

**MATHE
MAT
ICS
Semester
One**

GRADE: 10
Period 1
TOPICS: Sets and operations on sets

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES/ ASSESSMENTS |
|--|--|--|--|---|---|
| <p>Learners are able to apply their concepts to define set using set notation, define the types of sets, define and illustrate subset, define Venn diagrams to illustrate the intersection of sets and union of sets, disjoint sets and complement of set. They are able to state the properties of sets and use the Venn diagrams to solve two –problems and three set-problems</p> | <p>Upon completion of this topic, learners will:</p> <ol style="list-style-type: none"> 1. Define and identify set using set notation 2. Define and discuss the types of sets (infinite set, finite set, Universal set, equal sets, equivalent sets) 3. Define , discuss and illustrate subsets 4. Discuss the Venn Diagrams 5. Define ,discuss and use the Venn diagram to illustrate intersection of sets 6. Define, discuss and use the Venn diagrams to illustrate Union of sets 7. Define, discuss and use the Venn diagram to show disjoint sets and | <ol style="list-style-type: none"> 1. set using set notation 2. the types of sets (infinite set, finite set, Universal set, equal sets, equivalent sets) 3. subsets 4. Venn Diagrams 5. Venn diagram to illustrate intersection of sets 6. Venn diagrams to illustrate Union of sets 7. Venn diagram to show disjoint sets and complement of | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Identify and discuss</p> <p>set using set notation</p> <ol style="list-style-type: none"> 1. infinite set, finite set, Universal set, equal sets, equivalent sets and 2. subsets | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p>EXPECTED COMPETENCIES</p> <p style="text-align: center;">⋮</p> <ol style="list-style-type: none"> <u>1.</u> Analytical and problem solving skills <u>2.</u> Creativity and innovation skills <p>ASSESSMENTS</p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> |

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| | <p>complement of a set.</p> <p>8. State and discuss the properties of sets</p> <p>9. Use the Venn diagrams to solve two-set and three-set problems</p> | <p>a set.</p> <p>8. properties of sets</p> <p>9. Venn diagrams to solve two-set and three-set problems</p> | <p>Draw the Venn Diagram and illustrate</p> <ol style="list-style-type: none"> 1. intersection of sets 2. Union of sets 3. disjoint sets and complement of a set 4. Venn diagram to solve two- set and three set problem | | <p>-Attendances</p> <p>-Oral questions and Answers</p> <p>-Class Assignment and Participation</p> <p>-Observation</p> <p>-Assignments</p> <p>-Research</p> <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
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One

Semester

GRADE: 10

Period: 1

TOPIC: RATIONAL NUMBERS

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES/ASS ESSMENT |
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| <p>Learners are able to apply the concept of rational numbers to add and subtract rational numbers, multiply rational numbers, employ the properties of multiplication on rational numbers and solve problems involving real numbers and their number line diagrams.</p> | <p>Upon completion of this topic, learners will:</p> <ol style="list-style-type: none"> 1. Identify and Discuss rational Number 2. Solve Addition and Subtraction of rational 3. Solve Multiplication of rational 4. State and use the properties of multiplication of rational numbers 5. Solve Decimal representation 6. Define Real numbers and illustrate it on the real number line 7. Identify the Properties of real numbers 8. Discuss Approximation 9. Demonstrate Standard Form | <p>Rational Number</p> <ul style="list-style-type: none"> • Addition and Subtraction of rational numbers • Multiplication of rational numbers • Properties of multiplication of rational numbers • Division of rational numbers • Decimal representation • Real numbers • The real number line • Properties of real numbers • Approximation • Standard Form • Binary Operation | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Identify and Discuss:</p> <p>a. rational Number</p> <p>Solve:</p> <p>Addition and Subtraction rational</p> <p>Solve</p> <p>a Multiplication of rational</p> <p>State and use:</p> <p>a. the properties of multiplication of rational numbers</p> <p>Demonstrate:</p> <p>a. the Division of rational numbers</p> <p>Solve:</p> <p>a Decimal representation</p> <p>Define; A Real numbers and illustrate it on the real number line</p> <p>Identify:</p> <p>the Properties of real numbers</p> | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p>EXPECTED COMPETENCIES</p> <ol style="list-style-type: none"> 1. Analytical and problem solving skills 2. Creativity and innovation skills <p>ASSESSMENT</p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test |
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| | | | Discuss: Approximation Demonstrate Standard Form State: Binary Operation | | -Exams |
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GRADE: 10

