionnaire)
- c. Do dogs with longer legs run faster?
- 5. Say in each case whether information can be gathered by means a written questionnaire:
- a. How many vehicles use a certain road between 16:00 and 18:00 on weekdays?
- b. What are the water consumption habits of a typical Grade 10 learner? (questionnaire)
- c. Explain the term Observation in Data collection.
- d. Will you use the Gautrain on a regular basis to work?

CDADE	10				L	TODIC	DEVELOPING AND COLLECTING DATA(Consolidation) LP23:
GRADE	12	SUBJECT	MATHEMATICAL LITERACY	VVEEK	o	TOPIC	TIME:60 min

LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:	
LESSON OBJECTIVES	The Learners should be able Read information directly fro conducted).Complete a giv Conduct a given Question/ Decide on appropriate que Critique the questions/layou Make a deduction about w	to: om a given questionnaire/survey (ven questionnaire. survey with a group of people. stions to include on a questionnai t of a questionnaire/survey. hether collected is biased or valio	(e.g. the name of the organisat ire/survey, construct and then a d based on the structure of instr	ion for which the questionnaire is being conduct the questionnaire/survey. rument used to collect the data and the way in which the

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts and/or
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		resources: Textbooks
INTRODUCTION	Baseline Assessment :		1. Textbook
Pre-knowledge assessment	Refer to Teacher activity.		2. Worksheets
Every statistical process is made up of at least six interconnected stages. Discuss	Performance Task:	Pre- knowledge –5min	3. Calculator
	Refer to Learner Activity Annexure -	Deverting 10 main	4. NSC National examination
Baseline assessment tasks		Baseline- 10 min	question papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	Homework: Refer to Learner Activity Annexure -	Perform-ance task- 20	5. GDE SSIP Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate	Assignment	min	Learner Notes and Typical
calculation tasks from resources in the resources column.		Home-work- 25 min	examination questions
			6. GDE Prelim question papers
LESSON PREPARATION			(2009 – 2011)
Revision			7. DoE NSC exemplar question
			papers

Every statistical process is made up of at least six interconnected stages: posing a question; collecting data; classifying and organising data; summarising data; representing data; and interpreting/analysing data. Every stage in the process is dependent on the stage that precedes it and directly impacts on the stage that follows it. As such, if the data that is collected is biased, then every following stage will be flawed; or if the data is summarised using an inappropriate average, then the analysis of the data will be incorrect. It is important that learners come to understand the interconnectedness of the statistical process and that these processes are taught and assessed as related stages. Developing questions		8. GDE Data Bank Math Lit Questions and answers Sources of national/global statistics (e.g. teenage behaviour → Second National Youth Risk Behaviour Survey; population statistics; motor accident statistics; education statistics; health statistics)
Develop a question or set of questions that requires the collection of multiple sets of data.		
Recognise that the way in which questions are phrased can impact on the data collected and, hence, on the findings of the investigation in order to investigate problems relating to national and global issues .		
Collecting data		
Develop and use an appropriate instrument for collecting multiple sets of data, including: observation; interview; questionnaire or survey; with an awareness of the following: the situations for which the different types of data collection instruments are most appropriate and the advantages and disadvantages of each type; the difference between a "population" and a "sample"; how to select an appropriate sample from a population; the impact that the choice of sample will have on the reliability of the data collected in order to collect data on problems being investigated relating to national and global issues. Developing questions and collecting data		
Assessment		
Level1		
Read information directly from a given questionnaire/survey (e.g. the name of the organisation for which the questionnaire is being conducted). Complete a given questionnaire.		
Level 2 Conduct a given Question/ survey with a group of people.		
Level 3		
Decide on appropriate questions to include on a questionnaire/survey, construct and then conduct the questionnaire/survey.		

Level 4		
Critique the questions/layout of a questionnaire/survey.		
Make a deduction about whether collected is biased or valid based on the		
structure of instrument used to collect the data and the way in which the data		
was collected.		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

LEARNER ACTIVITY ANNEXURE

Possible assessment (incorporating all the stages of the statistical cycle):

Assignment: Risky behaviour

Collect, organise, summarise and represent data on drug and alcohol usage drawn from learners in grade 12 and from different gender.

Explain the term Observation in Data collection.

- 1. Say in each case whether information can be gathered by means of observation, an interview or a written questionnaire:
- a. Who is the class's favourite teacher?
- b. Information regarding householders' electricity consumption, water consumption and the number and ages of people in the household.
- c. Do dogs with longer legs run faster?
- 2. Say in each case whether information can be gathered by means of observation, an interview or a written questionnaire:
- a. How many vehicles use a certain road between 16:00 and 18:00 on weekdays? (observation)
- b. What are the water consumption habits of a typical Grade 10 learner? (questionnaire)
- c. Will you use the Gautrain on a regular basis to work? (interview)

Answers for question 1:

- a. Interview. The learners will be asked who their favourite teacher is and can vote by putting up their hands.
- b. Questionnaire
- c. Observation. Dogs' legs will be measured and they will be timed to see how fast they run.

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE	12	SUBJECT	MATHEMATIC	ATHEMATICAL LITERACY		6	TOPIC	CLASSIFY ORGANISE DATA(Classify)LP24 TIME: 60 min
LESSON SUMMARY FOR: DATE STARTED:					DATE COMPLETED:			
LESSON OBJE	CTIVES	The Learne Sort data fr Count the Explain the Explain the Sort data c	rs should be able rom smallest to bi- number of values difference betwe difference betwe iccording to two	to: ggest. in a data set. een categoricc een discrete & categories.	ıl data & numer continuous date	rical data. a.		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts and/or
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		resources: 1. Textbook- Spot On
INTRODUCTION	Baseline Assessment :		2. Worksheets
Pre-knowledge assessment	Refer to leacher activity.	Pro	3. Calculator
Every statistical process is made up of at least six interconnected stages. Discuss collecting data.	Performance Task:	knowledge –	4. NSC National examination
	Q1-3 and/ or: Select appropriate	5min	question papers (2008 –
Baseline assessment tasks	task from resources in the resources	Baseline- 10	2011)
Many learners battle with basic calculation skills and using a calculator		min	5. GDE SSIP Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation	Homework:	Performance	Learner Notes and Typical
tasks from resources in the resources column.	Q4 and/ or: Select appropriate task	task- 20 min	examination questions
LESSON PREPARATION	from resources in the resources	Home-work-	6. GDE Prelim question
Classifying and organising data	Column	25 min	papers (2009 – 2011)
Classifying and organising data			7. DoE NSC exemplar
Classify collected data as: categorical data (e.g. <i>male/female; type of car</i>); numerical data, further classified as discrete data (e.g. <i>number of people; number of cars</i>) and continuous data (e.g. <i>weights; rainfall</i>).			question papers

Sort collected numerical data according to more than two categories.(e.g. <i>Sort data according to gender, height and class.</i>)	8. GDE Questi	E Data Bank Math Lit ions and answers
Group collected data using intervals (where appropriate) (e.g. <i>It is often appropriate to group test scores in the mark intervals "0–29"; "30–39"; etc.</i>).	Source statistic behav Nation Behav popula accide educa statistic	so of national/global cs (e.g. teenage riour → Second nal Youth Risk riour Survey; ation statistics; motor ent statistics; health cs)
	Nation Behav populo accide educa statistic	nal Youth Risk <i>iour Survey;</i> ation statistics; motor ent statistics; ation statistics; health cs)

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

- 1. Data can be categorical or numerical. Explain these concepts. (Categorical data describes a property, for example, gender, colour or flavour. Numerical data consists of numbers.)
- 2. Name the two kind of numerical data and give examples of each. (Discrete data: there are only a finite number of possible values within a certain range, for example, the number of learners in a classroom. Continuous data: an infinite number of possible values, within a certain range, e.g. measurements of temperature.)
- 3. Are the following data categorical or numerical? If it is numerical, state whether it is discrete or continuous:
- a. Television programs each learner in Grade 10 likes most. (categorical)
- b. Distance learners have to travel to school. (numerical, continuous)
- c. Mass of each of 100 dogs. (numerical, continuous)
- d. Colours of the cars in a parkade. (categorical)
- e. Number of learners in each school in South Africa. (numerical, discrete)
- f. Temperature at 07:00 recorded at 80 different weather stations. (numerical, continuous)
- g. Mass of each of 500 eggs. (numerical, continuous)
- h. Sizes of the dresses sold by a shop during one year. (numerical, discrete)
- 4. Sort collected numerical data according to more than two categories.(e.g. Sort data according to gender, height and class.)

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	6	TOPIC	CLASSIFY ORGANISE DATA(organise)LP25 TIME: 60 min	
							-	
LESSON SUMM	ARY FOR	: DATE STARTED:			DATE COMPLETE	D:		
		The Learne	ers should be able to:					
		Sort data f	rom smallest to biggest.					
		Count the	Count the number of values in a data set.					
		Explain the	e difference between catego	rical data & numeri	cal data.			
		Explain the	Explain the difference between discrete & continuous data.					
LESSON OBJE	CTIVES	Sort data d	Sort data according to two categories.					
		Complete	a given frequency table.					
		Calculate percentage values to represent the relative size of different categories of data.						
		When give	en a raw set of data, sort the c	lata, decide on ap	oropriate intervals (if necessary),	and construct a frequency table to organise the data.	

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.	Pre-	and/or resources:
INTRODUCTION	Baseline Assessment :	knowledge –	1. Textbook- spot On
Pre-knowledge assessment	Refer to Teacher activity.	5min	2. Worksheets
Every statistical process is made up of at least six interconnected stages. Discuss	Performance Task	Baseline- 10	3. Calculator
Classifying data.	Refer to Learner Activity Annexure – Q1-4	min	4. NSC National
	and/ or: Select appropriate task from	Performance	examination question
Baseline assessment tasks	resources in the resources column.	task- 20 min	papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator Therefore ensure that learners do the calculation tasks first. Select appropriate calculation	Homework: Refer to Learner Activity Annexure – Q5	Home-work-	5. GDE SSIP Grade 10-12
tasks from resources in the resources column.	and/ or: Select appropriate task from	25 min	Learner Notes and Typical
	resources in the resources column		examination questions

Ι Εςςονι αρεραβατιονι	6 GDE Prelim question
LISSONTKELAKATION	0. ODE FICIIII QUESIIOII
Classifying and organising data	papers (2009 – 2011)
Organise collected data using: tallies; frequency tables. Recognise that the way in which data is classified, sorted and/or grouped will affect how data is organised, summarised and represented In order to: transform the data into a form that can be analysed, or into a form that can be more easily summarised and/or represented, to find answers to the question(s) posed on issues relating to national and global issues.	 7. DoE NSC exemplar question papers 8. GDE Data Bank Math Lit Questions and answers Textbooks Sources of national/global statistics (e.g. teenage behaviour → Second National Youth Risk Behaviour Survey; population statistics; motor accident statistics; health statistics
	signistics

Reflection/Notes:		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

- 1. Explain the concepts: tally and frequency table, frequency, grouped data. (A tally and frequency table shows the number of times each item occurs. The frequency of a specific piece of data is the number of times that data occurs. Grouped data are data divided into groups to make it easier to handle, both discrete and continuous data can be grouped, a group is also called a class).
- 2. When is a stem and leaf table useful? (it is useful to group and order the data, a part of the value of each piece of data is used to define the group or class and the remainder of the values listed next to it.)
- 3. The list gives the number of loaves of bread bought in one week by each of 20 households.

8	6	4	9	5	3	4	8	4	2
2	2	5	5	4	5	2	7	1	1

a. Draw up a tally and frequency table for the number of loaves.

No. of loaves	Tally	Frequency
1	11	2
2		4
3	1	1
4	1111	4
5	1111	4
6	1	1
7	1	1
8	11	2

_	_	
9		1
5		

4. The list gives the number of loaves of bread bought in one week by each of 20 households.

8	6	4	9	5	3	4	8	4	2
2	2	5	5	4	5	2	7	1	1

a. Draw up a frequency table grouping the data into five groups.

No of loaves	Tally	Frequency
1-2		6
3-4	-++++-	5
5-6	-++++-	5
7-8	111	3
9-10	1	1

5. Represent the set of data in a stem and leaf table:

2; 4; 13; 15; 18; 21; 25; 26; 29; 29; 32; 37; 39; 39; 39

0	2 4
1	3 5 8
2	15699
3	27999

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	6	TOPIC	CLASSIFY ORGANISE DATA(Frequency tables)LP26 TIME: 60 min
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LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:				
	The Learners should be able	to:					
	Complete a given frequency table.						
	Calculate percentage values to represent the relative size of different categories of data.						
LESSON OBJECTIVES	When given a raw set of data, sort the data, decide on appropriate intervals (if necessary), and construct a frequency table to organise the data.						
	If necessary, use the frequency table to draw an appropriate graph to represent the data.						
	Explain with justification whether data is discrete or continuous.						
	Analyse data organised in to	ables and make deductions abou	ut trends in the data.				

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		and/or resources: 1. Textbook
Pre-knowledge assessment	Baseline Assessment : Refer to Teacher activity.	Pre-	2. Worksheets
Every statistical process is made up of at least six interconnected stages. Discuss organising	Performance Task	5min	3. Calculator
data.	Refer to Learner Activity Annexure –		4. NSC National
	Q1 and/ or: Select appropriate task	Baseline- 10	examination question
Baseline assessment tasks	from resources in the resources		papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	column.	Perform-ance	5 CDE SSIP Grade 10.12
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Homework:	task- 20 min	
from resources in the resources column.	Refer to Learner Activity Annexure –	Home-work-	Learner Notes and Typical
LESSON PREPARATION	Q2 and/ or: Select appropriate task	05 min	examination questions
	column	25 min	6. GDE Prelim question
Sort collected numerical data according to more than two categories.(e.g. Sort data			papers (2009 – 2011)
according to gender, height and class.)			7. DoE NSC exemplar

Group collected data using intervals (where appropriate) (e.g. <i>It is often appropriate to group test scores in the mark intervals "0–29"; "30–39"; etc.</i>).	question papers
Organise collected data using: tallies; frequency tables. Recognise that the way in which data is classified, sorted and/or grouped will affect how data is organised, summarised and represented In order to: transform the data into a form that can be analysed, or into a form that can be more easily summarised and/or represented, to find answers to the question(s) posed on issues relating to national and global issues. Complete a given frequency table.	8. GDE Data Bank Math Lit Questions and answers Textbooks Sources of national/global statistics (e.g. teenage behaviour → Second National Youth Risk Behaviour Survey;
Calculate percentage values to represent the relative size of different categories of data.	population statistics; motor accident statistics;
When given a raw set of data, sort the data, decide on appropriate intervals (if necessary), and construct a frequency table to organise the data.	education statistics; health statistics)
If necessary, use the frequency table to draw an appropriate graph to represent the data.	
Explain with justification whether data is discrete or continuous.	
Analyse data organised in tables and make deductions about trends in the data.	

