

Province of the Eastern Cape DEPARTMENT OF EDUCATION ISEBE LEZEMFUNDO DEPARTMENT VAN ONDERWYS

MATHEMATICS

TERM 4

SENIOR PHASE LESSON PLAN EXEMPLARS

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INTRODUCTION

The Eastern Cape Department of Education, Curriculum Chief Directorate in collaboration with the District curriculum personnel developed this document to support teachers' planning, teaching and assessment for effective implementation of the National Curriculum Statement in the GET Band.

The document contains exemplars of lesson plans with activities on each assessment standard in all learning outcomes. It is prepared with the intention to give necessary guidance for lesson planning for Term 4 in accordance with the provincial work schedule.

This document must be used as a guide in collaboration with the following documents: National Curriculum Statement. NCS Teacher's Guide for the development of Learning Programmes, National Assessment Policy, Provincial Assessment Guidelines, Provincial Planning Document. This can be adapted to suite the teacher's condition and contextual demands of the school. It is a guide to assist teachers in lesson planning. An exemplar is an illustration of how planning could be done, it is not cast on stone. Critical engagement with the document is encouraged.

NOTE TO THE TEACHER

Ensure that Mathematics is taught **daily** for **1 Hour** as according to policy. **Daily classwork and homework** should be given, marked and feedback be given to learners in order to ensure effective remedial work is done. **Informal assessment tasks** that culminate into **Formal assessment tasks** should be given at regular intervals.

Consult as many text books as possible as well as other support material including internet, where possible when developing lessons. Please do **not rely on one textbook only when planning lesson activities.** Whenever possible, learners should be encouraged to get messy, in order to formulate their own meaningful concepts. The teacher should assist learners in formalising their crude formulations as meaningful learning is the construction of the learner embedded in his previous experience. **Learners' misconceptions should be attended to before they become solidified.** The teacher should challenge misconceptions with engaging discourse. Some of the lesson plans encourage investigative approach to learning whenever possible.

Activities in the lesson plan exemplars are a guide that helps to scaffold the teacher in developing other related activities. This guide is not cast on stone as context and other critical factors might have an influence. Critical engagement with the document is encouraged.

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GRADE 7 MATHEMATICS LESSON PLAN EXEMPLARS CONTENT OVERVIEW

TERM 1	TERM 2	TERM 3	TERM 4
LO1	LO 1	LO1	LO1
Counting backwards and forwards	Profit & loss, budgets, accounts,	Rounding off numbers to at least	Calculations using a range of
in decimal intervals and integers	loans, simple interest, higher	1 decimal place.	techniques involving
Description and illustration of	purchase, exchange rates, ratio	Multiple operations with integers	the commutative, associative
historical development of	and rates.	Addition, subtraction and	and distributive properties with
numbers (e.g integers, common		multiplication of decimal fractions	positive rational numbers and
fractions)	LO2	and common fractions.	zero; also
Recognition, classification and	Draw tables , flow diagrams to		a calculator.
representation of numbers	describe relationships,	Division of positive decimals by	
(integers, decimals to at least 3	Look for pattern, describe in	whole numbers	Use of algorithms to find
dec place) fractions and	own words the relationship and	Percentages	equivalent fractions
percentages in order to describe	make conjectures	Exponents.	
and compare them.	Mathematical Modelling in		LO 2
Factors including prime factors of	various context	Mental calculations involving	Description of a situation by
3 digit numbers	Problem solving	squares to at least 12 ² and cubes	interpreting graphs
Recognition and use of equivalent		to at least 5°	Drawing of graphs
forms of rational numbers.	LO3		
Recognition, description and use	Transformation	LO2	LO 3
of: equivalent fractions including	(rotation, reflection,	Determination, analysis and	<u>Consolidation</u>
common fractions, decimals and	and translation) and symmetry	interpretation of the equivalence	Drawing and interpretation of
percentages	to investigate properties of	of the same rule in different ways	sketches of solids in different
	geometric figures	(verbally, in flow diagrams, in	perspective.
LO2	Recognition and description of	tables and by equations or	Location of positions on co-
Investigation and extension of	and differentiation between	expressions).	ordinate systems and maps using
numeric and geometric patterns	congruent and similar figures		compass direction
to find relationships and to			
formulate rules, not limited to	Calculations on perimeter, of	Drawing and interpretation of	Classification of different angles
sequences involving constant	various polygons Area of	sketches of solids in different	into acute, right, obtuse, straight,
difference or ratio;	a square and surface area	perspective.	reflex and revolution
(In the natural and cultural	rectangle square		