Semester One

Period 11

TOPICS 1: ALGEBRAIC EXPRESSION

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES /ASSESSMENTS |
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| <p>Learners are able to apply the concepts to form algebraic statements, form algebraic expressions, evaluate algebraic expressions, determine relations between two algebraic expression:</p> <ul style="list-style-type: none"> • Expansion • Algebraic fraction • Factorization • Product of two binomials • Perfect squares • Difference of two squares • Factoring quadratic expressions | <p>Upon completion of this topic, learners will:</p> <ol style="list-style-type: none"> 1. Express Statements in algebraic expression 2. Discuss Numerical Statement 3. Form Algebraic Expression 4. Evaluate Algebraic Expression 5. Show Relations between two algebraic expression 6. Demonstrate Expansion 7. Demonstrate Expansion 8. Add and Subtract Algebraic fraction 9. Discuss Factorization 10. Product of two binomials 11. Express Perfect square 12. Show Difference of two squares 13. Factorize quadratic expressions | <p><u>Algebraic Expression</u></p> <ul style="list-style-type: none"> • Algebraic Statements • Numerical Statement • Forming Algebraic Expression • Evaluating Algebraic Expression • Relations between two algebraic expression • Expansion • Algebraic fraction • Factorization • Product of two binomials • Perfect square • Difference of two squares • Factorizing quadratic expressions | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Discuss and Analyze:</p> <ol style="list-style-type: none"> a. Statements in algebraic expression b. Numerical Statement <p>Form and Evaluate</p> <ol style="list-style-type: none"> a. Algebraic Expression b. Relations between two algebraic expression <p>Demonstrate skills</p> <ol style="list-style-type: none"> a. Expansion b. Add and Subtract Algebraic fraction <p>Define, Discuss and Solve</p> <ol style="list-style-type: none"> a. Factorization b. Product of two binomials c. Perfect square d. Difference of two squares <p>Factorize:</p> <ol style="list-style-type: none"> a. quadratic expressions | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p>EXPECTED COMPETENCES :</p> <ul style="list-style-type: none"> • ANALYTICAL AND PROBLEM-SOLVING SKILLS ASSESSMENTS <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation |

- Observation
- Assignments
- Research
- Quiz
- Test
- Exams

Semester

One

GRADE: 10

Period 11

TOPIC 11: NUMBER BASE

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION /COMPETENCIES |
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| Learners are able to analyze, develop, set and achieve life's objectives | Upon completion of this topic , learners will: <ol style="list-style-type: none"> 1. Discuss the base ten system 2. Convert base ten to other bases 3. Add and Subtract in bases five and eight 4. Multiply in bases | Number Base <ul style="list-style-type: none"> • The base ten system • Convert to other bases • Add and Subtract in bases five and eight • Multiplication • Operate in other | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Analyze and solve :</p> <p>a. the base ten system</p> | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary</u></p> | <p>EXPECTED COMPETENCES:</p> <p>1. Analytical skills and problem-solving ability.</p> <p><u>ASSESMENTS STRATEGIES:</u></p> |

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| | <p>5. Operate in other bases 6. Convert from other bases to base ten</p> | <p>bases</p> <ul style="list-style-type: none"> Convert from other bases to base ten | <p>Convert :</p> <p>a. from base ten to other bases</p> <p>Add, Subtract and multiply:</p> <p>a. In bases five, eight and ten</p> <p>Operate:</p> <p>a. in other bases</p> <p>Convert:</p> <p>a. from other bases to base ten</p> | <p><u>Texts</u></p> <p>AKI-OLA series</p> <p>Core mathematics for senior secondary schools</p> | <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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Semester

One

GRADE: 10
Period 111
TOPIC: PLANE GEOMETRY

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES/ASSESSMENTS |
|-------------------|------------|----------|------------|----------------------|-------------------------|
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Learners are able to draw and measure angles, calculate angles, identify angle properties of parallel lines, draw and name triangles, apply angle properties of triangles, solve right-triangle, apply Pythagorean triples, and solve problems on quadrilaterals

- Upon completion of this topic, learners will:
1. Draw and measure angles
 2. Calculate angle
 3. Discuss angle properties of parallel lines
 4. Draw and name Triangles
 5. Discuss angle properties of triangles
 6. Discuss Right – angled triangles
 7. Define and apply the Pythagoras theorem
 8. Pythagoras triples
 9. Determine the Square and square root
 10. Discuss the property of the polygons
 11. Describe and calculate the angles:
 - a. Parallelograms and trapezium
 - b. Kites
 - c. Rhombuses
 - d. Rectangles and squares