Reflection/Notes:		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

1. The table below illustrates the monthly bookings of Malong Caravan Park. Draw the bar graph to illustrate the frequency of bookings per month.

Month	No. of sites booked
January	4000
February	2000
March	2500
April	4000
Мау	2500
June	3500
July	4000
August	4000
September	3500
October	4000
November	2500
December	3500



2. The following table illustrates the percentage of users of facebook and twitter for December 2010. Draw the compound bar graph to show the comparison of users of facebook and twitter for December 2010

Users	% Users who update their status daily	% users who log in via mobile devices	% users who log in daily	% users who are located outside the USA
Facebook	12	30	41	70
Twitter	52	37	27	60



GRADE	12	SUBJECT	MATHEMATIC	L LITERACY	WEEK	6	TOPIC	CLASSIFY ORGANISE DATA(consolidation)LP27 TIME: 60 min	
LESSON SUMMARY FOR: DATE STARTED:					DATE COMPLETE	D:			
		The Le	arners should be able	to:					
		Sort do	ata from smallest to big	ggest.					
		Count	the number of values	in a data set.					
	Explain	the difference betwe	e between categorical data & numerical data.						
		Explain	Explain the difference between discrete & continuous data.						
		Sort do	rt data according to two categories.						
LESSON O	DECLIVE	Compl	Complete a given frequency table.						
		Calcul	Calculate percentage values to represent the relative size of different categories of data.						
		When	When given a raw set of data, sort the data, decide on appropriate intervals (if necessary), and construct a frequency table to organise the o						
		If nece	essary, use the frequer	ncy table to draw an appropriate graph to represent the data.					
		Explain	with justification whe	her data is disc	crete or contin	uous.			
		Analys	e data organised in to	bles and make	e deductions a	bout trends in the da	ta.		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:	Pre-	Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.	knowledge –	1. Textbook
	Refer to Teacher activity.	Smin	2. Worksheets
<u>Fre-knowledge assessment</u>	Performance Task	Baseline- 10 min	3. Calculator
	Refer to Learner Activity Annexure -	Porformanco	4. NSC National
Baseline assessment tasks	Assignment.	task- 20 min	examination question
Many learners battle with basic calculation skills and using a calculator	Homework:	Home-work-	papers (2008 – 2011)
from resources in the resources column.	Assignment	25 min	

5. GDE SSIP Grade 10-12
Learner Notes and Typico
examination questions
6. GDE Prelim question
papers (2009 – 2011)
7. DoE NSC exemple
question papers
8. GDE Data Bank Math Li Questions and answers Textbooks Sources of national/global
statistics (e.g. teenage
National Youth Risk Behaviour Survey; population statistics; motor accident statistics; education statistics; health
statistics)

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

Possible assessment (incorporating all the stages of the statistical cycle):

Assignment: Risky behaviour

Collect, organise, summarise and represent data on drug and alcohol usage drawn from learners in different grades and from different gender and racial groups. Analyse the data in relation to the national results presented in the 1st or 2nd *National Youth Risk Behaviour Survey*.

GRADE	12	SUBJECT	MATHEMATICA	L LITERACY	WEEK	7	TOPIC	MEASURING DATA (Summarizing) LP28: TIME: 60 min
LESSON SUMMARY FOR: DATE STARTED:						DATE COMPLETE	D:	
LESSON OBJE	CTIVES	The Learn Identify the Calculate values. Calculate represent Use data Analyse m Interpret t	ers should be able t e maximum and m mean, median, mo the mean, median ation of the data. presented on a gra neasures of central ables and charts sh art.	o: nimum values i ode and range and modal av oh to determin rendency and s owing percent	n a set of data for both sorted erage for a se e the mean, m spread and ma ile/quartile valu	a. d and unsorted data t of data and decid nedian, mode and ra ake deductions abo ues and explain who	a and for data le with reason: ange of a dat out trends in th at those value	a sets containing an even and an odd number of data s which average provides the most accurate ta set. ne data. es represent in relation to the scenario represented in the
		Compare	measures of centro	Il tendency/spr	ead calculate	ed for two sets of dat	ta and use the	ese measures to explain differences between the data sets.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts and/or
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		resources:
INTRODUCTION	Baseline Assessment :		1. Textbook
Pre-knowledge assessment	Refer to Teacher activity.	–5min	2. Worksheets
Every statistical process is made up of at least six interconnected stages. Discuss these	Performance Task:		3. Calculator
stages.	Refer to Learner Activity Annexure -	Baseline- 10 min	4. NSC National examination
Baseline assessment tasks	from resources in the resources	Performance	question papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	column.	task- 20 min	5. GDE SSIP Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate	Homework:	Home-work- 25	Learner Notes and Typical
calculation tasks from resources in the resources column.	Refer to Learner Activity Annexure -	min	examination questions
LESSON PREPARATION	Q5 and/or: Select appropriate task		6. GDE Prelim question papers
	column		(2009 – 2011)
Summarising data			

Summarise multiple sets of collected data using the following measures of central	7. DoE NSC exemplar question
tendency and spread: mean; median; mode; range; with an understanding of the following: the function/purpose of the measures of central tendency and spread; the	papers
measure of central tendency that is being referred to when the term "average" is	8. GDE Data Bank Math Lit
used; the role and impact of outliers on the measures of central tendency and/or	Questions and answers
spread; the strengths and limitations of each type of measure of central tendency and	Textbooks
spread and the situations in which one measure is more or less appropriate than the	Sources of national/global
other measures. (e.g. If there is an outlier in a data set, the mean average may be	statistics (e.g. teenage
skewed by the outlier. As such, it would be advisable to calculate the mean, median	behaviour → <i>Second National</i>
and modal averages, compare these averages, and then decide which average is	Youth Risk Behaviour Survey;
the most representative of the majority of the data values.)	population statistics; motor
	accident statistics; education
Analyse calculated and/or given measures of central tendency and/or spread In	statistics; health statistics)
order to: Recognise trends at different places in the data to facilitate finding answers	
to the questions posed on issues relating to national and global issues .	

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

Learner Activity

- 1. Find the range, median, and mode of the set of data:
- 107; 100; 102; 98; 99; 100; 102; 100
- Range= 9 Mean= 101 Median= 100 Mode= 100
- 2. A garage owner keeps a record of the number of cars he repaired:

6; 6; 5; 3; 2; 6; 8; 5; 4; 3

- a. What is the mean number of the cars he repairs per day? (4.5)
- b. What is the mode? (3)
- 3. Of the three averages: mean, median and mode. Which one is:
- a. The easiest to find? (mode)
- b. Not affected by very large values and very small values? (median)
- c. Affected by every single value of date? (mean)
- 4. John and Steven are comparing their marks. Their marks for the past five tests are:

John	6	8	6	6	9
Steven	3	4	10	8	10

Who has a better set of marks? Explain your answer.

Answer:

	Mean	Median	Mode	Range
John	7	6	6	3
Steven	7	8	10	7

John. His lowest mark is higher than Steven's lowest mark and his marks are more consistent than Steven's.

5. Mrs Long is the high-jump coach at Roseland High School. She records the heights jumped by the five boys in the high-jump team.

Lerato is one of the members of the team. The following are heights, in metres, of the last 12 jumps:

1,70; 1,68; 1,78; 1,90; 1,74; 1,85; 1,81; 1,95; 1,98; 2,00; 2,02; 1,80

Determine the following:

5.1.1 the median height jumped by Lerato during his last 12 jump

Answers

1.1 1,68; 1,70; 1,74; 1,78; 1,80; 1,81; 1,85; 1,90; 1,95; 1,98; 2,00; 2,02 (ordering)

1.1.1 Median = $(1,81 + 1,85) \div 2 = 1,83$

2. Peter and Joseph have an argument about who is better as soccer. The table below contains the number of goals scored by each school during the 1997-2004 seasons.

			Peter's	School			
18	31	11	25	21	24	20	39

			Joseph's	School			
21	24	19	24	20	18	24	39

- a. Arrange the data in ascending order
- b. Which school scored the highest number of goals during a season
- c. Which school scored 25 goals or more the most times over the eight seasons
- d. Calculate the median of the number of goals for Peter's school and Joseph's school

Answers

a. Peter's school: 11 18 20 21 24 25 31 39

Joseph's school: 18 19 20 21 24 24 24 39

- b. The highest number of goals is 39 for both schools.
- c. Peter's school scored 25 or more goals during 3 seasons, and Joseph's school only during 1 season.
- d. Peter's school: $(21+24) \div 2 = 22,5$ goals

Joseph's school: $(21+24) \div 2 = 22,5$ goals

GRADE	12	SUBJECT	MATHEMATICA	AL LITERACY	WEEK	7	TOPIC	MEASURING DATA(Quartiles)LP29: TIME: 60 min
LESSON SUMMARY FOR: DATE STARTED:					DATE COMPLETE	D:		
LESSON OBJE	CTIVES	The Learner Identify the Calculate values. Calculate represente Use data p Analyse m Interpret to table/cha	ers should be able e maximum and m mean, median, m the mean, median ation of the data. oresented on a gro neasures of central ables and charts sh int. <u>measures of centra</u>	to: inimum values i ode and range n and modal av uph to determin tendency and nowing percent <u>al tendency/spi</u>	in a set of data for both sortec verage for a set the mean, m spread and mo ile/quartile valu	I and unsorted data of data and decid edian, mode and ra ake deductions abo ues and explain wha d for two sets of dat	a and for data e with reason ange of a dat ut trends in th at those value ra and use the	a sets containing an even and an odd number of data s which average provides the most accurate a set. e data. s represent in relation to the scenario represented in the ese measures to explain differences between the data sets.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		and/or resources:
INTRODUCTION	Baseline Assessment :	Pre- knowledae –	
Pre-knowledge assessment	Reter to Teacher activity.	5min	2. Worksneets
Every statistical process is made up of at least six interconnected stages. Discuss	Performance Task:	Baseline- 10 min	3. Calculator
medsores of central rendency.	Refer to Learner Activity Annexure –		4. NSC National
Baseline assessment tasks	from resources in the resources	Performance task- 20	examination question
Many learners battle with basic calculation skills and using a calculator	column.		papers (2008 – 2011)
Therefore ensure that learners do the calculation tasks first. Select appropriate	Homework:	Home-work- 25 min	5. GDE SSIP Grade 10-12
calculation tasks from resources in the resources column.	Refer to Learner Activity Annexure -		Learner Notes and Typical
LESSON PREPARATION	Q1.2 and/ or: Select appropriate task from resources in the resources		examination questions

Summarising data	column	6. GDE Prelim question
Summarise multiple sets of collected data using the following measures of central		papers $(2009 - 2011)$
tendency and spread: quartiles; percentiles (<i>interpretation only</i>) with an		
tendency and spread: the measure of central tendency that is being referred to		7. DOE NSC exemplor
when the term "average" is used; the role and impact of outliers on the measures of		question papers
central tendency and/or spread; the strengths and limitations of each type of		8. GDE Data Bank Math Lit
measure of central tendency and spread and the situations in which one measure is		Questions and answers
more or less appropriate than the other measures. (e.g. <i>If there is an outlier in a data</i>		lextbooks Sources of national/global
to calculate the mean, median and modal averages, compare these averages.		statistics (e.g. teenage
and then decide which average is the most representative of the majority of the		behaviour \rightarrow Second
data values.)		National Youth Risk
		Behaviour Survey;
Common contexts involving quartiles and percentiles include: growth charts for babies and children; percentile and quartile categories used in analysing results (e.g.		population statistics; motor
for the matric examination results); a untile categories for schools; test and/or exam		education statistics; health
results for a large group of learners (e.g. for the whole school).		statistics)
* In working with quartiles, learners are expected to: be able to identify the quartile		
auartile values in a set of data; interpret auartile values and make deductions		
regarding the significance of quartile values in terms of trends in the data.		
Represent multiple sets of collected data using: box-and-whisker plots (as graphical		
here and whisker plots. However, they must be able to: locate minimum, maximum		
median and quartile values on the plot; interpret the plot and explain what the		
shape of the plot signifies in terms of the spread of the data values.		
Learners are <u>not</u> expected to: calculate quartile values using formulae; calculate		
interquartile range.		
+ Learners are not expected to perform any calculations involving percentiles.		
Rather, if presented with percentile values in tables or graphs, learners must be able		
to explain what those values say about the data.		
Analyse calculated and/or given measures of central tendency and/or spread in		
order to: Recoanise trends at different places in the data to facilitate finding answers		
to the questions posed on issues relating to national and global issues.		
Work with quartile and percentile values, together with various measuring		
instruments#, in the following contexts: <i>Road to Health</i> chart and other growth charts		
for children; test and exam results in order to:		
Analyse the health status of a child using calculated Body Mass Index values.		
Determine the quantity of paracetamol (a drug found in several medicines,		
including Panado) to be administered to a child.		
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Analyse the performance of a group of learners in a test and/or exam.		

Reflection/Notes:

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

Learner Activity Annexure

1.Mrs Long is the high-jump coach at Roseland High School. She records the heights jumped by the five boys in the high-jump team.

1.1.Lerato is one of the members of the team. The following are heights, in metres, of the last 12 jumps:

1,70; 1,68; 1,78; 1,90; 1,74; 1,85; 1,81; 1,95; 1,98; 2,00; 2,02; 1,80

Determine the following:

- 1.1.1 the median height jumped by Lerato during his last 12 jumps
- 1.1.2 the height that is his lower quartile
- 1.1.3 the height of his upper quartile
- 1.1.4 his interquartile range (IQR), in centimetres, using the formula: interquartile range = upper quartile lower quartile OR IQR = Q3 Q1

1.2 the athletes in the high-jump team were told that if their 75th percentile was at 1,95m or higher, they would qualify to take part in the inter-high competition.