contexts or learners' own	triangle.	Location of positions on co-	Estimation, comparison,
creation)		ordinate systems and maps using	measurement and drawing of
Learners justify their conjectures	Volume of the following right	Cartesian plane and compass	angles accurate to one degree
	prisms:	directions	using protractors.
<u>LO3</u>	Triangular and		
Naming and exploring geometric	Rectangular and cube	LO 4	LO5
shapes		Interrelationship between	Consolidation:
Similarities and differences	LO 5	perimeter, area, surface area and	Theory of probability -listing
between different polyhedra,and	Determination and identification	volume in geometric solids	possible outcomes and
all quadrilaterals.	of measures of central tendency		determine relative frequency
Classification of geometric figures	viz.:	LO5	
and solids in terms of properties.	Median, mode, range and mean	Theory of probability - listing	
Construction of geometric figures		possible outcomes and determine	
and designing of nets to make	Drawing of graphs viz.:	relative frequency.	
models	bar graphs		
	histograms		
LO4	pie charts		
Problem solving including : Time ,	line and broken line graphs		
distance, speed, length,			
	Critical reading and		
Perimeter of polygons	interpretation of data to draw		
	conclusions and make		
	predictions.		
Selection and use of appropriate			
methods to collect data.			
Designing and using of			
questionnaires to collect data,			
leef dieploye			
Complex and negulations			
Samples and populations			

<u>GRADE 7</u>

LESSON PLAN EXEMPLARS

WEEK	LO's & AS's	CONTENT	ACTIVITIES
WEEK 1-3	LO's & AS's <u>CLUSTER 5: LO1</u> 7.1.9 Uses a range of techniques to perform calculations including : • using the commutative ,associative and distributive properties with positive rational numbers and zero; • Using a calculator. 7.1.11. Recognizes ,describes and uses : • .algorithms for finding equivalent fractions ; • the commutative, associative and distributive properties with rational numbers and zero. (<i>The expectation is that learners</i>	CONTENT Using a range of techniques to perform calculations. Recognition, description and use of mental calculation using commutative, associative and distributive properties of numbers. Using a calculator.	ACTIVITIES Activity 1 Getting to know your calculator. Activity 2 Computing using a calculator Activity 3 Use of Commutative law. Activity 4 Use of Associative law.
	rational numbers and zero. (The expectation is that learners should be able to use these properties and not necessarily to know the names of properties.		Activity 5 Use of distributive law . Activity 6 Properties of 0 Activity 7 Equivalent fractions

Activity 1

Functions of the keyboard on the calculator.

Calc	ulator				
Edit Vie	w Help	1			
					0.
	Backs	pace	CE		с
MC	7	8	9		sqrt
MR	4	5	6	·	%
MS	1	2	3	-	1/x
M+	0	+/-		+	=
	9				

Activity 2

Using a calculator, the teacher asks the following questions to the learners (each learner should have his/her own calculator):

- Press the ON button. What happens to the display? What is the function of this button?
- Press the OFF button. What happens? What is the function of this key?
- Press 345 + 327 = ... What happens? What are the functions of these buttons?
- Then, press the *C* key. What happens to the display? What is the function of this key?