- Plane and geometry**
- Measuring and drawing angle
 - Calculating angle
 - Angle properties of parallel lines
 - Triangles
 - Angle properties of triangles
 - Right – angled triangles
 - Pythagoras theorem
 - Pythagorean triples
 - Square and square root
 - polygons
 - Parallelograms and trapezium
- Kites
-Rhombuses
Rectangles and squares

- Inclusive and Differentiated activities**
- Individual seat work or work in mixed groups, according to abilities, gender and learning styles.
- Draw and measure:**
- a. angle
- Calculate:**
- a. angle
- Discuss :**
- a. angle properties of parallel lines
- Draw and name:**
- a. Triangles
- Discuss :**
- a. angle properties of triangles
 - b. Right – angled triangles
- Define and apply:**
- a. the Pythagoras theorem
- Determine :**
- a. Square and square root
- Discuss :**
- a. property of the polygons

A. Primary Text

Mathematics for Senior

High School (Books 1,2 & 3) (Pearson)

B. Secondary Texts

EXPECTED COMPETENCIES

1. Analytical skills and problem-solving skills

ASSESSMENT

STRATEGIES:

Can be used to check competences. Select relevant options:

- Attendances
- Oral questions and Answers
- Class Assignment and Participation
- Observation
- Assignments
- Research
- Quiz
- Test

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| | | | Describe and calculate the angels: a. Parallelograms and trapezium b. Kites c. Rhombuses d. Rectangles and squares | | -Exams |
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Semester

One

GRADE: 10
Period: 1V
TOPIC: LINEAR EQUATIONS AND INEQUALITIES

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES/ASS ESSMENTS |
|------------------------------|---|--|--|-----------------------------|---------------------------------|
| Learners are able appreciate | upon the completion of this topic, learners will: | Linear equations and inequalities | <u>Inclusive and Differentiated</u> | <u>A. Primary</u> | EXPECTED |

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| <p>and interpret images that reflects real world situation.</p> | <ol style="list-style-type: none"> 1. Equality and equivalence 2. Finding the solution set of a linear equation 3. Word problem and equations 4. Solving linear inequalities in one variable 5. Graph of linear inequalities in one graph <p>Word problem and inequalities</p> | <ul style="list-style-type: none"> • Equality and equivalence • Finding the solution set of a linear equation • Word problem and equations • Solving linear inequalities in one variable • Graph of linear inequalities in one graph • Word problem and inequalities | <p><u>activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Identify and solve</p> <ul style="list-style-type: none"> • Equality and equivalence • Finding the solution set of a linear equation • Word problem and equations • Solving linear inequalities in one variable • Graph of linear inequalities in one graph • Word problem and inequalities | <p><u>Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p>COMPETENCES:</p> <ul style="list-style-type: none"> • analytical skills • problem-solving skills <p>ASSESSMENT</p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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**Semester
One**

GRADE: 10
Period 1V
TOPIC: RELATIONS AND FUNCTIONS

| LEARNING OUTCOMES | OBJECTIVES | COENTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION /COMPETENCIES |
|---|---|--|--|---|--|
| <p>Learners are able to apply concepts to solve problems on relations, functions, graph relations and functions and determine the gradient of straight lines and calculate distance between two points.</p> | <p>upon the completion of this topic, learners will:</p> <ol style="list-style-type: none"> 1. Discuss Relations 2. Distinguish between the various types of relations 3. Identify Functions 4. Change the subject of the relation 5. Graph linear functions 6. Find the Gradient of a straight line 7. Calculate the distance between two points 8. Graphs quadratic functions | <p><u>Relations and Functions</u></p> <ul style="list-style-type: none"> • Relations • Types of relations • Functions • Change of subject • Graph of linear functions • Gradient of a straight line • Distance between two points • Graphs of quadratic functions | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Discuss:</p> <ol style="list-style-type: none"> a. Relations <p>Distinguish</p> <ol style="list-style-type: none"> a. between the various types of relations <p>Identify</p> <ol style="list-style-type: none"> a. Functions of relations <p>Change the subject of the relation</p> <p>Graph</p> <ol style="list-style-type: none"> a. linear functions <p>Find:</p> <ol style="list-style-type: none"> a. the Gradient of a straight line <p>Calculate:</p> <ol style="list-style-type: none"> a. the distance between two points <p>Graphs:</p> <ol style="list-style-type: none"> a. quadratic functions | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p><u>COMPETENCIES</u></p> <p>Analytical skills Problem-solving skills</p> <p>ASSESSMENT</p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation |

- Assignments
- Research
- Quiz
- Test
- Exams

Semester One

GRADE: 10

Period V

TOPIC: **SIMULTANEOUS LINEAR EQUATIONS**

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES/ASSESSMENTS |
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| Learners are able to solve simultaneous linear equations using the methods of (i) graphs, (ii) elimination and (iii) substitution and they are able to solve word problems under | Upon the completion of this topic, learners will: 1. Solve simultaneous linear equations 2. Define and discuss Truth sets for simultaneous linear relations 3. Use of graph 4. Identify elimination | Simultaneous linear equations <ul style="list-style-type: none"> • Simultaneous linear equations • Truth sets for simultaneous linear relations • Use of graph • Elimination • Discuss substitution | <u>Inclusive and Differentiated activities</u> Individual seat work or work in mixed groups, according to abilities, gender and learning styles. Solve: a. simultaneous linear equations Define and discuss: Truth sets for simultaneous linear | <u>A. Primary Text</u> <i>Mathematics for Senior High School (Books 1,2 & 3) (Pearson)</i> <u>B. Secondary Texts</u> | EXPECTED COMPETENCES: <ul style="list-style-type: none"> • Analytical skills • Problem-solving skills ASSESSMENT <u>STRATEGIES:</u> Can be used to check |

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| this topic. | <p>5. Discuss substitution</p> <p>6. Solve more Word Problem in simultaneous linear equations</p> | Word Problem in simultaneous linear equations | <p>Solve simultaneous equations by:</p> <p>a. elimination</p> <p>b. Substitution</p> <p>c. graph</p> <p>Solve :</p> <p>a. more Word Problem in simultaneous linear equations</p> | | <p>competences. Select relevant options:</p> <p>-Attendances</p> <p>-Oral questions and Answers</p> <p>-Class Assignment and Participation</p> <p>-Observation</p> <p>-Assignments</p> <p>-Research</p> <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
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Semester

Two

GRADE: 10
Period V
Topic Vector in a plane

| <i>LEARNING OUTCOMES</i> | <i>OBJECTIVES</i> | <i>CONTENTS</i> | <i>ACTIVITIES</i> | <i>MATERIALS/ RESOURCES</i> | <i>COMPETENCES/ASSESSMENTS</i> |
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| <p>Learners are able to apply concepts to identify the types of vector quantities,, determine the magnitude and direction of vector, perform basic operations (addition, subtraction and multiplication) on vectors</p> | <p>upon the completion of this topic, learners will:</p> <ol style="list-style-type: none"> 1. Discuss the Types of vector quantities 2. Distinguish between scalar and vector quantities 3. Magnitude and direction of vector 4. Add and subtract vector 5. Multiply the vector by a scalar | <p>Vector in a plane</p> <ul style="list-style-type: none"> • Types of vector quantities • scalar and vector quantities • Magnitude and direction of vector • Addition and subtraction of vector <p>scalar multiplication</p> | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Discuss:</p> <p>a. the Types of vector quantities</p> <p>Distinguish:</p> <p>a. between scalar and vector quantities</p> <p>Calculate:</p> <p>a. Magnitude and direction of vector</p> <p>Add and subtract :</p> <p>a. vector</p> <p>Multiply:</p> <p>a. vector by a scalar</p> | <p><u>A. Primary Text</u></p> <p>Mathematics for Senior</p> <p>High School (Books 1,2 & 3) (Pearson)</p> <p><u>B. Secondary Texts</u></p> | <p><u>EXPECTED COMPETENCES:</u></p> <ol style="list-style-type: none"> 1. Analytical Skills 2. Problem-solving skills <p>ASSESSMENTS</p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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Semester
Two

GRADE: 10
Period V1
TOPICS: Rigid Motion

| LEARNING OUTCOMES | OBECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCIES/ASSESSMENTS |
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| <p>Learners are able to apply concepts to rigid motion in drawing its image using the methods of (i)translation and (ii) reflection and determine its symmetry</p> | <p>upon the completion of this topic, learners will:</p> <ol style="list-style-type: none"> 1. Discuss and draw rigid motion 2. Draw and Translate images to other position 3. Identify and explain reflection of object in the mirror line 4. Construct symmetry object | <p><u>Rigid Motion</u></p> <ul style="list-style-type: none"> • Rigid motion • Translation • Reflection • Symmetry | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Discuss and draw:</p> <ol style="list-style-type: none"> a. rigid motion <p>Draw and Translate:</p> <ol style="list-style-type: none"> a. images to other position <p>Identify and explain:</p> <ol style="list-style-type: none"> a. reflection of object in the mirror line <p>Construct :</p> <ol style="list-style-type: none"> a. symmetry object | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p><u>EXPECTED COMPETENCES</u></p> <ol style="list-style-type: none"> 1. Analytical skills 2. Problem-solving 3. Creativity and innovation skills <p>ASSESSNEBT</p> <p>STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation |

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**Semes
ter Two**

GRADE: 10

Period: V1

**TOPICS: A. STATISTICS,
B, RATIO AND RATES
C. PERCENTAGES**

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCE S/ASSESSMENT S |
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| Learners are able demonstrate logical reasoning in solve daily life problems Student will use the HIV, STIs data and use the statistical approach to explain | Upon the completion of these topics, learners will: 1. Define and discuss Statistics 2. Construct Frequency table 3. Discuss Graphical display | 1. Statistics 2. Ratio and Rates 3. Percentages <ul style="list-style-type: none"> • Statistics • Define statistical concepts • Frequency tables and histograms. Measures of | <u>Inclusive and Differentiated activities</u> Individual seat work or work in mixed groups, according to abilities, gender and learning styles. Define and discuss | <u>A. Primary Text</u> <i>Mathematics for Senior</i> <i>High School (Books 1,2 & 3) (Pearson)</i> | EXPECTED COMPETENCES 1. Analytical skills 2. Problem-solving skills |

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| <p>the effect of HIV and STIs on the population and solve problems relating to scale drawing, ratio ,rates and percent,</p> | <p>4. Discuss and define Averages 5. Define and discuss Ratio and rates 6. Define and analyze scales and scale drawing 7. Demonstrate the use of rates in problem solving 8. Define and discuss travel graphs and conversion graphs 9. Identify and discuss percentages 10. Solve problems Using percentages</p> | <p>central tendency (mode, median and mean), stern and leaf plot</p> <ul style="list-style-type: none"> • Graphical displays • Box and whisker plot <ul style="list-style-type: none"> • Averages • Ratio • Scale drawing Rates • Using rates Travel graphs and conversion graphs • Percentages Using percentages • Define statistical concepts • Frequency tables and histograms. Measures of central tendency (mode, median and mean), stern and leaf plot • Box and whisker plot | <p>a. Statistics b. Frequency table c. Graphical display d. Averages e. Ratio and rates</p> <p>Discuss and analyze : a. scales and scale drawing</p> <p>Demonstrate: a. the use of rates in problem solving</p> <p>Define and discuss : a. travel graphs and conversion graphs</p> <p>Identify and discuss a. percentages</p> <p>Solve problems: a. Using percentages</p> <p>Define and explain the concepts of statistical terminologies and their effect on the population Let students use given data or hypothetical figure representing HIV data to make a frequency table Let student use the frequency table to construct a histogram Let student use the data to find the central tendency</p> | <p><u>B. Secondary Texts</u> Population data</p> | <p>3. Creativity and innovation skills</p> <p>ASSESSMENT STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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| | | | (mean, mode, median) From the data, let student construct the stem and leaf plot Let student use the data to construct the box and whisker plot | | |
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SEMESTER one

PERIOD: 1
GRADE: 11
TOPIC: **MODULAR ARITHMETIC**

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION /COMPETENCIES |
|---|---|--|---|---|--|
| Learners are able to apply polygonal arithmetic and modular arithmetic and perform basic operations(addition, subtraction, multiplication and division) on modular | : Upon the completion of this topic learners will: 1. Define and discuss Polygonal arithmetic 2. Define and discuss Modular arithmetic 3. Define and discuss cyclic variables 4. Divide Using Modular | <ul style="list-style-type: none"> • Polygonal arithmetic • Modular arithmetic • Cyclic variables • Using Modular arithmetic | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Define and discuss</p> <ul style="list-style-type: none"> a. Polygonal arithmetic b. Modular arithmetic | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p><u>EXPECTED COMPETENCIES</u></p> <ul style="list-style-type: none"> 1. Analytical skills 2. Problem-solving skills 3. Organizational skills <p>ASSESSMENT</p> <p>STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> |

| | | | | | |
|-------------|------------|--|--|--|--|
| arithmetic. | arithmetic | | c. cyclic variables Divide: a. Using Modular arithmetic | | -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
|-------------|------------|--|--|--|--|

SEMESTER one

PERIOD: 1
GRADE: 11
TOPIC: **INDICES AND LOGARITHMS**

| LEARNING OUTCOMES | CONTENTS | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION /COMPETENCIES |
|--------------------------|-----------------|-----------------|-------------------|-----------------------------|---------------------------------|
|--------------------------|-----------------|-----------------|-------------------|-----------------------------|---------------------------------|