1.2.1 which of the heights jumped by Lerato is at his 75th percentile?

- 1.2.2 The 75th percentiles for the other four members of the team were as follows:
- Charles 1,94 m Lebo 1,80m

Mohamed 1,95m Siyabonga 2,00 m

Which of the five athletes did NOT qualify to take part in the inter-high competition? Give a reason for your answer.

Answers

1.11,68; 1,70; 1,74; 1,78; 1,80; 1,81; 1,85; 1,90; 1,95; 1,98; 2,00; 2,02 (ordering)

1.1.1 Median = $(1,81 + 1,85) \div 2 = 1,83$

- 1.1.2 Lower quartile = $(1,74 + 1,78) \div 2 = 1,76$
- 1.1.3 Upper Quartile = $(1,95 + 1,98) \div 2 = 1,9651$
- 1.1.4 IQR= 1, 965 1,76 = 0,205
- 1.2.1 75^{th} percentile = $Q_3 = 0,025$
- 1.2.2 Charles and Lebo did not qualify. Their 75th percentile is less than 1,95m

GRADE	12	SUBJECT	MATHEMATICA	L LITERACY	WEEK	7	TOPIC	MEASURING DATA(consolidation) LP30: TIME:60 min
LESSON SUMM	IARY FOR	DATE STARTED:				DATE COMPLETE	D:	
LESSON OBJEC	CTIVES	The Learn Identify th Calculate values. Calculate represente Use data Analyse m Interpret t table/cho	ers should be able to e maximum and m mean, median, me the mean, median the mean, median ation of the data. presented on a gra neasures of central ables and charts sh int.	o: nimum values i ode and range and modal av ph to determin rendency and owing percent	n a set of data for both sorted erage for a se e the mean, m spread and ma ile/quartile valu	a. d and unsorted data t of data and decid nedian, mode and ra ake deductions abo ues and explain who	a and for data with reasons ange of a dat but trends in th at those value	a sets containing an even and an odd number of data s which average provides the most accurate a set. he data. he represent in relation to the scenario represented in the

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		and/or resources:
INTRODUCTION	Baseline Assessment :	Pre-	1. Textbook
Pre-knowledge assessment	Refer to Teacher activity.	knowledge – 5min	2. Worksheets
Every statistical process is made up of at least six interconnected stages. Discuss measures of	Performance Task:		3. Calculator
central tendency and spread including quartiles . measures of central tendency	Refer to Learner Activity Annexure –	Baseline- 10 min	4. NSC National
Baseline assessment tasks			examination question
Many learners battle with basic calculation skills and using a calculator	Homework:	task- 20 min	papers (2008 – 2011)
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Q1 (f-k)		5. GDE SSIP Grade 10-12
from resources in the resources column.		Home-work-	Learner Notes and Typical
LESSON PREPARATION		25 min	examination questions
Revision			6. GDE Prelim question
Summarising data			

Summarise multiple sets of collected data using the following measures of central tendency	papers (2009 – 2011)	
and spread: mean; median; mode; range; quartiles; percentiles (<i>interpretation only</i>)	7. DoE NSC exem	plar
with an understanding of the following: the function/purpose of the measures of central		
tendency and spread; the measure of central tendency that is being referred to when the term	question papers	
average is used, the tote and impact of outliers of the measure of central tendency and spread	8. GDE Data Bank Mat	n Lit
and the situations in which one measure is more or less appropriate than the other measures	Questions and answers	
le.g. If there is an outlier in a data set, the mean average may be skewed by the outlier. As	Textbooks	
such, it would be advisable to calculate the mean, median and modal averages, compare	Sources of national/glo	bal
these averages, and then decide which average is the most representative of the majority of	sidistics (e.g. leenage	
the data values.)	National Youth Risk	
	Behaviour Survey.	
Common contexts involving quartiles and percentiles include: growth charts for babies and	population statistics; mo	otor
children; percentile and quartile categories used in analysing results (e.g. for the matric	accident statistics;	
examination results), quimile caregories for schools, rest and/or examines ins for a large group of learners le all for the whole school	education statistics; he	alth
	statistics)	
* In working with quartiles, learners are expected to: be able to identify the quartile values in a		
small set of data; explain the process involved in determining given quartile values in a set of		
data; interpret quartile values and make deductions regarding the significance of quartile		
values in terms of trends in the data.		
range		
+ Learners are not expected to perform any calculations involving percentiles. Rather, if		
presented with percentile values in tables or graphs, learners must be able to explain what		
those values say about the data.		
Analyse calculated and/or given measures of central tendency and/or spread In order to:		
Recognise trends at different places in the data to facilitate finding answers to the questions		
posed on issues relating to national and alobal issues.		
Work with quartile and percentile values, together with various measuring instruments#, in the		
following contexts: Road to Health chart and other growth charts for children; test and exam		
results In order to:		
Analyse the growth pattern of a baby/toddler.		
Analyse the meditin status of a child using calculated Body Mass Index Values.		
to be administered to a child		
Analyse the performance of a group of learners in a test and/or exam.		
Measuring data		
Leven		

Identify the maximum and minimum values in a set of data	
identity the maximum and minimum values in a set of data.	
Level2 Calculate mean, median, mode and range for both sorted and unsorted data and for data sets containing an even and an odd number of data values.	
Level 3 Calculate the mean, median and modal average for a set of data and decide with reasons which average provides the most accurate representation of the data. Use data presented on a graph to determine the mean, median, mode and range of a data set.	
Level 4	
Analyse measures of central tendency and spread and make deductions about trends in the	
data.	
Interpret tables and charts showing percentile/quartile values and explain what those values	
represent in relation to the scenario represented in the table/chart.	
Compare measures of central tendency/spread calculated for two sets of data and use these	
measures to explain differences between the data sets.	

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

Learner Activity Annexure

Possible assessment (incorporating all the stages of the statistical cycle):

1. Peter and Joseph have an argument about who is better as soccer. The table below contains the number of goals scored by each school during the 1997-2004 seasons.

			Peter's	School			
18	31	11	25	21	24	20	39

			Joseph's	School			
21	24	19	24	20	18	24	39

- a. Arrange the data in ascending order
- b. Which school scored the highest number of goals during a season
- c. Which school scored 25 goals or more the most times over the eight seasons
- d. Calculate the median of the number of goals for Peter's school and Joseph's school
- e. Calculate the first and third quartiles for both datasets
- f. Construct the five-number summaries for both datasets
- g. Whose school do you think is better at soccer, peter's or joseph's? Explain your answer by referring to the five-number summaries for the two datasets.

- h. Calculate the mean number of goals during the period for Perter's school and Joseph's school.
- i. The standard deviations for the two schools are given in the following table:

School	Standard Deviation
Peter's school	8,48
Joseph's school	6,65

Which school played more consistently over the eight seasons, i.e. which school tended to score a similar number of goals from one season to the next. Explain your answer

- j. Which measure of central technology, median or mode, better reflects the number of goals scored over the period by each school? Explain your answer.
- k. Which measure of spread, the five-number summary or standard deviation, better reflects the spread of the number of goals scored by each school? Explain your answer.

Answers

a. Peter's school: 11 18 20 21 24 25 31 39

Joseph's school: 18 19 20 21 24 24 24 39

- b. The highest number of goals is 39 for both schools.
- c. Peter's school scored 25 or more goals during 3 seasons, and Joseph's school only during 1 season.
- d. Peter's school: $(21+24) \div 2 = 22,5$ goals

Joseph's school: $(21+24) \div 2 = 22,5$ goals

e. Peter's school 1^{st} quartile = 2^{nd} and 3^{rd} values = $(18+20) \div 2 = 19$ goals

 3^{rd} quartile = (25+31) ÷ 2 = 28 goals

Joseph's school 1st quartile = $(19+20) \div 2 = 19,5$ goals

 3^{rd} quartile= (24+24) ÷ 2 = 24 goals

f.

Measure	Peter's school	Joseph's school
Minimum	11	18
1 st quartile	19	19,5
Median	22,5	22,5
3 rd quartile	28	24
Maximum	39	39

- g. The spread of values for Joseph's school is smaller than that of Peter's school. This means that Joseph's school is more consistent than Peter's school.
- h. Mean number of goals for Peter's school = 189 goals $\div 8 = 23$ goals

Mean number of goals for Joseph's school = 189 goals $\div 8 = 23$ goals

- i. The spread of goals scored is smaller for Joseph's school is smaller than for peter's school. This means that Joseph's school is the more consistent one when it comes to scoring goals.
- j. The mean does not provide an accurate picture of the average number of goals scored by each school because of the presence of outliners in the data for both schools. For Peter's school there are two outliners, 11 goals and 39 goals. For Joseph's school there is one outliner, 39 goals. As such, the median best reflects the average number of goals scored by each school.
- k. The five-number summary better reflects the spread of the number of goals scored by each school as it shows the spread values at different points in the data set so that one can see that the date is skewed as a result of the outliner. The standard deviation, on the other hand, is affected by the outliners and, as such, does not provide an accurate picture of the spread of the values in the data set.

GRADE	12	SUE	BJECT	MATHEMATIC	AL LITERACY	WEEK	8	TOPIC	REPRESENTING DATA (Pie charts) LP31: TIME: 60 min		
LESSON SUMMARY FOR: DATE STARTED:				DATE COMPLETED:							
			The Learne	ers should be able	to:						
			Read value	Read values directly from the values provided on Pie graphs.							
			Estimate values from given Pie graphs.								
LESSON OBJEC	CTIVES		Analyse graphs and make deductions about trends in the data and predictions for the future.								
			Represent multiple sets of collected data using pie charts.								
			They must be able to interpret and read values from a pie chart								
			Explain how the sizes of the different segments of a pie chart have been determined.								

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts and/or
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		resources: 1. Textbook
Pre-knowledge assessment	Baseline Assessment : Refer to Teacher activity.		2. Worksheets
Read values directly from the table of values	Derfermence Teck		3. Calculator
Baseline assessment tasks	Refer to Learner Activity Annexure –	Pre- knowledge –	4. NSC National examination
Many learners battle with basic calculation skills and using a calculator	Q1 (a) and/ or: Select appropriate	5min	question papers (2008 – 2011)
Therefore ensure that learners do the calculation tasks first. Select appropriate	column.	Baseline- 10 min	5. GDE SSIP Grade 10-12 Learner
calculation tasks from resources in the resources column.		Porformanco task	Notes and Typical examination
LESSON PREPARATION	Refer to Learner Activity Annexure –	20 min	questions
Representing data	Q1 (b) and/ or: Select appropriate	Home-work- 25 min	6. GDE Prelim question papers
Represent multiple sets of collected data using pie charts.	column		(2009 – 2011)
			7. DoE NSC exemplar question
Learners are not expected to draw pie charts in an examination.			papers
They must be able to interpret and read values from a pie chart and, if necessary, explain how the sizes of the different segments of a pie chart have been determined.			8. GDE Data Bank Math Lit Questions and answers Textbooks

	Sources of national/global
	statistics (e.g. teenage
	behaviour → Second National
	Youth Risk Behaviour Survey;
	population statistics; motor
	accident statistics; education
	statistics; health statistics)

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

1.a. Nadia has moved to the city and bought her own house. She decides to compare her monthly budget of R15 000 to her parents monthly budget of R20 000. Illustrate Nadia's parent's budget on a pie chart, using the table below.

		Nadia's parents budget (%)	Nadia's Budget (%)
A	Food, bond, electricity	30	40
В	Insurance, medical aid	15	5
С	Clothing and personal care	10	30
D	Communication (cellphone,	10	15
	computer, etc.		
E	Savings	15	5
F	other	20	5

1.a .Nadia's parent's budget



1.b. Nadia's budget



GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	8	TOPIC	REPRESENTING DATA(Histograms) LP32: TIME: 60 min

LESSON SUMMARY FOR: DA	TE STARTED:		DATE COMPLETED:			
	The Learners should be able	to:				
	Read values directly from the values provided on histogram graphs.					
LESSON OBJECTIVES	Draw a histogram graph from	ph from a given table of data.				
	Estimate values from given h	iistograms.				
	Organise data using an appropriate table, decide on the most appropriate format for representing the data (i.e. actual values or percentages).					
	Analyse histogram graphs a	nd make deductions about trend	ls in the data and predictions fo	or the future.		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		and/or resources: 1. Textbook- Spot On
INTRODUCTION	Baseline Assessment :	Pre-	2 Workshoots
Pre-knowledge assessment	Refer to Teacher activity.	knowledge –	2. WORSHEETS
Read values directly from the table of values		5min	3. Calculator
	Performance Task: Refer to Learner Activity Annexure –	Baseline- 10	4. NSC National
Baseline assessment tasks	Q1 and/ or: Select appropriate task	min	examination question
Many learners battle with basic calculation skills and using a calculator Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	column.	Performance task- 20 min	papers (2008 – 2011) 5. GDE SSIP Grade 10-12
from resources in the resources column.	Homework: Refer to Learner Activity Annexure –	Home-work-	Learner Notes and Typical
LESSON PREPARATION	Q2 and/ or: Select appropriate task	25 min	examination questions
Representing data	column		6. GDE Prelim question
			papers (2009 – 2011)

Read information from graphs and, if necessary, use estimation to determine values on the graphs.	7. DoE NSC exemplar
Analyse data presented in graphs in order to identify trends in the data to facilitate finding answers to the questions posed regarding issues relating to national and global issues. Owing to the large and complex nature of the data dealt with in relation to national and/or global issues, it is expected that more complex estimation will be required (e.g. <i>given that a bar</i> <i>representing the population of a particular age group lies between 23 000 000 and 24 000 000,</i> <i>the population in that age group is approximately 23 500 000</i>).	question papers 8. GDE Data Bank Math Lit Questions and answers Textbooks Sources of national/global statistics (e.g. teenage behaviour → Second National Youth Risk Behaviour Survey; population statistics; motor accident statistics; health statistics)

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

1.A group of 24 learners were asked how many hours of computer games or playstation games they played on average per week. The results are as follows:

21 6 6 10 6 26 21 8 1 7 11 16 2 2 12 12 16 17 3 4 15 3 4 18

a. Select a suitable size for class intervals.

b. Record the results in a frequency table.