The teacher goes on to ask questions about the functions of the calculator. The following basic functions may be covered in addition to the ones above : CE, %

The above-mentioned basic functions can be supplemented with the following information:

- MR: Use this button to put the contents of the memory onto the display. The default memory is number zero.
- %: This button displays the result of an arithmetic operation as a percentage.
- *M*+: Adding this button adds the number displayed to the contents of the memory.
- *M*-: Subtracts the number shown on the display from memory.
- *RM* or *MR*: Displays the accumulated total in the memory.

- *RM* or *MR*: Clears the memory. *Backspace*: Clears the display one space at a time from the right.

The following may be used as examples to explain the above:

Step 1	Display	Key
<u>•</u> 27 + 17 =	44	M+
$\div 2 =$	22	M+
Step 2		
$8 \times 41 =$	328	Ma
Step 3		
= .	350	
-28 - 35 =	287	
(ii) $12 + \frac{1}{2}$ of 10 6		
Step 1	Display	Key
$\frac{1}{2} \times 10 =$	5	Me
Step 2		
12 + MR - 6 =	11	

	key	Function
ļ	С	
ŀ	+	
ŀ	ON	
ŀ	OFF	
-	•	
	CE	
	-	
-	1	
-	% -	
L	Ŧ	

<u>Activity 3</u> Do the following activity with your calculator. Calculate from left to right: 12 + 14

What is the answer? Now calculate from right to left. Activity 2 above ,What do you notice? Why?

This is the **Commutative Law**.

Do the following calculations in your workbook using the Commutative Law. Use a calculator:

- 1. 34 + 76
- 2. 21 + 79
- 3. 43 + ... = 17 + ...
- 4. 178 x 145
- 5. 6.5 x 3.7
- 6. 543 x 0.2 = 0.2 x ...

The teacher may add more examples that include other operations so that learners can discover that commutative law is closed only under addition and multiplication

Activity 4

Do the following calculations and check the answer. Note: Work out the brackets first:

(3 + 5) + 6 =3 + (5 + 6) =

What did you notice? Why?

This is called the **Associative Law**.

<u>Note:</u> In the Associative Law, the order in which we calculate makes no difference to the answer. We use brackets in this case. (a + b) + c = a + (b + c) $(a \times b) \times c = a \times (b \times c)$

Sometimes it is easier to add or multiply in a different order, e.g.:

29 + 26 + 4

(26 + 4) + 29

30 + 29 $59 \rightarrow$ Sometimes it is also easier to rearrange the number order a little, e.g.: 2 x 17 x 5 (2 x 5) x 17 10 x 17 170 → Do the following calculations by using the Associative Law. Add the brackets and work out the answer by using your calculator: 1. 6 + 7 + 82. 13 x 4 x 10 3. 135 + 43 + 20 + 17 4. 349 x 10 x 17 5. 4.9 + 5.1 + 8.8 6. 7.0 x 4.5 x 20 The teacher may add more examples. Activity 5 Look at the following two sums. (Remember, we work out the brackets first when we calculate :) Note: In the Distributive Law, we get the same answer when we: (4 + 5) x 7 = 9 x 7 = 63 *and* 4 x 7 + 5 x 7 = 28 + 35 = 63 • Add up some numbers and then do multiplication, or What do you notice in the two sums? Explain you answer. Do each multiplication separately and then add • This is called the **Distributive Law.** them Examples:

a. (3 + 5) x 4 = 8 x 4 = **32** *is the same as* 3 x 4 + 5 x 4 = 12 + 20 = **32**.