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| <p>Learners are able to apply to concepts to solve problems on indices, exponential growth, and apply logarithmic laws to solve problems</p> | <p>: Upon the completion of this topic learners will:</p> <ol style="list-style-type: none"> 1. Define and discuss Indices(notation, laws) 2. Define and discuss properties of indices 3. Define and discuss exponential growth 4. Discuss and solve negative Powers 5. Define and discuss properties of indices 6. Define and discuss rational powers 7. Define and discuss logarithms Apply the Logarithms functions to solve problems 8. Define and apply base ten logarithms 9. Solve logarithmic of numbers greater than 10 10. Solve logarithmic of numbers between 0 and 1 11. Define and discuss | <ul style="list-style-type: none"> • Indices • Exponential growth • Negative Powers • Properties of indices • Rational powers • Logarithms • Logarithms functions • Base ten logarithms • Logarithmic of numbers greater than 10 • Logarithmic of numbers between 0 and 1 • Laws of logarithms | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Define and discuss</p> <ol style="list-style-type: none"> a. Indices(notation, laws) b. exponential growth <p>Discuss and solve</p> <ol style="list-style-type: none"> a. negative Powers b. properties of indices c. rational power d. logarithms <p>Apply :</p> <ol style="list-style-type: none"> a. Logarithms functions to solve problems <p>Define and apply:</p> <ol style="list-style-type: none"> a. base ten logarithms <p>Solve</p> <ol style="list-style-type: none"> a. logarithmic of numbers greater than 10 b. Solve logarithmic of numbers between 0 and 1 <p>Define and discuss</p> <ol style="list-style-type: none"> a. laws of logarithms | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p><u>COMPETENCIES</u></p> <ol style="list-style-type: none"> 1. <u>Analytical skills</u> 2. <u>Problem solving skills</u> <p>ASSESSMENT STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test |
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| | laws of logarithms | | | | -Exams |
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PERIOD: 11

SEMESTER one

GRADE: 11
TOPIC: SURDS AND PERCENTAGES

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION /COMPETENCIES |
|--|--|---|--|---|--|
| <p>Learners are able to apply skills to solve problems on surds(simplifying, multiplying and dividing) and compute simple and compound interests, depreciation .</p> | <p>: Upon the completion of this topic learners will:</p> <ol style="list-style-type: none"> 1. Define and discuss surds 2. Simplify surds 3. Product and quotients of surds 4. Compound interest in relation to - Simple interest 5. Define and discuss Interest formulae 6. Define and discuss depreciation | <ul style="list-style-type: none"> • Surds • Simplifying surds • Product and quotients of surds • Compound interest in relation to simple interest • Interest formulae • Depreciation | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Define and discuss</p> <ol style="list-style-type: none"> a. Surds <p>Simplify</p> <ol style="list-style-type: none"> a. surds <p>Product and quotients of:</p> <ol style="list-style-type: none"> a. surds <p>Compound interest in relation to</p> <ul style="list-style-type: none"> - Simple interest <p>Define and discuss</p> <ol style="list-style-type: none"> a. Interest formulae b. depreciation | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p><u>EXPECTED COMPETENCES</u></p> <ol style="list-style-type: none"> 1. <u>Analytical skills</u> 2. <u>Problem-solving skills</u> <p><u>ASSESSMENT STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz |

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| | | | | | -Test -Exams |
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SEMESTER one

PERIOD: 111

GRADE: 11

TOPIC1: VARIATION

| LEARNIN GOUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION /COMPETENCIES |
|--|--|---|--|---------------------------------|-------------------------------------|
| Learners are able to apply skills to solve | Upon completion of this topic learners will: | <ul style="list-style-type: none"> • Direct Variation • Inverse | <u>Inclusive and Differentiated</u> | <u>A. Primary Text</u> | <u>EXPECTED COMPETENCES:</u> |

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| <p>problems on direct, inverse, joint and partial variation.</p> | <ol style="list-style-type: none"> 1. Define and solve direct Variation 2. Define and solve Inverse Variation 3. Define and solve Joint variation 4. Define and solve partial variation | <p>Variation</p> <ul style="list-style-type: none"> • Joint variation • Partial variation | <p><u>activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Analyze and solve</p> <ol style="list-style-type: none"> a. direct Variation b. Inverse Variation c. Joint variation d. partial variation | <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <ol style="list-style-type: none"> 1. Analytical skills 2. Problem-solving skills <p>ASSESSMENTS</p> <p>,STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
|--|---|---|---|--|--|