Answer:

Number of hours	Frequency
0-5	7
6-10	6
11-15	4
16-20	4
21-25	2
26-30	1

2. Frequency table is a prerequisite to drawing a histogram. Draw the Histogram.

Class interval	Tally	Frequency
49 – 60	////	4
61 – 70	///	3
71 – 80	////	4
81 – 90	//	2
91 – 100	//	2
	Total	15

Histogram: Masses of 15 learners



1 mark for each 'bar'

1 mark each for labeling the axes 1 mark for the histogram title

(10)

GRADE	12	SUBJECT	MATHEMATIC	AL LITERACY	WEEK	8	TOPIC	REPRESENTING DATA (Bar Graphs) LP33: TIME: 60 min	
						•			
LESSON SUMMARY FOR: DATE STARTED: DATE COMPLETED:									
		The Le	arners should be able	to:					
		Read	Read values directly from the values provided on Bar graphs.						
LESSON OBJE	CTIVES	Draw	Draw a Bar graph from a given table of data.						
Estimate values from given Bar graphs. Organise data using an appropriate table, decide on the most appropriate format for representing the data (i.e. actual values or p									
						esenting the data (i.e. actual values or percentages).			
		Analyse Bar graphs and make deductions about trends in the data and predictions for the future.							

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		1. Textbook
	Baseline Assessment :		2. Worksheets
Pre-Knowledge assessment			3. Calculator
Read values directly from the table of values	Performance Task: Refer to Learner Activity Annexure –	Pre-	4. NSC National
<u>Baseline assessment tasks</u>	Q1 and/ or: Select appropriate task	knowledge – 5min	examination question
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	from resources in the resources column.	Parolino 10	papers (2008 – 2011)
from resources in the resources column.		min	5. GDE SSIP Grade 10-12
LESSON PREPARATION	Refer to Learner Activity Annexure –	Performance	Learner Notes and Typical
Representing data	Q1 continued and/ or: Select	task- 20 min	examination questions
Represent multiple sets of collected data using single bar graphs with an understanding that each type of representation offers a different picture of the data and that certain types of	the resources column	Home-work-	6. GDE Prelim question
representations are more appropriate for particular types of data (e.g. <i>Although it would be</i>		25 min	papers (2009 – 2011)
trends in the rainfall pattern from this chart. A bar graph and especially a line graph would			7. DOE NSC exemplar
allow for a much more in-depth analysis of the trends in the rainfall data.); and the effect that			question papers
created by a graph.			8. GDE Data Bank Main Li Questions and answers Textbooks

Read information from B ar graphs and, if necessary, use estimation to determine values on the graphs.	Sources of national/global statistics (e.g. teenage behaviour → Second National Youth Rick
answers to the questions posed regarding issues relating to national and global issues.	Behaviour Survey, population statistics; motor
global issues, it is expected that more complex estimation will be required (e.g. <i>given that a bar representing the population of a particular age group lies between 23 000 000 and 24 000 000, the population in that age group is approximately 23 500 000</i>).	education statistics; health statistics)

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

1. The table below illustrates the monthly bookings of Malong Caravan Park. Draw the bar graph to illustrate the frequency of bookings per month.

Month	No. of sites booked
January	4000
February	2000
March	2500
April	4000
Мау	2500
June	3500
July	4000
August	4000
September	3500
October	4000
November	2500
December	3500

Answer:



GRADE	12	SUBJECT	MATHEMATICAL L	TERACY	WEEK	8	TOPIC	REPRESENTING DATA(Line graphs) LP34: TIME: 60 min		
LESSON SUMMARY FOR: DATE STARTED: DATE COMPLETED:										
		The Learn	ers should be able to:							
		Read valu	Read values directly from the values provided on Line and broken line graphs.							
LESSON OBJE	CTIVES	Draw a Lir	Draw a Line graph from a given table of data.							
Estimate values from given Line graphs.										
Organise data using an appropriate table, decide on the most appropriate format for representing the data (i.e. actual values or percenta-							esenting the data (i.e. actual values or percentages).			
		Analyse Line graphs and make deductions about trends in the data and predictions for the future.						future.		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		and/or resources: 1. Textbook
Pre-knowledge assessment	Baseline Assessment : Refer to Teacher activity.	Pre-	2. Worksheets
Read values directly from the table of values	Performance Task:	knowledge – 5min	3. Calculator
Baseline assessment tasks	Refer to Learner Activity Annexure –	Baseline- 10	4. NSC National
Many learners battle with basic calculation skills and using a calculator	QI and/or: Select appropriate task	min	examination question
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	column.		papers (2008 – 2011)
from resources in the resources column.	Homowork	Performance task- 20 min	5. GDE SSIP Grade 10-12
LESSON PREPARATION	Refer to Learner Activity Annexure –		Learner Notes and Typical
	Q1 continued and/ or: Select	Home-work-	examination questions
Representing data Represent multiple sets of collected data using line and broken line graphs with an	appropriate task from resources in the resources column	25 min	6. GDE Prelim question
understanding that each type of representation offers a different picture of the data and that			papers (2009 – 2011)
certain types of representations are more appropriate for particular types of data (e.g.			7. DoE NSC exemplar

Although it would be possible to use a pie chart to show the monthly rainfall in a town, it would be difficult to identify trends in the rainfall pattern from this chart. A bar graph and especially a line graph would allow for a much more in-depth analysis of the trends in the rainfall data.); and the effect that the scale of a set of axes and the point at which the axes cross can have on the impression created by a graph.	question papers 8. GDE Data Bank Math Lit Questions and answers Textbooks
Read information from Line graphs and, if necessary, use estimation to determine values on the graphs.	Sources of national/global statistics (e.g. teenage behaviour \rightarrow Second
Analyse data presented in Line graphs in order to identify trends in the data to facilitate finding answers to the questions posed regarding issues relating to national and global issues.	National Youth Risk Behaviour Survey; population statistics; motor accident statistics; education statistics; health statistics)

Reflection/Notes:

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

1. The graph below shows the maximum and minimum temperatures of five world cities for 8 March 2011. Draw the line graphs for the maximum and minimum temperatures of five world cities for 8 March 2011, using the table below:

	Amsterdam	Harare	Hong Kong	London	New Deli
Maximum degrees	8	29	20	10	27
Celsius					
Minimum degrees	3	14	10	-1	13
Celsius					

Answer:



GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	8	TOPIC	REPRESENTING DATA (Multiple bar graph and Compound/vertical stack graphs) LP35: TIME: 60 min

LESSON SUMIMARY FOR: DATE STARTED:			DATE COMPLETED:				
LESSON OBJECTIVES	The Learners should be able	to:					
	Read values directly from the values provided on Multiple bar graph and Compound/vertical stack graphs.						
	Draw a Multiple bar graph and Compound/vertical stack graphs from a given table of data.						
	Estimate values from given N	Iultiple bar graph and Compound	d/vertical stack graphs				
	Organise data using an app decide on the most appropi	ropriate table, decide on the mo iate graph needed to represent	est appropriate format for re the data.	presenting the data (i.e. actual values or percentages), and			
	Analyse Multiple bar graph a	and Compound/vertical stack gra	aphs and make deductions	about trends in the data and predictions for the future.			

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts and/or
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		i. Textbook
INTRODUCTION	Baseline Assessment :		2. Worksheets
Pre-knowledge assessment	Relet to teacher activity.		3. Calculator
Read values directly from the table of values	Performance Task:	Pre- knowledge –	4. NSC National examination
Possing assessment tasks	Q1 and/ or: Select appropriate task	5min	question papers (2008 – 2011)
baseline assessment tasks	from resources in the resources column.	Baseline- 10 min	5. GDE SSIP Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate		Performance task-	Learner Notes and Typical
calculation tasks from resources in the resources column.	Homework: Refer to Learner Activity Annexure –	20 min	examination questions
LESSON PREPARATION	Q1 continued and/ or: Select	Home-work- 25 min	6. GDE Prelim question papers
Representing data	the resources column		(2009 – 2011)
Represent multiple sets of collected data using multiple bar graphs and compound/vertical stack araphs:			7. DoE NSC exemplar question
Read information from Multiple bar graph and Compound/vertical stack graphs			papers
and, if necessary, use estimation to determine values on the graphs.			8. GDE Data Bank Math Lit Questions and answers

Analyse data presented in graphs in order to identify trends in the data to facilitate finding answers to the questions posed regarding issues relating to national and global issues.	Textbooks Sources of national/global statistics (e.g. teenage behaviour → Second National
Owing to the large and complex nature of the data dealt with in relation to national and/or global issues, it is expected that more complex estimation will be required (e.g. given that a bar representing the population of a particular age group lies between 23 000 000 and 24 000 000, the population in that age group is approximately 23 500 000).	Youth Risk Behaviour Survey; population statistics; motor accident statistics; education statistics; health statistics)

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

1. The following table illustrates the percentage of users of facebook and twitter for December 2010. Draw the compound bar graph to show the comparison of users of facebook and twitter for December 2010

Users	% Users who update	% users who log in via	% users who log in daily	% users who are
	their status daily	mobile devices		located outside the USA
Facebook	12	30	41	70
Twitter	52	37	27	60

Answer



GRADE	12 SUBJEC	T MATHEMATICAL LITERACY	WEEK	8	TOPIC	REPRESENTING DATA (Interpreting and analysing data-1) LP36: TIME:60 min
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LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:			
	The Learners should be able to: Read and select data from representations (i.e. tables and graphs) containing data in order to answer questions relating to the data.					
LESSON OBJECTIVES	Identify and describe trends/patterns in data presented in tables/graphs and explain what the data is saying about the question/problem for which the data was collected.					
	Investigate how the choice account that: using percent comparing different catego	of representation of the data imp ages to represent data values in ries of data: the choice of scale (pacts on the impressions create a table or graph; using actual v on the axes and/or the point at	d and conclusion(s) that can be drawn taking into values to represent data values in a table or graph; when which the axes cross; tables.		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		and/or resources:
INTRODUCTION	Baseline Assessment :		
Pre-knowledge assessment	Refer to Teacher activity.		2. Worksheets
Read values directly from the values provided on graphs.	Performance Task:		3. Calculator
Baseline assessment tasks	Refer to Learner Activity Annexure – Q1	Pre-	4. NSE National
Many learners battle with basic calculation skills and using a calculator	(a-b) and/ or: Select appropriate task	5min	examination question
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation			papers (2008 – 2011)
tasks from resources in the resources column.	Homework:	min	5. GDE SSIP Grade 10-12
LESSON PREPARATION	(c-d) and/ or: Select appropriate task		Learner Notes and Typical
Interpreting and analysing data	from resources in the resources column	Performance task- 20 min	examination questions
Read and select data from representations (i.e. tables and graphs) containing data in		Home-work-	6. GDE Prelim question
order to answer questions relating to the data.		25 min	papers (2009 – 2011)
Identify and describe trends/patterns in data presented in tables/graphs and explain what		20 11111	7. DoE NSC exemplar
the data is saying about the question/problem for which the data was collected.			question papers
Investigate how the choice of representation of the data impacts on the impressions created and conclusion(s) that can be drawn, taking into account that: using percentages to represent data values in a table or graph is useful for comparing relationships in size, but does not reveal the size of the population/sample; using actual values to represent data			8. GDE Data Bank Math Lit Questions and answers Textbooks Sources of national/global

Reflection/Notes:			

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

1. Nadia has moved to the city and bought her own house. She decides to compare her monthly budget of R15000 rand, to her parents monthly budget of R20000.



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Key for the pie charts

А	Food, bond, electricity
В	Insurance, medical aid
С	Clothing and personal care
D	Communication (cellphone, computer, internet service
E	Savings
F	Other

- a. Write down two examples of monthly expenses that could be considered as 'other' expenses. (Transport and Entertainment)
- b. State the % of Nadia's monthly income that she spends on communication. (15%)
- c. Calculate the actual amount that Nadia's parents save each month. (R3000)
- d. Calculate the actual amount that Nadia spends on clothing and personal care. (R4500)



- a. Write down New Deli's maximum temperature. (27)
- b. Which city had a minimum temperature that was higher than London's maximum temperature? (Harare)
- c. Which city had the lowest minimum temperature? (Amsterdam)
- d. Which city had the highest minimum temperature as well as the highest maximum temperature? (Harare)
- e. Determine the temperature range for Amsterdam. [8-(-2)=10]
- f. Convert New Deli's minimum temperature to degrees Fahrenheit, using the formula: F=1,8 x degrees+32. (1.8x13+32= 55.4 Fahrenheit)

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	9	TOPIC	REPRESENTING DATA (Interpreting and analysing data - 2) LP37: TIME: 60 min
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LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:			
	The Learners should be able to:					
LESSON OBJECTIVES	Ask questions about the war error/bias/misinterpretation. Learners should know to ask neutrality of the data collect sizes of the groups used in g what this spread says about Compare different represen	Ask questions about the way in which data has been collected, organised, summarised and represented to reveal possible sources of error/bias/misinterpretation. Learners should know to ask questions about: the size of the sample; the representivity of the sample; the methods used for collecting data; the neutrality of the data collection process; whether the data collected was fact or opinion; the way in which the data was sorted and/or grouped; the sizes of the groups used in grouping the data; the type of measure used to determine the average of the data; the spread (range) of the data and what this spread says about the data.				
	Develop opposing arguments using the same summarised and/or represented data.					

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts and/or
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		resources: 1. Textbook
Pre-knowledge assessment	Baseline Assessment : Refer to Teacher activity.		2. Worksheets
Read values directly from the values provided on graphs.	Performance Task:	Pro knowledge	3. Calculator
Baseline assessment tasks	Refer to Learner Activity Annexure -	5min	question paper (2008
Many learners battle with basic calculation skills and using a calculator Therefore ensure that learners do the calculation tasks first. Select appropriate	from resources in the resources	Baseline- 10 min	2011)
calculation tasks from resources in the resources column.		Performance task-	5. GDE SSIP Grade 10-12
LESSON PREPARATION	Homework: Refer to Learner Activity Annexure –	20 min	Learner Notes and Typical
Analyse data presented in graphs In order to:	Q2 and/ or: Select appropriate task	Home-work- 25 min	examination questions
Identify trends in the data to facilitate finding answers to the questions posed	column		6. GDE Prelim question
regarding issues relating tonational and global issues.			papers (2009 – 2011)
Interpreting and analysing data			7. DoE NSC exemplar
Ask questions about the way in which data has been collected, organised, summarised and represented to reveal possible sources of			question papers
error/bias/misinterpretation.			