Activity 7 Equivalent fractionsEquivalent fractionsThe teacher recaps on finding the equivalent fractions e.g. $^{3}/_{5} = ^{6}/_{10}$ and give related activities . Learners do activities on comparison of fractions with different denominators e.g. Arrange the following fractions in ascending order : $^{1}/_{2;} ^{3}/_{5;} ^{2}/_{3}$ More activities of this nature are given .
RESOURCES: Fraction diagrams & walls, Calculators, Rulers, Maths set, Wall charts & Number line strips.
INTEGRATION: <u>WITHIN:</u> LO2- Patterns, Functions and Algebra 7.2.2- Describes, explains and justifies observed relationships or rules in own words
ASSESSMENT: Homework, classwork, investigation
BARRIERS TO LEARNING: Use smaller numbers before getting to bigger numbers
EXPANDED OPPORTUNITIES: Use numbers to include billions as well algebraic expressions

WEEK	LO's & AS's	CONTENT	ACTIVITIES
4	<u>CLUSTER 4: LO 2</u> 7.2.6 Describes the situation by interpreting a graph of the situation, or draws a graph from a description of a situation, (e.g. height of a roller –coaster car over time; the speed of a racing car going around a track.	Description of a situation by interpreting graphs. Drawing of graphs.	Activity 1 Revision and consolidation of grade 6 work. Activity 2 Drawing a graph. Activity 3 Analysing a graph.

Activity 1

The teacher revises the different types of graphs by displaying pictures of graphs. For example, name the following graphs:







Picture Graph

Activity 2

The teacher does revision and consolidation of Grade 6 Learning Outcome 5, Assessment standard 6 and 7 i.e. drawing a variety of graphs by hand/technology to display and interpret data (grouped and ungrouped) including pictographs and bar graphs, and also to critically read and interpret data in a variety of ways.

For example:

- Learners are to collect test scores and use them to draw a bar graph and ask questions such as,
 - -What was the most common score in the test?
 - -How many learners altogether wrote the test? Estimate how many of them got fewer than half marks.
 - -The learners who took the test do revision on the work for a week, what do you think a graph will look
 - like if they take the test again in week's time?

• The tea the wee	icher may also us ek as follows:	e the picture to p	resent information	on e.g. if in a cer	tain school a total of twenty learners were absent during
Table:	DAYS	NUMI ABSE	BER OF LEAR	NERS	
MONDAY		5			
TUESDAY		2			
WEDNESDA	Y	0			
THURSDAY		4			
FRIDAY		9			
TOTAL		20			
					$ \underbrace{\frac{\text{Key}}{\circ \circ}}_{= 2 \text{ learners}} = 1 \text{ learner} $
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	

The teacher may ask the following questions:

- 1. On which day were the most learners absent?
- 2. On which day were all the learners present?
- 3. There were fewer learners absent on Thursday than on Friday. How many more learners were absent on Friday than Thursday?
- 4. What was the total number of learners absent from Monday to Friday?

Activity 2



The lotto winnings, in a period of one year, are illustrated per month below:

Months	January	February	March	April	May	June	July	August	September	October	November	December
Total Amount of Winnings in thousands	88	70	92	107	121	143	141	152	109	165	160	169

- 1. Using graph paper learners draw a bar graph to represent the information above (any type of graph can be used e.g. a scatter graph, histogram, line graph etc.). Use the vertical axis to represent the amounts in measures of 50 000 and on the horizontal axis the months.
- 2. Use your graph to answer the following:

a) Determine which month has the highest winnings and which one has the lowest? Why do you think this is so?

b) How much cash was paid out during the twelve months?

c) Why do you think the winnings were at its lowest during the first three months and its highest during the last three months. (The teacher may ask more questions to stimulate learners` cognitive thinking)



Questions
 According to the graph, which month of the year is the hottest? During which month was the average temperature the lowest? Why do you think this is so? During which months would the cool drink sales increase? Why? In which months would you wear warm clothes? Why? Which other month has its average temperature the same as that of January?
The teacher may add more critical questions.
RESOURCES: Graph paper, Maths instrument set.
NTEGRATION: Maths: 7.5.8 Draws a variety of graphs by hand/ Technology to display and interpret data/ NS LO 1 AS : Evaluates data and communicates findings.
SSESSMENT: home work ,classwork ,mini project, Test
SARRIERS TO LEARNING: More drawing of graphs
EXPANDED OPPORTUNITIES: More intensive interpretation of graphs that involve critical engagement
EACHER REFLECTIONS:

WEEK	LO's & AS's	CONTENT	ACTIVITIES
5-6	CLUSTER 4: LO 4 7.4.8 Classifies angles into acute, right, obtuse, straight, reflex or revolution 7.4.9 Estimates, compares, measures and draws angles accurate to one degree using protractors.	Classification, estimation and accurate drawing of different angles.	Activity 1 Classifying angles Activity 2 Comparing angles Activity 3 Accurate construction and measurement of angles

Activity 1 Classifying angles

For this activity you will need two strips of paper or cardboard. You can cut out the strips of paper and paste it onto a piece of cardboard, or use it as it is. Take a split pin (paper fastener – see picture) and join the two pieces at one end. Use a piece of string if you do not have split pins.



Split pins

Examples of different angles:



Let the learners turn the strips so that it forms different angles. Draw attention to the different angles as the learners turn the strips. Below are a few examples: **Right angles**, which is 90° . These strips are also **perpendicular** to each other: This is called a **straight angle**. It has turned 180[°]: A **revolution** is formed when the paper strip is turned 360⁰: An **acute angle** is formed when the angle is less than 90° .





Activity 3.2

Using a protractor (you may cut out the protractor in Appendix A if you don't have one) learners measure the actual size of angles (in activity 2) after estimating the size of the angles first. The following table can be used. The first one has been given as an example:

No.	Name of angle	Type of angle	Estimated size of angle (⁰)	Actual size of angle (⁰)
(a)	PRO	Acute	45 ⁰	(To be measured)
(b)				
(C)				
(d)				
(e)				
(f)				
(g)				
(h)				
(i)				

RESOURCES: Mathematical instrument set; Watch; Wall charts.

INTEGRATION: Maths: 7.1.1 Counts forwards and backwards; TECH LO1 Chooses and uses appropriate tools and materials.

ASSESSMENT: Memorandum, rubric, checklist.

BARRIERS TO LEARNING: Make use of immediate environment as well as the learners's arms to demonstrate different angles

EXPANDED OPPORTUNITIES: Give more complicated figures

TEACHER REFLECTIONS:

WEEK	LO's & AS's	CONTENT	ACTIVITIES
7-8	AS7.5.10 –Performs simple experiments where the possible outcomes are equally likely and; Lists the possible outcomes based on the conditions of the activity; Determines the frequency of actual outcomes for a series of trials; Determines the relative frequency using the definition of relative frequency (see Mathematics Learning Area Glossary).	Relative frequency	Acyivity Possible outcomes that are equally likely Determining the relative frequency 2 nd week should concentrate on revision of work done in this term

Introducti	<u>on</u>
The teach	ner demonstrates with a bag of white, grey and black marbles, and asks the following questions:
You have	e a bag of marbles. There are two white marbles, one grey and one black marble.
a) If you	take one marble out the bag without looking, what is the chance that that marble will be:
– W	/hite
– G	rey
– Bl	ack
b) What bag, on y	is the chance (probability) that you will take a grey marble out of the bag on you first draw, and if you do not put the marble back in the our second draw you take a white marble out of the bag?
c) What	is the chance that you will pick a white marble out of the bag that has:
1.1.C	One white and one black in it?
1.2.T	wo black marbles in it?
1.3.T	Three white marbles and one black in it?
Activity 1 Determin When you of two, th	ing the relative frequency u flip one coin, you will have one outcome out of a possibility of two outcomes: heads or tails. The relative outcome is therefore one out at is ½ or 50%.or 0,5
When you	u flip two coins, it is logical to say that there are three outcomes: (1) two heads; (2) two tails and (3) one head and one tail. This is not
quite corr	rect.
Consider	the table below:
left coin Right coin	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
The outco	omes can be listed as HH; HT; TH; TT - a total of 4 outcomes.
Make a ta	able like the one above and include the middle coin L M R. List the number of outcomes you will have when you flip three coins.
Activity 2	

1. Take any dice marked 1 to 6

- (a) If you throw the dice once, how many outcomes will you have?(b) Work in pairs and throw the dice 50 times. Record your findings by using tallies after every throw.
- (c) Draw a frequency graph to present the information in (b).
- (d) Calculate the relative frequency of throwing a 5.