SEMESTER one

PERIOD: 111
GRADE: 11
TOPIC 11: QUADRATIC FUNCTIONS AND EQUATIONS

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES/ASSESSMENTS |
|---|--|--|---|---|--|
| <p>Learners are able to apply concepts to graph quadratic functions and equations, solve quadratic equations by the following methods: (I) factorization, (ii) by completing the squares and using (iii) quadratic formula and solve word problems on quadratic equations</p> | <p>: Upon the completion of this topic learners will:</p> <ol style="list-style-type: none"> 1. Define and discuss quadratic functions 2. Define and Solve quadratic equations 3. Solving quadratic equations by factorization 4. Solving Quadratic problems 5. Solving quadratic equations by completing the square (optional) 6. Draw quadratic graphs 7. Solving quadratic equations graphically | <ul style="list-style-type: none"> • Quadratic functions • Quadratic equations • Solving quadratic equations by factorization • Quadratic problems • Solving quadratic equations by completing the square (optional) • Quadratic graphs • Solving quadratic equations graphically | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Define and discuss</p> <ol style="list-style-type: none"> a. quadratic functions <p>Define and Solve:</p> <ol style="list-style-type: none"> a. quadratic equations <p>Solving:</p> <ol style="list-style-type: none"> a. quadratic equations by factorization b. Quadratic problems c. quadratic equations by completing the square (optional) <p>Draw:</p> <ol style="list-style-type: none"> a. quadratic graphs <p>Solving:</p> <ol style="list-style-type: none"> a. quadratic equations graphically | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p><u>COMPETENCIES</u></p> <ol style="list-style-type: none"> 1. Analytical skills 2. Problem-solving skills <p><u>ASSESSMENT</u></p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research |

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| | | | | | -Quiz -Test -Exams |
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SEMESTER ONE

PERIOD: 1V

GRADE: 11

TOPIC: MEASURATION

| LEARNING OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION /COMPETENCIES |
|--|---|---|--|---|--|
| <p>Learners are able to demonstrate skills in constructing circle as locus, constructing tangents to circle, identifying and constructing alternate segment. They are able calculate perimeter of plane shapes, calculate area of (i) rectangle,(ii) square (iii)triangle and (iv) parallelograms and compute the arcs and sectors of a circle</p> | <p>MEASURATION: Upon the completion of this topic learners will:</p> <ol style="list-style-type: none"> 1. Discuss and construct the circle as a locus 2. State and use circle theorems 3. Identify and construct tangents to a circle 4. Identify and construct alternate segment 5. Calculate perimeter of plane shapes 6. Find the area of rectangles and square 7. Find the area of parallelograms 8. Find the area of triangles 9. Discuss and construct Circles 10. Calculate the arcs and sectors | <ul style="list-style-type: none"> • The circle as a locus • Circle theorems • Tangents to a circle • Alternate segment • Perimeter of plane shapes • Area of rectangles and square • Area of parallelograms • Area of triangles • Circles • Arcs and sectors | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Discuss and construct</p> <ol style="list-style-type: none"> a. the circle as a locus <p>State and use</p> <ol style="list-style-type: none"> a. circle theorems <p>Identify and construct:</p> <ol style="list-style-type: none"> a. tangents to a circle a. alternate segment <p>Calculate</p> <ol style="list-style-type: none"> a. perimeter of plane shapes <p>Find the area</p> <ol style="list-style-type: none"> a. rectangles and square b. parallelograms c. triangles <p>Discuss and construct:</p> <ol style="list-style-type: none"> a. Circles <p>Name the part</p> <ol style="list-style-type: none"> a. Circle <p>Calculate:</p> <ol style="list-style-type: none"> a. arcs and sectors | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior</i></p> <p><i>High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p><u>EXPECTED COMPETENCES:</u></p> <ul style="list-style-type: none"> • Analytical skills • Problem-solving skills • Creativity and innovation skills <p><u>ASSESSMENT STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research |

-Quiz
-Test
-Exams

SEMESTER one

PERIOD: V
GRADE: 11
TOPIC : TRIGONOMETRY

| Learning OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES/ASSESSMENTS |
|---|---|---|---|---|--|
| Learners are able to demonstrate analytical skills to solve trigonometric problems. | Upon the completion of this topic learners will: <ol style="list-style-type: none"> 1. Define and compute angle of slope and gradient 2. Define and compute the tangent of an angle 3. Find heights and distances 4. Compute problems involving rotation 5. Define and compute cosine of an angle 6. Define and compute sine of an angle 7. Discuss the uses of trigonometry | <ul style="list-style-type: none"> • Angle of slope and gradient • The tangent of an angle • Finding heights and distances • Problems involving rotation • Cosine of an angle • Sine of an angle • Uses of | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and learning styles.</p> <p>Define and compute:</p> <ul style="list-style-type: none"> • angle of slope and gradient • tangent of an angle <p>Find: heights and distances, apply the use of trigonometric ratios.</p> <p>Compute: problems involving rotation</p> <p>Define and compute</p> | <p><u>A. Primary Text</u></p> <p><i>Mathematics for Senior High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> | <p><u>EXPECTED COMPETENCES</u></p> <ol style="list-style-type: none"> 1. Analytical skills 2. Problem-solving skills <p><u>ASSESSMENT</u></p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> |