Learners should know to ask questions about: the size of the sample; the representivity of the sample; the methods used for collecting data; the neutrality of the data collection process; whether the data collected was fact or opinion; the way in which the data was sorted and/or grouped; the sizes of the groups used in grouping the data; the type of measure used to determine the average of the data; the spread (range) of the data and what this spread says about the data. Compare different representations of multiple sets of data and explain differences. Investigate situations in which summarised and/or represented data is interpreted in different ways. (e.g. <i>A newspaper may use statistics on the number of deaths related to motor vehicles to paint a picture of how dangerous it is to drive in South Africa. The Minister of Transport, on the other hand, may applaud the fact that the statistics show a drop in the number of road deaths.</i>) Develop opposing arguments using the same summarised and/or represented data. (e.g. <i>Analyse data on the matric results and explain how the statistics may be interpreted favourably by the Education Minister and negatively by a newspaper</i> .)	8. GDE Data Bank Math Lit Questions and answers Textbooks Sources of national/global statistics (e.g. teenage behaviour → Second National Youth Risk Behaviour Survey; population statistics; motor accident statistics; education statistics; health statistics)
In order to: Find answers to the questions posed regarding issues relating to the personal lives of learners, the wider community, and national and global issues.	
It is essential that the interpretation and analysis of data occur at every stage during the statistical cycle: when drawing up a questionnaire, questions should be asked about the reliability of the questionnaire; when organising data, decisions must be made about whether to express data as actual values or percentages, and the implications of each format; once measures of central tendency and spread have been calculated, the meaning of these measures in relation to the data should be determined; once graphs have been drawn to represent data, the graphs should be analysed to determine trends or meaning in the data; when conclusions are made from organised, summarised and represented data on a question or problem, those conclusions must be analysed in terms of each stage of the statistical cycle to determine the reliability and validity of the conclusions.	

Reflection/Notes:

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	
LEARNER ACTIVITY ANNEXURE

1. The graph below illustrates the monthly bookings of Malong Caravan Park



Caravan Park Bookings

- a. Why do you think the caravan park's bookings for December is greater than those for the month of February? (more people go on holiday during December than in February.)
- b. Calculate the mean number of total bookings made by pensioners.

Mean = (3500+1500+2000+3000+2000+2500+3000+2500+2000+3500)÷12 = 2500

- c. Determine the range of the number of bookings made? (4000-2000=2000)
- d. Every month, the caravan park has fixed expenses of R65000 and a further expense of R35 for every site booked. Determine the profit the caravan park had during the month of February. Income= (150x200=300 000); expenses= (65000+(35x2000) = 135 000; profit= 300 000-135000= R165 000
- Facebook and Twitter are two international social networking sites. Individuals can use Facebook and Twitter to communicate with one another via the internet. Facebook has 500 million users, of which 230 are male. Twitter has 10 million users, of which 50,88 million are male. The graph below shows a comparison of Facebook and Twitter for December 2010.
 - a. Give one example of a mobile device. (cellphone/ laptop/ iPad)
 - b. Write down the percentage of Facebook users who logged in using mobile devices (30%)
 - c. Calculate the percentage of Facebook users who did NOT update their status daily. (100%-12%=88%)
 - d. Determine the number of Twitter users that logged in daily. (27%x106million= 28 620 000 or 28,62 million)



GRADE	12	SUBJECT	MATHEMATICA	L LITERACY	WEEK	9	TOPIC	REPRESENTING DATA(Consolidation) LP38 TIME: 60 min		
LESSON SUMMARY FOR: DATE STARTED:					DATE COMPLETE	ED:				
		The Learn	ers should be able t	o:						
		Read valu	Read values directly from the values provided on graphs.							
			Draw a specified graph from a given table of data.							
LESSON OBJECTIVES		Estimate	Estimate values from given graphs.							
		Organise decide or	Organise data using an appropriate table, decide on the most appropriate format for representing the data (i.e. actual values or percentages), and decide on the most appropriate graph needed to represent the data.							
Analyse graphs and make deductions about trends in the data and predictions for the future.						re.				

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		Recommended texts
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		and/or resources:
	Baseline Assessment :		2. Workshoots
Pre-knowledge assessment	Refer to leacher activity.		2. WORSheets
Read values directly from the values provided on graphs.	Performance Task:	Pre- knowledae –	3. Calculator
Baseline assessment tasks	Refer to Learner Activity Annexure -	5min	4. NSC National
Many learners battle with basic calculation skills and using a calculator	Assignment.	Baseline- 10	examination question
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	Homework:	min	papers (2008 – 2011)
from resources in the resources column.	Refer to Learner Activity Annexure -	Porformanco	5. GDE SSIP Grade 10-12
LESSON PREPARATION		task- 20 min	Learner Notes and Typical
Revision		Home-work-	examination questions
Representing data Represent multiple sets of collected data using: pie charts; histograms; single bar graphs: line		25 min	6. GDE Prelim question
and broken line graphs; multiple bar graphs and compound/vertical stack graphs; box-and-		23 11111	papers (2009 – 2011)
whisker plots with an understanding of the following: that each type of representation offers a different picture of the data and that certain types of representations are more appropriate for			7. DoE NSC exemplar
particular types of data			question papers

(e.g. Although it would be possible to use a pie chart to show the monthly rainfall in a town, it		8. GDE Data Bank Math Lit
would be difficult to identify trends in the rainfall pattern from this chart. A bar graph and		Questions and answers
especially a line graph would allow for a much more in-depth analysis of the trends in the		Textbooks
rainfall data): the effect that the scale of a set of axes and the point at which the axes cross		Sources of national/alobal
can have on the impression created by a graph		statistics (e.g. teenage
Page information from graphs and if pagesany use estimation to determine values on the		behaviour Second
read information non graphs and, in necessary, use estimation to determine values of the		Deficiency Variable Disk
graphs.		
Analyse data presented in graphs in order to:		Benaviour Survey;
Identity frends in the data to facilitate finding answers to the questions posed regarding issues		population statistics; motor
relating to national and global issues.		accident statistics;
		education statistics; health
Owing to the large and complex nature of the data dealt with in relation to national and/or		statistics)
alobal issues, it is expected that more complex estimation will be required (e.g. <i>alven that a bar</i>		
global isoba, it is expected in all more complex commence with be required (e.g. given that a bar		
representing the population of a particular age group lies between 23 000 000 and 24 000 000,		
the population in that age group is approximately 23 500 000).		
Interpreting and analysing data		
Read and select data from representations (i.e. tables and graphs) containing data in order to		
answer questions relating to the data.		
Identify and describe trends/patterns in data presented in tables/graphs and explain what the		
data is saying about the question/problem for which the data was collected.		
Investigate how the choice of representation of the data impacts on the impressions created		
and conclusion(s) that can be drawn, taking into account that using percentages to represent		
data values in stable or arabis useful for comparing relationships in size, but does not reveal		
the size of the perputation (see this sector) wing a ctual values to represent data values in a table or		
arge to have the population/sample, using actual values to represent actual values in a trable of		
graph shows the population/sample size, but is often not useful for showing the relationship		
between categories clearly; when comparing alterent categories of data, it there is an		
unequal number of data items in each category, then the use of actual values or percentage		
values to represent the data will attect the impression of the data that is created; the choice of		
scale on the axes and/or the point at which the axes cross impact on the impression created		
by the graph; tables will often contain more information than graphs, but trends/patterns are		
less easy to observe.		
Ask questions about the way in which data has been collected, organised, summarised and		
represented to reveal possible sources of error/bias/misinterpretation.		
Learners should know to ask questions about: the size of the sample; the representivity of the		
sample: the methods used for collecting data: the neutrality of the data collection process:		
whether the data collected was fact or opinion: the way in which the data was sorted and/or		
arouped: the sizes of the groups used in grouping the data: the type of measure used to		
determine the average of the data: the spread (range) of the data and what this spread says		
about the data		
Compare different representations of multiple sets of data and evoluin differences		
Compare american representations of multiple sets of data and explain affected.		
investigate structions in which summatised and/or represented acta is interpreted in different		
ways.		

 (e.g. A newspaper may use statistics on the number of deaths related to motor vehicles to paint a picture of how dangerous it is to drive in South Africa. The Minister of Transport, on the other hand, may applaud the fact that the statistics show a drop in the number of road deaths.) Develop opposing arguments using the same summarised and/or represented data. (e.g. Analyse data on the matric results and explain how the statistics may be interpreted favourably by the Education Minister and negatively by a newspaper.) In order to: Find answers to the questions posed regarding issues relating to the personal lives of learners, the wider community, and national and along lives. 	
It is essential that the interpretation and analysis of data occur at every stage during the statistical cycle: when drawing up a questionnaire, questions should be asked about the reliability of the questionnaire; when organising data, decisions must be made about whether to express data as actual values or percentages, and the implications of each format; once measures of central tendency and spread have been calculated, the meaning of these measures in relation to the data should be determined; once graphs have been drawn to represent data, the graphs should be analysed to determine trends or meaning in the data; when conclusions are made from organised, summarised and represented data on a question or problem, those conclusions must be analysed in terms of each stage of the statistical cycle to determine the reliability and validity of the conclusions. Representing data	
Level 1	
Read values directly from the values provided on graphs.	
Level 2 Draw a specified graph from a given table of data. Estimate values from given graphs.	
Level 3 Organise data using an appropriate table, decide on the most appropriate format for representing the data (i.e. actual values or percentages), and decide on the most appropriate graph needed to represent the data.	
Level 4 Analyse graphs and make deductions about trends in the data and predictions for the future.	

Name of Teacher:	HOD:	
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Date:	Date:	

LEARNER ACTIVITY ANNEXURE

Possible assessment (incorporating all the stages of the statistical cycle):

Assignment: Risky behaviour

Collect, organise, summarise and represent data on drug and alcohol usage drawn from learners in different grades and from different gender and racial groups. Analyse the data in relation to the national results presented in the 1st or 2nd *National Youth Risk Behaviour Survey*.

Present the findings of the study to the management, teachers and learners in the school.

GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	9	TOPIC	EVALUATING EXPRESSIONS LIKELIHOOD(games, weather predictions) LP39: TIME: 60 min.
							P

LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:			
	The Learners should be able	to:				
	Work with situations involving	g likelihood, including				
	-games that make use of co	in and dice				
LESSON OBJECTIVES	- weather predictions					
	Explain whether or not a particular rainfall prediction indicates that it is more or less likely to rain.					
	Analyse a table of rainfall data for a town and make predictions about the chance of rain in that town during a particular month during the year. Evaluate and critique the validity of expressions and interpretations of likelihood presented in newspapers and other sources of information.					

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.		4. NSC National
An understanding of the concept of likelihood, together with a sense of whether	Performance Task:		examination question
an event is more or less likely to take place.	Refer to teacher activity column and/	Pre- knowledge –5min	papers (2008 – 2011)
Baseline assessment tasks	resources in the resources column.	Baseline- 10 min	5. GDE SSI P Grade 10-12
Many learners battle with basic calculation skills and using a calculator	Homework:	Performance task- 20 min	Learner Notes and Typical
Therefore ensure that learners do the calculation tasks first. Select appropriate	Refer to teacher activity column and/	Home-work- 25 min	examination questions
calculation tasks from resources in the resources column.	or: Select appropriate task from resources in the resources column		6. GDE Prelim question
LESSON PREPARATION			papers (2009 – 2011)
Evaluating Expressions involving likelihood			
Work with situations involving likelihood, including			7. DoENS C exemplar
			question papers

- games that make use of coin and dice	8. GDE Data Bank Math Lit
	Questions and answers
- weather predictions	Textbooks
	Coins and dice
In order to:	Games involving coins
	and dice; weather reports;
Evaluate and critique the validity of expressions and interpretations of likelihood	
presented in newspapers and other sources of information. (e.g. discuss the	
validity of such statements as:	
- 'if you choose the same numbers every week for the lottery, then this will	
increase your chances of winning'	
the more tickets you have the higher your elements of winning?	
- 'this team has a higher chance of winning the match than the other team.')	

Reflection/Notes:	

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

CPADE	12		WEEK	0	TOPIC	EVALUATING EXPRESSIONS LIKELIHOOD
GRADE	12	SUBJECT	WLLK	7	TOPIC	(Tests, cosmetic products)LP40: TIME: 60 min.

LESSON OBJECTIVES The Learners should be able to: Work with the following situations involving likelihood: - tests where there is the chance of inaccurate results - products making statements regarding likelihood Evaluate and critique the validity of expressions and interpretations of likelihood presented in newspapers and other sources of information. (e.g. a	LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:			
compation product that claims that 90% of the woman who used the product new bays lass visible wrinkles)	LESSON OBJECTIVES	The Learners should be able Work with the following situate - tests where there is the char - products making statement Evaluate and critique the value	to: Itions involving likelihood: ance of inaccurate results Its regarding likelihood alidity of expressions and interpret	tations of likelihood pre	esented in newspapers and	other sources of information. (e.g. a	

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.		4. NSC National
An understanding of the concept of likelihood (games, weather predictions), together	Performance Task:	Pre-knowledge -	examination question
Baseline assessment tasks	Refer to teacher activity column and/	5min	papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	resources in the resources column.	Baseline-	5. GDE SSI P Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate	Homowork	10 min	Learner Notes and Typical
calculation tasks from resources in the resources column.	Refer to teacher activity column and/	Performance task-	examination questions
LESSON PREPARATION	or: Select appropriate task from	20 min	6. GDE Prelim question
Evaluating Expressions involving likelihood	resources in the resources column	Home-work- 25 min	papers (2009 – 2011)
Work with situations involving likelihood, including			
- tests where there is the chance of inaccurate results (e.g. pregnancy test, drug test)			7. DoENS C exemplar
- products making statements regarding likelihood (e.g. a cosmetic product that			question papers
claims that 80% of the women who used the product now have less visible wrinkles)			

In order to: Evaluate and critique the validity of expressions and interpretations of likelihood presented in newspapers and other sources of information. (e.g. a cosmetic product that claims that 80% of the women who used the product now have less visible wrinkles)	8. GDE Data Bank Math Lit Questions and answers Textbooks cosmetic and other products making statements regarding likelihood (e.g. 80% of the women who used this product); products showing success and failure rates for their usage (e.g. pregnancy tests; drug
	(e.g. pregnancy tests; drug tests); etc.