Outcome	Tally to record outcomes	Frequency	Relative frequency
1			
2			
3			
4			
5			
6			

Activity 3

ROLLING A DIE

For this activity you will need two die. Work in groups

a) Look at the table below that shows all possible ways that totals could be made when rolling two dice. Complete the table.



RESOURCES: Marbles, dice, coins

INTEGRATION: NS LO1 AS: Evaluates data and communicates findings.

ASSESSMENT: Homeork, classwork, test

BARRIERS TO LEARNING: Prolong the use concrete material as much as possible

EXPANDED OPPORTUNITIES:

TEACHER REFLECTIONS:

APPENDIX A



TERM 4 GRADE 8 MATHEMATICS LESSON PLAN EXEMPLARS: CONTENT OVERVIEW

TERM 1	TERM 2	TERM 3	TERM 4
LO 1	LO2	LO1	LO4
Description and illustration of	Interpretation and use of basic	Profit & loss, budgets, accounts,	Ways of measuring in different
the historical development of	algebraic vocabulary in context:	loans, simple interest, higher	cultures throughout history (e.g.
numbers (e.g. irrational	Term, Expression, Coefficient	purchase, exchange rates, ratio	using knotted string leading to
numbers)	Exponent, Base, Constant Equation, Formula/rule	and rates (consolidation)	the Theorem of Pythagoras.
Integers, Decimals, fractions		Problem – solving involving	Problem-solving using the
and percentages, Numbers	Commutative, associative and	finances, ratio & rate,	theorem of Pythagoras
written in exponential form	distributive laws, Classification of		
including squares and cubes of	terms, multiplication and division of	Problem – solving involving time,	Calculate a missing length in a
natural numbers and their	algebraic expressions, Simplification	distance and speed.	right-angled triangle leaving
square and cube roots;	of algebraic expressions given in	LO2: Mathematical Madalling	
notation: Additive and	different representations of algebraic	Problem – solving involving	Plotting of points on a Cartesian
multiplicative inverses:	expressions. Use simple, equivalent	equations	plane.
Multiples and factors;	forms of algebraic expressions,	Graphical representation of a	
Irrational numbers in the	formulae and equations	problem situation	Horizontal and vertical change:
context of measurement e.g. n		Interpretation of Graphs	Ordered pairs:
and square and cube roots of	Solving equations by:		Compass direction
non-perfect squares and cubes	Inspection, Trial and	Interpretation of different	
commutative, cooperintive and	improvement/algebraically (additive	descriptions of the same	I ransformations (e.g. rotations,
distributive properties of	Solutions abacked by substitution	relationship or rule	enlargements and reduction
rational numbers			
Exponents			Drawing and interpretation of
Properties of Geometric			sketches of geometric solids from
			different perspectives with

shapes in natural and cultural forms. regular and irregular polygons and polyhedron :The platonic solids (tetrahedron, cube, octahedron, icosahedrons) t Designing and of use nets to make models of geometric of solids and Accurate constructions LO 2: Investigation of numeric and geometric patterns: (natural and cultural contexts) represented in physical and diagrammatic form. not limited to sequences involving constant difference or ratio, learner's own creation. represented in tables. algebraically	LO3: Vocabulary based on parallel lines cut by a transversal. Different angles emanating from parallel lines cut by a transversal. Angle relationships of triangles made from parallel lines cut by two or more transversals. LO 4: Estimating angles Comparing angles Drawing angles Constructing lines and angles Classification of angles	LO 4: Problem – solving involving measurement of geometric figures (perimeter, area & volumes) Meaning and use of pi and its historical development in measurement Conversion between SI units LO 5: Critical reading and interpretation of the graphs : -Bar graphs and double bar graphs • Histograms with given and own intervals; • Pie charts • Line and broken-line graphs • Scatter plots;-	attention to the preservation of properties LO 5 Probability Relative frequency of actual outcomes for a series of trials;
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LESSON PLAN EXEMPLARS