Reflection/Notes:		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

							EVALUATING EXPRESSIONS LIKELIHOOD
GRADE	12	SUBJECT	MATHEMATICAL LITERACY	WEEK	9	TOPIC	(Lottery, gambling, risk assessments, newspaper articles) LP41:
							TIME: 60 min.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:	Pre- knowledge	1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.	–5min	2. Worksheets
INTRODUCTION	Baseline Assessment :	Baseline-	3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.	10 min	4. NSC Nat ional
An understanding of the concept of likelihood (drug tests), together with a sense of	Performance Task:	Performance	examination question
Baseline assessment tasks	Refer to teacher activity column and/	task- 20 min	papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	resources in the resources column.		5. GDE SSI P Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation		Home-work-	Learner Notes and Typical
tasks from resources in the resources column.		25 min	examination questions

LESSON PREPARATION	Homework:	6. GDE Prelim question
Evaluating Expressions involving likelihood	Refer to teacher activity column and/ or: Select appropriate task from	papers (2009 – 2011)
Work with situations involving likelihood, including	resources in the resources column	7. DoENSC exempl ar
national letterios (o a Doworball)		question papers
- nationationenes (e.g. rowerball)		8. GDE Data Bank Math Lit
- gambling scenarios (e.g. slot machines)		Textbooks newspaper
- risk assessment (e.g. in applications for car insurance)		articles referring to likelihood; information on
- newspaper articles that refer to 'likelihood', 'chance', and/or 'probability'.		a lottery; etc.
In order to:		
Evaluate and critique the validity of expressions and interpretations of likelihood		
presented in newspapers and other sources of information. (e.g. discuss the validity of		
such statements as:		
- 'if you choose the same numbers every week for the lottery, then this will increase		
- 'the more tickets you buy, the higher your chances of winning'.		
- 'this team has a higher chance of winning the match than the other team.')		

Name of Teacher:	HOD:	
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Date:	Date:	

CRADE	12	SUBJECT		WEEK	10	TOPIC	EVALUATING EXPRESSIONS LIKELIHOOD(Consolidation) LP42:
GRADE	12	SUBJECT		WEEK	10	TOPIC	TIME: 60 min.
LESSON SUM	MARY F	OR: DATE STARTI	ED:		DATE CO	MPLETED:	
LESSON OBJE	ECTIVES	The Lean Work wit - games - weathe - tests wh - product visible wh - nation - gamblin - risk asse - newspo Evaluate the valid - 'if yc - 'the - 'this Explain w Critique Analyse than oth Analyse	ners should be able to: h situations involving likelihood, that make use of coin and dice predictions here there is the chance of inact ts making statements regarding rinkles) al lotteries (e.g. Powerball) ng scenarios (e.g. slot machine essment (e.g. in applications for aper articles that refer to 'likelih e and critique the validity of exp lity of such statements as: bu choose the same numbers e more tickets you buy, the higher team has a higher chance of v vhether or not a particular rainf the use of references to likeliho a table showing risk assessmen- ers. a game involving likelihood an	including e ccurate results (e g likelihood (e.g. s) car insurance) ood', 'chance', pressions and inte very week for th er your chances vinning the mate call prediction inc od/probability v t profiles for peo	e.g. pregnand a cosmetic and/or 'prob erpretations of e lottery, the of winning', ch than the of dicates that it alues in new ple from diffe	cy test, drug test) product that claim bability'. of likelihood preser other team.') t is more or less like spaper articles. erent age groups of the fairness of the g	ns that 80% of the women who used the product now have less nted in newspapers and other sources of information. (e.g. discuss your chances of winning', sly to rain. and explain why particular age groups are classified as higher risk game.

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Pre-knowledge assessment activity: Refer to Teacher activity.	Pre- knowledge – 5min	1. Textbook 2. Worksheets
INTRODUCTION	Baseline Assessment :	paseime- 10 min	3. Calculator

Pre-knowledge assessment	Refer to Teacher activity.	Performance task-	4. NSC Nat ional
An understanding of the concept of likelihood (games, weather predictions, drug tests,	Performance Task	20 min	examination question
gambling), together with a sense of whether an event is more or less likely to take place.	Refer to teacher activity column	Home-work- 25 min	papers (2008 – 2011)
Baseline assessment tasks	and/ or: Select appropriate task from resources in the r esources		5. GDE SSI P Grade 10-12
Many learners battle with basic calculation skills and using a calculator	column.		Learner Notes and Typical
Therefore ensure that learners do the calculation tasks first. Select appropriate	Homework:		examination questions
calculation tasks from resources in the resources column.	Refer to teacher activity column		6. GDE Prelim question
LESSON PREPARATION	and/ or: Select appropriate task from resources in the r esources		papers (2009 – 2011)
Revision	column		7. DoE NSC exempl ar
Evaluating Expressions, involving likelihood			question papers
			8. GDE Data Bank Math
Work with situations involving likelihood, including			Lif Questions and answers Textbooks
-games that make use of coin and dice			Coins and dice
weather predictions			Games involving coins and dice: weather
- weditier predictions			reports; newspaper
- tests where there is the chance of inaccurate results (e.g. pregnancy test, drug test)			articles reterring to likelihood: cosmetic and
- products making statements regarding likelihood (e.g. a cosmetic product that claims			other products making
that 80% of the women who used the product now have less visible wrinkles)			statements regarding likelihood (e.a. 80% of the
- national lotteries (e.a. Powerball)			women who used this
			product); products showing success and
- gambling scenarios (e.g. slot machines)			failure rates for their
- risk assessment (e.g. in applications for car insurance)			usage (e.g. pregnancy tests: drug tests):
now an anex articles that refer to (likelihood), (change), and (or (probability)			information on a lottery;
- newspaper anicles maneter to likelihood , chance , ana/or probability .			etc.
In order to:			
Evaluate and critique the validity of expressions and interpretations of likelihood			
presented in newspapers and other sources of information. (e.g. discuss the validity of			
such statements as:			
- 'if you choose the same numbers every week for the lottery, then this will increase			

your chances of winning',	
- 'the more tickets you buy, the higher your chances of winning',	
- 'this team has a higher chance of winning the match than the other team.')	
Assessment	
Level 1	
Identify the percentage chance of rain for a particular town from a weather report in a	
newspaper. Explain the meaning of terms associated with likelihood (e.g. event: outcome)	
Level 2	
Express the likelihood of an event using fraction, percentage and decimal notation.	
Identify all of the possible outcomes for a particular event (e.g. rolling a dice; gambling	
Explain whether or not a particular rainfall prediction indicates that it is more or less likely	
to rain.	
Level 3 Conduct an experiment to compare the experimental likelihood of an event to its	
theoretical likelihood.	
Identify appropriate values from a given table of data values (e.g. on motor vehicle	
fatalities in South Africa) and express the probability of certain events shown on the table.	
Develop a game involving likelihood and administer the game to another learner in the	
Level 4	
Analyse a table of rainfall data for a town and make predictions about the chance of	
rain in that fown during a particular month during the year.	
chances of winning increase" makes sense.	
Critique the use of references to likelihood/probability values in newspaper articles.	
Analyse a table snowing risk assessment profiles for people from alterent age groups and explain why particular age groups are classified as higher risk than others	
Analyse a game involving likelihood and make a deduction about the fairness of the	
game.	
Investigation: Likelihood in the world	
Investigate how betting odds are determined for a sports event and critique the reliability	

	T
of these odds.	
UR	
Investigate the following statements in the contest of the national lottery and / or gambling:	
"If you choose the same numbers every week for the lottery, then this will increase your chances of winning." "The more tickets you buy, the higher your chances of winning."	
"The likelihood of winning a game improves if there has not been a winner for some time."	
OR	
Investigate the use of likelihood in determining "risk" in applications for car, household and life insurance.	

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Date:	Date:	

	CLID II				10	TODIO		PREDICTION	I
GRADE 12	20B1E		AL LITERACY	VVEEK	10	TOPIC	(games	, weather predictions)	LP43: TIME: 60 min.
LESSON SUMMARY	FOR: DATE S	TARTED:			DATE	COMPLETED:			
	Th	e Learners should be ab	le to:						
	W	ork with situations involvi	ng likelihood, in	cluding					
	-g	ames that make use of	coin and dice						
	- \	veather predictions							
	Re	ecognise that expression	s of likelihood a	re only prediction	ons about t	he outcome of ar	n event.		
	Re	ecognise that expression	s of likelihood a	re predictions a	ibout the fu	ture based on ev	ents of the past.		
LESSON OBJECTIVE	Re	ecognise that expression annot accurately predic	s of likelihood co t the outcome c	an only predict of single events.	the trend c	of an outcome ov	er a long period c	of time (for a very large	e number of trials) and
	R	ecognise that there are	two different wo	ays of making a	prediction	about the future.			
Recognise the difference between situations where the outcome of one event impacts on the outcome of another and situations where the two outcomes do not impact on each other.								ations where the two	
Recognise the difference between predictions that are based on knowledge and intuition about a situation (e.g. the outcome of a sports match) and expressions of likelihood that are based on long-term trends in data.									
		TEACHER ACTIVITIES				LEARNER AC	TIVITIES	TIMING	RESOURCES NEEDED
		TEACHER ACTIVITIES			Pre-I		TIVITIES	TIMING	RESOURCES NEEDED

TEACHING METHODS	Pre-knowledge assessment activity:	Pre-knowledge -	1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.	5min	2. Worksheets
INTRODUCTION	Baseline Assessment :	Baseline- 10 min	3. Calculator
Pre-knowledge assessment	Refer to reacher activity.		4. NSC Nat ional
An understanding of the concept of likelihood , together with a sense of whether an	Performance Task:	Performance task-	examination question
	or: Select appropriate task from	20 11111	papers (2008 – 2011)
	resources in the resources column.	Home-work- 25 min	

Baseline assessment tasks	Homework:	5. GDE SSIP Grade 10-12
Many learners battle with basic calculation skills and using a calculator	Refer to teacher activity column and/	Learner Notes and
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation	resources in the resources column	Typical examination
tasks from resources in the resources column.		questions
LESSON PREPARATION		6. GDE Prelim question
Prediction		papers (2009 – 2011)
Work with situations involving likelihood, including		7. DoE NSC exempl ar
- games that make use of coin and dice		question papers
- weather predictions		Lit Questions and
In order to:		Coins and dice Games involving coins
Recognise that expressions of likelihood are only predictions about the outcome of an event.)		and dice; weather reports;
Recognise that expressions of likelihood are predictions about the future based on events of the past.		
Recognise that expressions of likelihood can only predict the trend of an outcome over a long period of time (for a very large number of trials) and cannot accurately predict the outcome of single events. Recognise that there are two different ways of making a prediction about the future:		
 Prediction based on the observation of a large number of actual events (referred to as determining the experimental o 'empirical' likelihood/probability o an event). Prediction based on what is believed should/ might happen in a situation (referred to as determining in the theoretical likelihood/probability of an event). 		
Recognise the difference between situations where the outcome of one event impacts on the outcome of another and situations where the two outcomes do not impact on each other.		

Recognise the difference between predictions that are based on knowledge and	
likeliheed that are based on long term trends in data	
le a Even though we can use the historical win-lose record of two soccer teams to get a	
sense of who we believe might win in an uncoming match, there are simply too many	
other factors that impact on the performance of the teams (e.g. injuries of players)	
performance of the teams on the day) to be able to predict with cortainty what the	
performance of the match will be Accuch our "prediction" of who the wipping team will be	
becaute of the match will be. As such, our prediction of who the willing team will be	
is based on personal preference or knowledge about the two teams rather than on long-	
term historical trends.)	

teflection/Notes:	

Name of Teacher:	HOD:	
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Date:	Date:	

GRADE	12	SUB	SUBJECT MATHEMATICAL LITERACY WEEK 10 TOPIC		ТОРІС	PREDICTION			
GRADE	12	500.		MAIILMAIICA		WLLK	10	IOFIC	(Tests, cosmetic products) LP44: TIME: 60 min.
LESSON SUMM	IARY FC	DR: DATE	STARTED:				DATE CO	OMPLETED:	
		T	he Learne	ers should be able	to:				
		V	Work with 1	he following situa	itions involvin	g likelihood:			
		-	tests whe	re there is the cho	ance of inacc	curate results			
		-	products	making statemer	its regarding	likelihood			
		F	Recognise	that expressions	of likelihood o	are only predict	tions about the	outcome of an	event.
LESSON OBJEC	CTIVES	F	Recognise	that expressions	of likelihood o	are predictions	about the futu	re based on eve	nts of the past.
Recognise that expressions of likelihood can only predict the trend of an outcome over a long period of time (for a very large number of cannot accurately predict the outcome of single events.							r a long period of time (for a very large number of trials) and		
			Recognise	e that there are tv	vo different w	vays of making	a prediction al	pout the future:	
		-	Predic [.] Predic	tion based on the tion based on wh	observation at is believed	of a large num should/ might	nber of actual e happen in a si	events tuation	

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	activity:	Pre- knowledae –	2. Worksheets
INTRODUCTION	Refer to Teacher activity.	5min	3. Calculator
Pre-knowledge assessment	Baseline Assessment :	Baseline- 10 min	4. NSC National examination
An understanding of the concept of likelihood (games, weather predictions), together	Refer to leacher activity.		question papers (2008 –
Baseline assessment tasks	Performance Task:	Performance fask- 20 min	2011)
Many learners battle with basic calculation skills and using a calculator	Refer to teacher activity column and/ or: Select appropriate task		5. GDESSI P Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate	from resources in the r esources	Home-work- 25 min	Learner Notes and Typical
calculation tasks from resources in the resources column.	column.		examination questions

LESSON PREPARATION	Homework: Refer to teacher activity column	6. GDE Prelim question
Work with situations involving likelihood, including	and/ or: Select appropriate task from resources in the r esources column	7. DoE NSC exemplar
- tests where there is the chance of inaccurate results (e.g. pregnancy test, drug test)		question papers 8. GDE Data Bank Math Lit
- products making statements regarding likelihood (e.g. a cosmetic product that claims that 80% of the women who used the product now have less visible wrinkles)		Textbooks cosmetic and other products making
In order to:		statements regarding likelihood (e.g. 80% of the women who used this
Recognise that expressions of likelihood are only predictions about the outcome of an event.)		product); products showing success and failure
Recognise that expressions of likelihood are predictions about the future based on events of the past.		pregnancy tests; drug tests); etc.
Recognise that expressions of likelihood can only predict the trend of an outcome over a long period of time (for a very large number of trials) and cannot accurately predict the outcome of single events. Recognise that there are two different ways of making a prediction about the future:		
 Prediction based on the observation of a large number of actual events (referred to as determining the experimental o 'empirical' likelihood/probability o an event). (e.g. if a type of medicine is being administered to a group of ten people during a trial and one person develops a headache, then the experimental likelihood of using the medicine and developing headaches in this trail is 1/10. If however, the medicine were tested on 10 000 people, of whom 100 developed headaches, then the likelihood for this larger experiment is 1/1000. The likelihood for the second and larger experiment is possibly a more accurate reflection of the true likelihood of developing headaches when using the medicine because of the greater number of people involved in the experiment.) 		

-	Prediction based on what is believed should/ might happen in a situation (referred		
	to as determining in the theoretical likelihood/probability of an event). (e.g. based		
	on the results of the larger experiment, the manufacturers of the medicine can now		
	state on the bottles that 1 in 1000 people who use the medicine may develop		
	headaches. This value represents what the manufacturers expect to be the most		
	accurate description of the likelihood of developing headaches when using the		
	medicine.)		
	Prediction based on the observation of a large number of actual events (referred to		
	as determining the experimental o 'empirical' likelihood/probability o an event).		
	Dura diation la mandian subatis la cliqua del culd / reight have an in a situation (referred		
-	Prediction based on what is believed should/ might happen in a situation (referred		
	to as determining in the theoretical likelihood/probability of an event).		
-			
Red	coanise the difference between situations where the outcome of one event impacts		
on	the outcome of another and situations where the two outcomes do not impact on		
ead	ch other.		
-			
Rec	cognise the difference between predictions that are based on knowledge and		
intu	ition about a situation		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

CRADE	12		WEEK	10	TOPIC	PREDICTION(Lottery, gambling, risk assessments, newspaper articles) LP45:
GRADE	12	SOBJECT	VVEEN	10	IOPIC	TIME: 60 min.

LESSON SUMMARY FOR: DATE STARTED:			DATE COMPLETED:				
	The Learners should k Work with situations in - national lotteries (e.	s should be able to: ruations involving likelihood, including tteries (e.g. Powerball)					
LESSON OBJECTIVES	 - risk assessment (e.g. in applications for car insurance) - newspaper articles that refer to 'likelihood', 'chance', and/or 'probability'. 						
	Identify all of the pos Explain whether the s Critique the use of re	sible outcomes for a p tatement "if I take th ferences to likelihood	particular event (e.g. gambling ga e same Lottery numbers every wee I/probability values in newspaper a	ame). ek then my chances of winning increase" makes so articles.	ense.		
	Analyse a table shov higher risk than other Analyse a game invo	ving risk assessment p s. Iving likelihood and r	rofiles for people from different age nake a deduction about the fairne	e groups and explain why particular age groups a ess of the game.	re classified as		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis INTRODUCTION Pre-knowledge assessment An understanding of the concept of likelihood (drug tests), together with a sense of whether an event is more or less likely to take place.	Pre-knowledgeassessmentactivity:Refer to Teacher activity.Baseline Assessment :Refer to Teacher activity.	Pre- knowledge -5min Baseline- 10 min Performance	 Textbook Worksheets Calculator NSC National examination question papers (2008 – 2011)
		task- 20 min	

Baseline assessment tasks	Performance lask:	Home-work-	5. GDE SSIP Grade 10-12 Learner Notes and
Many learners battle with basic calculation skills and using a calculator	and/ or: Select appropriate task	25 min	Typical examination questions
Therefore ensure that learners do the calculation tasks first. Select appropriate	from resources in the r esources		6. GDE Prelim question papers (2009 – 2011)
calculation tasks from resources in the resources column.	column.		7. DoE NSC exemplar question papers
LESSON PREPARATION	Homework:		8. GDE Data Bank Math Lit Questions and
Prediction	Refer to te acher activity column		answers Textbooks newspaper articles
	and/ or: Select appropriate task		referring to likelihood; information on a
Work with situations involving likelihood, including	column		ioliery; elc.
- national lotteries (e.g. Powerball)			
- gambling scenarios (e.g. slot machines)			
- risk assessment (e.g. in applications for car insurance)			
- newspaper articles that refer to 'likelihood', 'chance', and/or 'probability'.			
In order to:			
Recognise that expressions of likelihood are only predictions about the outcome			
of an event, (e.g. Although there is always a chance that someone may win a			
lottery, this does not mean that there will always be a winner every time the lottery			
is played.)			
Recognise that expressions of likelihood are predictions about the future based on			
events of the past. (e.g. Car insurance rates for people between the ages of 18			
and 25 years are generally higher than those for people between the ages of 30			
and 55 years. This is because historically there have been more motor vehicle			
accidents involving 18 to 25 year olds than 30 to 55 years old.)			
Recognise that expressions of likelihood can only predict the trend of an outcome			
over a long period of time (for a very large number of trials) and cannot			
accurately predict the outcome of single events. (e.g. Event though people aged			
18 to 25 years are deemed more likely to be involved in a motor vehicle accident			
than any other age group, this does not necessarily mean that it is not possible			
that another age group might experience a higher number of crashes during the			
course of a year. However, based on trends in the past, it is more likely that people			
agea to to 23 years will be more involved in an accident.)			

Recognise that there are two different ways of making a prediction about the future:		
 Prediction based on the observation of a large number of actual events (referred to as determining the experimental o 'empirical' likelihood/probability o an event). Prediction based on what is believed should/ might happen in a situation (referred to as determining in the theoretical likelihood/probability of an event). 		
Recognise the difference between situations where the outcome of one event impacts on the outcome of another and situations where the two outcomes do not impact on each other.		
(e.g. If a person buys more than one lottery ticket, does this increase the chance of winning? And if a person plays a slot machine, does his or her chance of winning increase the more times he or she plays?)		
Recognise the difference between predictions that are based on knowledge and intuition about a situation (e.g. the outcome of a sports match or horse race) and expressions of likelihood that are based on long-term trends in data. (e.g. Even though we can use the historical win-lose record of two soccer teams to get a sense of who we believe might win in an upcoming match, there are simply too many other factors that impact on the performance of the teams (e.g. injuries of players; performance of the teams on the day) to be able to predict with certainty what the outcome of the match will be. As such, our "prediction" of who the winning team will be is based on personal preference or knowledge about the two teams rather than on long-term historical trends.)		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

GRADE 12 S	UBJECT MAT	HEMATICAL LITERACY	WEEK	10	TOPIC	PREDICTION (consolidation) LP46: TIME: 60 min.				
LESSON SUMMARY FOR: [DATE STARTED:			DATE COMP	LETED:					
	The Learners should be able to:									
	Work with situatio	ns involving likelihood, inc	cluding							
	-games that mak	e use of coin and dice								
	- weather predict	tions								
	- tests where ther	e is the chance of inaccu	ırate results (e.	.g. pregnancy	test, drug test)					
	- products making statements regarding likelihood (e.g. a cosmetic product that claims that 80% of the women who used the product now have less visible wrinkles)									
	- national lotteries (e.g. Powerball)									
LESSON OBJECTIVES	- gambling scenarios (e.g. slot machines)									
	- risk assessment (e.g. in applications for car insurance)									
	- newspaper articles that refer to 'likelihood', 'chance', and/or 'probability'.									
	Explain whether a	or not a particular rainfall	prediction indi	icates that it is	more or less like	ly to rain.				
	Analyse a table of rainfall data for a town and make predictions about the chance of rain in that town during a particular month during									
	Critique the use o	of references to likelihood,	/probability vo	alues in newsp	aper articles.					
	Analyse a table s than others.	Analyse a table showing risk assessment profiles for people from different age groups and explain why particular age groups are classified as higher risk than others.								
	Analyse a game	involving likelihood and m	nake a deduc	tion about the	fairness of the g	game.				

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:	Pre- knowledge –	1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.	5min	2. Worksheets

INTRODUCTION	Baseline Assessment :	Baseline- 10 min	3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.	Performance task-	4. NSC Nat ional
An understanding of the concept of likelihood (games, weather predictions, drug tests,	Performance Task:	20 min	examination question
gambling), together with a sense of whether an event is more or less likely to take place.	Refer to te acher activity column	Home-work- 25 min	papers (2008 – 2011)
Baseline assessment tasks	from resources in the r esources		5. GDE SSI P Grade 10-12
Many learners battle with basic calculation skills and using a calculator	column.		Learner Notes and Typical
Therefore ensure that learners do the calculation tasks first. Select appropriate	Homework:		examination questions
calculation tasks from resources in the resources column.	Refer to te acher activity column and/or: Select appropriate task		6. GDE Prelim question
LESSON PREPARATION	from resources in the r esources		papers (2009 – 2011)
Prediction - Revision	column		7. DoE NSC exempl ar
Work with situations involving likelihood, including			question papers
			8. GDE Data Bank Math
-games that make use of coin and dice			Textbooks
- weather predictions			Coins and dice
- tests where there is the chance of inaccurate results (e.g. pregnancy test, drug test)			and dice; weather
			reports; newspaper
- products making statements regarding likelihood (e.g. a cosmetic product that claims			likelihood; cosmetic and
Indi 80% of the women who used the product now have less visible withkies)			other products making
- national lotteries (e.g. Powerball)			likelihood (e.g. 80% of the
- gambling scenarios (e.g. slot machines)			women who used this
			showing success and
- risk assessment (e.g. in applications for car insurance)			failure rates for their
- newspaper articles that refer to 'likelihood', 'chance', and/or 'probability'.			tests; drug tests);
In order to:			information on a lottery;
Recognise that expressions of likelihood are only predictions about the outcome of an			
event, (e.g. Although there is always a chance that someone may win a lottery, this			
does not mean that there will always be a winner every time the lottery is played.)			

Recognise that expressions of likelihood are predictions about the future based on events of the past. (e.g. Car insurance rates for people between the ages of 18 and 25 years are generally higher than those for people between the ages of 30 and 55 years. This is because historically there have been more motor vehicle accidents involving 18 to 25 year olds than 30 to 55 years old.)

Recognise that expressions of likelihood can only predict the trend of an outcome over a long period of time (for a very large number of trials) and cannot accurately predict the outcome of single events. (e.g. Event though people aged 18 to 25 years are deemed more likely to be involved in a motor vehicle accident than any other age group, this does not necessarily mean that it is not possible that another age group might experience a higher number of crashes during the course of a year. However, based on trends in the past, it is more likely that people aged 18 to 25 years will be more involved in an accident.)

Recognise that there are two different ways of making a prediction about the future:

- Prediction based on the observation of a large number of actual events (referred to as determining the experimental o 'empirical' likelihood/probability o an event). (e.g. if a type of medicine is being administered to a group of ten people during a trial and one person develops a headache, then the experimental likelihood of using the medicine and developing headaches in this trail is 1/10. If however, the medicine were tested on 10 000 people, of whom 100 developed headaches, then the likelihood for this larger experiment is 1/1000. The likelihood for the second and larger experiment is possibly a more accurate reflection of the true likelihood of developing headaches when using the medicine because of the greater number of people involved in the experiment.)

- Prediction based on what is believed should/ might happen in a situation (referred to as determining in the theoretical likelihood/probability of an event). (e.g. based on the results of the larger experiment, the manufacturers of the medicine can now state on the bottles that 1 in 1000 people who use the medicine may develop headaches. This value represents what the manufacturers expect to be the most accurate description of the likelihood of developing headaches when using the medicine.) Recognise the difference between situations where the outcome of one event impacts on the outcome of another and situations where the two outcomes do not impact on each other. (e.g. *If a person buys more than one lottery ticket, does this increase the chance of winning? And if a person plays a slot machine, does his or her chance of winning increase the more times he or she plays?*)

Recognise the difference between predictions that are based on knowledge and intuition about a situation (e.g. the outcome of a sports match or horse race) and expressions of likelihood that are based on long-term trends in data. (e.g. Even though we can use the historical win-lose record of two soccer teams to get a sense of who we believe might win in an upcoming match, there are simply too many other factors that impact on the performance of the teams (e.g. injuries of players; performance of the teams on the day) to be able to predict with certainty what the outcome of the match will be. As such, our "prediction" of who the winning team will be is based on personal preference or knowledge about the two teams rather than on long-term historical trends.)		
Assessment		
Level 1 Identify the percentage chance of rain for a particular town from a weather report in a newspaper.		
Explain the meaning of terms associated with likelihood (e.g. event; outcome).		
Level 2 Express the likelihood of an event using fraction, percentage and decimal notation.		
Identify all of the possible outcomes for a particular event (e.g. rolling a dice; gambling game).		
Explain whether or not a particular rainfall prediction indicates that it is more or less likely to rain.		
Level 3 Conduct an experiment to compare the experimental likelihood of an event to its theoretical likelihood.		
Identify appropriate values from a given table of data values (e.g. on motor vehicle fatalities in South Africa) and express the probability of certain events shown on the table. Develop a game involving likelihood and administer the game to another learner in the class.		
Level 4 Analyse a table of rainfall data for a town and make predictions about the chance of rain in that town during a particular month during the year. Explain whether the statement "if I take the same Lottery numbers every week then my chances of winning increase" makes sense.		