WEEK	LO's & AS's	CONTENT	ACTIVITIES
1 – 3	CLUSTER 3 [LO 4] LO 4: Measurement 8.4.10 Describes and illustrates ways of measuring in different cultures throughout history (e.g. determining the right- angles using knotted string, leading to the Theorem of Pythagoras.	Description and illustration of Pythagoras's Theorem as it was used in the Ancient history.	ACTIVITY 1 The teacher tells a story on how the ancient Egyptians measured their land using knotted ropes. S/he illustrates how these ropes were used to mark out triangles.
	8.4.8 Investigates (alone or as a member of a group or team) the relationship between the sides of a right-angled triangle in order to develop the Theorem of Pythagoras.	Investigations on the relationship between the sides of a right-angled triangle in order to develop the Theorem of Pythagoras	ACTIVITY 2 The teacher affords learners opportunities to investigate the relationship between the sides of a right-angled triangle in order to develop the theorem of Pythagoras.
	8.4.9 Uses the Theorem of Pythagoras to calculate a missing length in a right-angled triangle leaving irrational answers in surd form ($$)	Problem – solving using the theorem of Pythagoras.	ACTIVITY 3 The teacher consolidates findings, and then allows learners do applications on Pythagoras's theorem.

ACTIVITY 1 1.1 Example:

The teacher illustrates to the learners how ancient Egyptians measured their land using the knotted ropes as in figures 1 & 2 below;-



<u>AIM</u>:- to discover the relationship between the sides of a right-angled triangle in order to develop the Theorem of Pythagoras and its application.











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A 40 m B



The teacher must give more activities to consolidate this concept.
RESOURCES: pair of scissors; squared grid paper; sharp pencil and ruler.
ASSESSMENT: Assignment (Activity 1 above): Investigations (Act. 2) or Test
BARRIERS TO LEARNING: Learners might find difficulties in manipulation of this formula give more activities and assist them in that regard.
EXPANDED OPPORTUNITIES: Include more real life scenarios where learners will use Pythagoras for problem solving.
TEACHER REFLECTION:

WEEK	LO's & AS's	CONTENT	ACTIVITIES		
4 – 5	CLUSTER 3 [LO 3] LO 3 : Space and Shape 8.3.9 Locates positions on co-ordinate system (ordered grids), Cartesian plane(first quadrant)and maps, and describes how to move between positions using: • horizontal and vertical change; • ordered pairs; • compass direction.	Plotting of points on ordered grids; Cartesian planes and map and the descriptions of movements between located positions.	ACTIVITY 1 The teacher recaps on locating points in different setting as dealt with in previous grades.		
	8.3.8 Draws and interprets sketches of geometric solids from different perspectives with attention to the preservation of properties.	Drawing and interpretation of geometric solids sketches having preservations of their properties in tact.	ACTIVITY 2 The teacher provides learners with multiple opportunities to draw and interpret geometric solids with the preservation of their properties.		
	 <u>ACTIVITY 1</u> The teacher recaps with the learners on locating points in different setting as dealt with in previous grades. <u>Example 1</u> The learners do the following activities as instructed and supervised by the teacher:- 1.1 Locates positions on Cartesian plane(first quadrant) and describes how to move between positions using horizontal and vertical change and/or ordered pairs; Learners must consider the image on figure 1 below and answer the following questions;- i) Label PQRS on the top shape in figure. In what quadrant of the Cartesian plane is this shape PQRS? ii) Write the co-ordinated of shape PQRS. iii) What kind of image is P'Q'R'S' (shape below in figure 1)? iv) Describe the horizontal and vertical movement of the vertices to the image. 				