Critique the use of references to likelihood/probability values in newspaper articles.		
Analyse a table showing risk assessment profiles for people from different age groups and explain why particular age groups are classified as higher risk than others.		
Analyse a game involving likelihood and make a deduction about the fairness of the game.		

Name of Teacher:	HOD:						
Sign:	Sign:						
Date:	Date:						
CDADE	10	SUBJECT		11	TODIO	EXPRESSIONS OF LIKELIHOOD	
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GRADE	12	SOBJECT		VVEEN		TOPIC	(games, weather predictions) LP47: TIME: 60 min.

LESSON SUMMARY FOR: DATE STARTED:	DATE COMPLETED:				
	The Learners should be able to: Work with situations involving likelihood, including: games that make use of coins and dice; weather predictions; in order to express the likelihood. Identify the percentage chance of rain for a particular town from a weather report in a newspaper.				
LESSON OBJECTIVES	Explain the meaning of terms associated with likelihood (e.g. event; outcome).				
	Express the likelihood of an event using fraction, percentage and decimal notation.				
	Develop a game involving likelihood and administer the game to another learner in the class.				

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.		4. NSC Nat ional
An understanding of the concept of likelihood, together with a sense of whether an	Performance Task:		examination question
	Refer to te acher activity column and/ or: Select appropriate task	Pre- knowledge –5min Baseline- 10 min	papers (2008 – 2011)
Baseline assessment tasks	from resources in the r esources		5. GDE SSI P Grade 10-12
Many learners battle with basic calculation skills and using a calculator	column.		Learner Notes and Typi cal
Therefore ensure that learners do the calculation tasks first. Select appropriate		Performance fask- 20 min	examination questions
calculation tasks from resources in the resources column.	Homework:		6. GDE Prelim question
	Refer to te acher activity column	Home-work- 25 min	papers (2009 – 2011)
	and/ or: Select appropriate task from resources in the resources		7. DoE NSC exempl ar
	column		question papers

LESSON PREPARATION		8. GDE Data Bank Math Lit
Expressions of likelihood		Questions and answers
Calculations involving likelihood and probability are often confined to mathematical		Lexibooks Coins and dice
calculations primarily in the context of dice, coins and games. However, although		Games involving coins and
we may encounter situations involving likelihood and chance on a regular basis in		dice; weather reports
daily life, it is very seldom that mathematical calculations are needed in order to		
make sense of those situations. For example, you don't need to be able to calculate		
the probability of winning a lottery to know that even though there is a chance of		
winning, that chance is very small. What is more important is having an		
understanding of the concept of likelihood, together with a sense of whether an		
event is more or less likely to take place.		
In light of the above, the descriptions given below encourage teachers to focus		
more on interpreting situations involving likelihood than on the mathematical		
calculation of likelihood. This involves developing an understanding of the concept		
of likelihood, familiarity with the different notations used in expressions of likelihood		
and developing a sense of whether a situation is more or less likely to occur.		
Alternative contexts outside of the realm of dice, coins and games have also been		
suggested to reinforce this focus.		
Expressions of likelihood		
Work with situations involving likelihood, including: agmes that make use of coins and		
dice; weather predictions;		
In order to:		
Recognise the difference between the following terms: event; outcome/result.		
that cannot take place – impossible events); and 1 or 100% (events that are certain		
to take place).		
Recognise that the likelihood of an event is expressed using fractions, percentages		
and decimal notation.		
The scope of the data relates to the personal lives of learners, the wider community.		
and national and global issues.		

Reflection/Notes:

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

CRADE	10	SURIECT		11	TODIC	EXPRESSIONS OF LIKELIHOOD
GRADE	12	SUBJECT	WEEK		IOFIC	(Tests, cosmetic products tables and graphs) LP48: TIME: 60 min.

LESSON SUMMARY FOR: DAT	e started:		DATE COMPLETED:			
	The Learners should be able	to:				
LESSON OBJECTIVES	Work with situations involving likelihood, including: tests where there is the chance of inaccurate results (e.g. <i>pregnancy test; drug test</i>); products making statements regarding likelihood (e.g. <i>a cosmetic product that claims that 80% of the women who used the product now have less visible wrinkles</i>); tables and graphs containing data and statistics; in order to express the likelihood.					
	Identify appropriate values events shown on the table.	from a given table of data values	s (e.g. on motor vehicle fatalitie	es in South Africa) and express the probability of certain		

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation,	Refer to Teacher activity.		2. Worksheets
Analysis INTRODUCTION	Baseline Assessment :		3. Calculator
Pre-knowledge assessment	Refer to leacher activity.		4. NSC National examination
An understanding of the concept of likelihood (games, weather	Performance Task:		question papers (2008 – 2011)
predictions), together with a sense of whether an event is more or less likely	and/ or: Select appropriate task		5. GDE SSIP Grade 10-12 Lear ner
to take place.	from resources in the resources	Pre- knowledge –5min	Notes and Typical examination
Baseline assessment tasks		Baseline- 10 min	questions
Many learners battle with basic calculation skills and using a calculator	Homework: Refer to teacher activity column	Performance task-	6. GDE Prelim questi on papers
Therefore ensure that learners do the calculation tasks first. Select	and/ or: Select appropriate task	20 min	(2009 – 2011)
appropriate calculation tasks from resources in the resources column.	from resources in the resources	Home-work- 25 min	7. DoE NSC exemplar question
LESSON PREPARATION			papers
Expressions of likelihood			
Work with situations involving likelihood, including: tests where there is the chance of inaccurate results (e.g. <i>pregnancy test; drug test</i>); products making statements regarding likelihood (e.g. <i>a cosmetic product that claims that 80% of the women who used the product now have less visible wrinkles</i>); tables and graphs containing data and statistics; In order to: Recognise the difference between the following terms: event; outcome/result.			

Recognise that likelihood is expressed using a scale that ranges between: 0	8. GDE Data Bank Math Lit
(events that cannot take place – impossible events); and 1 or 100% (events	Questions and answers Textbooks
that are certain to take place).	cosmetic and other products
Recognise that the likelihood of an event is expressed using fractions,	making statements regarding
percentages and decimal notation.	likelihood (e.g. 80% of the women
	who used this product);
The scope of the data relates to the personal lives of learners, the wider	products showing success and
community, and national and global issues.	failure rates for their usage (e.g.
	pregnancy tests; drug tests); table
	of data values (e.g. on motor
	vehicle fatalities in South
	Africa)etc.

Reflection/Notes:		

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

CRADE	GRADE 12		RIECT			WEEK	11	TOPIC	EXPRESSIONS OF LIKELIHOOD(Lottery, gambling, risk
GRADE			JLC1			WLLK		TOPIC	assessments, newspaper articles) LP49: TIME: 60 min.
LESSON SUMMARY FOR: DATE STARTED:					DATE COMPLETED	D:			
LESSON OBJECTIVES			The Learners should be able to: Work with situations involving likelihood, including: national lotteries (e.g. <i>Power Ball</i>); gambling scenarios (e.g. <i>slot machines</i>); risk assessments (e.g. <i>applications for car insurance</i>); newspaper articles that refer to "likelihood", "chance" and/or "probability". in order to express the likelihood. Identify all of the possible outcomes for a particular event (e.g. gambling game). Explain whether the statement "if I take the same Lottery numbers every week then my chances of winning increase" makes sense. Critique the use of references to likelihood/probability values in newspaper articles. Analyse a table showing risk assessment profiles for people from different age groups and explain why particular age groups are classified as higher than others.					ing scenarios (e.g. <i>slot machines</i>); risk assessments (e.g. <i>in</i> 'or "probability". in order to express the likelihood. nces of winning increase" makes sense. xplain why particular age groups are classified as higher risk	

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES NEEDED
TEACHING METHODS	Pre-knowledge assessment activity:		1. Textbook
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.		2. Worksheets
INTRODUCTION	Baseline Assessment :	_	3. Calculator
Pre-knowledge assessment	Refer to Teacher activity.	Pre- knowledge –	4. NSC Nat ional
An understanding of the concept of likelihood (drug tests), together with a sense of whether an	Performance Task:	5min	examination question
Baseline assessment tasks	Refer to te acher activity column	Baseline- 10	papers (2008 – 2011)
Many learners battle with basic calculation skills and using a calculator	from resources in the r esources	min	5. GDE SSI P Grade 10-12
Therefore ensure that learners do the calculation tasks first. Select appropriate calculation tasks	column.	Perform-ance	Learner Notes and Typical
from resources in the resources column.	Homework:	task- 20 min	examination questions
LESSON PREPARATION	Refer to te acher activity column	Home-work-	6. GDE Prelim question
Expressions of likelihood	from resources in the r esources	25 min	papers (2009 – 2011)
Work with situations involving likelihood, including: national lotteries (e.g. <i>Power Ball</i>); gambling scenarios (e.g. <i>slot machines</i>); risk assessments (e.g. <i>in applications for car insurance</i>);	column	2011111	7. DoENSC exemplar
newspaper articles that refer to "likelihood", "chance" and/or "probability". in order to express			question papers
the likelihood. Recognise the difference between the following terms: event: outcome/result			4000000 20200

Recognise that likelihood is expressed using a scale that ranges between: 0 (events that cannot take place – impossible events); and 1 or 100% (events that are certain to take place). Recognise that the likelihood of an event is expressed using fractions, percentages and decimal notation.	8. GDE Data Bank Math Lit Questions and answers Textbooks newspaper articles referring to likelihood ;information on a
The scope of the data relates to the personal lives of learners, the wider community, and national and global issues.	lottery; etc.

Reflection/Notes:

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	

TEACHER ACTIVITIES	LEARNER ACTIVITIES	TIMING	RESOURCES N	EEDED
TEACHING METHODS	Pre-knowledge assessment activity:	Pre- knowledge	1. Textbook	
Telling, Explanation, Discussion, Investigation, Calculation, Interpretation, Analysis	Refer to Teacher activity.	–5min	2. Worksheets	
INTRODUCTION	Baseline Assessment :	Baseline- 10 min	3. Calculator	
<u>Pre-knowledge assessment</u> An understanding of the concept of likelihood (games, weather predictions, drug tests,		Performance	4. NSE Nat	ional
	Performance Task: Refer to teacher activity column and/	task- 20 min	examination	question

gambling), together with a sense of whether an event is more or less likely to take place.	or: Select appropriate task fro m		papers (2008 – 2011)
Baseline assessment tasks	resources in the resources column.	Home-work-	5. GDE SSI P Grade 10-12
Many learners battle with basic calculation skills and using a calculator Therefore ensure that learners do the calculation tasks first. Select appropriate calculation	Homework:	25 min	Learner Notes and Typical
tasks from resources in the resources column.	or: Select appropriate task from		examination questions
LESSON PREPARATION	resources in the resources column		6. GDE Prelim question
Expressions of likelihood			papers (2009 – 2011)
Calculations involving likelihood and probability are often confined to <i>mathematical</i>			7. DoE NSC exempl ar
calculations primarily in the context of dice, coins and games. However, although we			question papers
may encounter situations involving likelihood and chance on a regular basis in daily life, it is very seldom that mathematical calculations are needed in order to make sense of those situations. For example, you don't need to be able to calculate the probability of winning a lottery to know that even though there is a chance of winning, that chance is very small. What is more important is having an understanding of the concept of likelihood, together with a sense of whether an event is more or less likely to take place. In light of the above, the descriptions given below encourage teachers to focus more on <i>interpreting</i> situations involving likelihood than on the mathematical calculation of likelihood. This involves developing an understanding of the concept of likelihood, familiarity with the different notations used in expressions of likelihood and developing a sense of whether a situation is more or less likely to occur. Alternative contexts outside of the realm of dice, coins and games have also been suggested to reinforce this focus.			8. GDE Data Bank Math Lit Questions and answers Textbooks Coins and dice Games involving coins and dice; weather reports; newspaper articles referring to likelihood; cosmetic and other products making statements regarding likelihood (e.g. 80% of the women who used this product); products
Expressions of likelihood Work with situations involving likelihood, including: games that make use of coins and dice; weather predictions; tests where there is the chance of inaccurate results (e.g. <i>pregnancy test; drug test</i>); products making statements regarding likelihood (e.g. <i>a</i> <i>cosmetic product that claims that 80% of the women who used the product now have</i> <i>less visible wrinkles</i>); tables and graphs containing data and statistics*; national lotteries (e.g. <i>Power Ball</i>); gambling scenarios (e.g. <i>slot machines</i>); risk assessments (e.g. <i>in</i> <i>applications for car insurance</i>); newspaper articles that refer to "likelihood", "chance" and/or "probability". In order to: Recognise the difference between the following terms: event; outcome/result. Recognise that likelihood is expressed using a scale that ranges between: 0 (events that cannot take place – impossible events); and 1 or 100% (events that are certain to take place). Recognise that the likelihood of an event is expressed using fractions, percentages and			showing success and failure rates for their usage (e.g. pregnancy tests; drug tests); information on a lottery; etc.

decimal notation. The scope of the data relates to the personal lives of learners, the wider community, and national and global issues.		
Assessment Level 1 Identify the percentage chance of rain for a particular town from a weather report in a newspaper. Explain the meaning of terms associated with likelihood (e.g. event; outcome).		
Level2 Express the likelihood of an event using fraction, percentage and decimal notation. Identify all of the possible outcomes for a particular event (e.g. rolling a dice; gambling game). Explain whether or not a particular rainfall prediction indicates that it is more or less likely to rain.		
Level 3 Conduct an experiment to compare the experimental likelihood of an event to its theoretical likelihood. Identify appropriate values from a given table of data values (e.g. on motor vehicle fatalities in South Africa) and express the probability of certain events shown on the table. Develop a game involving likelihood and administer the game to another learner in the class.		
Level 4 Analyse a table of rainfall data for a town and make predictions about the chance of rain in that town during a particular month during the year. Explain whether the statement "if I take the same Lottery numbers every week then my chances of winning increase" makes sense. Critique the use of references to likelihood/probability values in newspaper articles. Analyse a table showing risk assessment profiles for people from different age groups and explain why particular age groups are classified as higher risk than others. Analyse a game involving likelihood and make a deduction about the fairness of the game.		

Reflection/Notes:

Name of Teacher:	HOD:	
Sign:	Sign:	
Date:	Date:	