| | | | | |
|--|---|--|--|---|
| <p>8. Calculate the value trigonometric ratios of 30°,60° and 45°</p> <p>9. Find the inverse of trigonometry ratio</p> <p>Angles of elevation and depression</p> | <p>trigonometry</p> <ul style="list-style-type: none"> • Trigonometric ratios of 30°,60° and 45° • Angles of elevation and depression | <ul style="list-style-type: none"> • cosine of an angle • sine of an angle <p>Discuss: uses of trigonometry</p> <p>Calculate:</p> <ul style="list-style-type: none"> • the value trigonometric • ratios of 30°,60° and 45° <p>Find: the inverse of trigonometry ratio</p> <p>calculate :angles of elevation and depression</p> | | <p>-Attendances</p> <p>-Oral questions and Answers</p> <p>-Class Assignment and Participation</p> <p>-Observation</p> <p>-Assignments</p> <p>-Research</p> <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
|--|---|--|--|---|

SEMESTER one

PERIOD: V1
GRADE: 11
TOPIC: **PROBABILITY**

| LEARNING OUTCOMES | CONTENTS | CONTENTS | ACTIVITIES | MATERIAL S/ RESOURCES | COMPETENCES/ASSESSMENTS |
|--|---|--|--|--|---|
| Learners are able to solve problems on probability determining | : Upon the completion of this topic learners will: 1. Define and discuss | <ul style="list-style-type: none"> • Probability • Relative frequency • Compound events • Union of events • Intersection of | <p><u>Inclusive and Differentiated activities</u></p> <p>Individual seat work or work in mixed groups, according to abilities, gender and</p> | <p><u>A. Primary Text</u></p> <p><i>Mathematics</i></p> | <p><u>EXPECTED COMPETENCES</u></p> <ol style="list-style-type: none"> 1. Analytical skills 2. Problems-solving |

| | | | | | |
|---|--|--|---|--|--|
| <p>relative frequency, calculate compound events, compute union of events and intersection of events and independent events</p> | <p>probability</p> <ol style="list-style-type: none"> 2. Determine the relative frequency 3. Calculate compound events 4. Compute Union of events 5. Compute intersection of events 6. Compute independent events | <p>events</p> <ul style="list-style-type: none"> • Review of the basic concepts of set, Venn, tree diagram, and contingency tables • Sample space and events of an experiment • The probability of an event (STIs, HIV, teenage pregnancy, rape, relationship) <p>The odds of an events</p> | <p>learning styles.</p> <p>Define and discuss</p> <ol style="list-style-type: none"> a. probability <p>Determine:</p> <ol style="list-style-type: none"> a. the relative frequency <p>Calculate:</p> <ol style="list-style-type: none"> a. compound events <p>Compute:</p> <ol style="list-style-type: none"> a. Union of events b. intersection of events c. independent events <p>Brainstorm on the definition and concepts associated with probabilities, e.g. sample space, event, odds for, odds against, simple events mutually exclusive events etc.</p> <p>From a sample space using the following as events: STI, HIV, teenage pregnancy, rape relationship etc.</p> <p>Find the probability of each event in activity two. e.g., represent each of the events with figure obtained from the data, and then find the probability of each.</p> <p>Construct a sex network</p> <p>Use the sex network to show how STI and HIV can be spread from person to another in a matrix.</p> <p>Using a deck of cards as sample space of population and determining the probability of contracting STI from the given sample spaces</p> | <p><i>for Senior High School (Books 1,2 & 3) (Pearson)</i></p> <p><u>B. Secondary Texts</u></p> <p>Population Data</p> | <p>skills</p> <p>ASSESSMENT</p> <p>STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
|---|--|--|---|--|--|

SEMESTER ONE

GRADE 12

PERIOD 1

TOPIC: SEQUENCE AND SERIES

| OUTCOME S | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|---|---|--|---|--|---|
| Learners are able to apply concepts to solve problems on arithmetic sequence and geometric progression, calculate the | Upon completion of this topic, learners will: 1. Define and identify sequence 2. Define and , discuss arithmetic sequence or arithmetic | 1. Definition of arithmetic Sequence(progression 2. State the formula for arithmetic sequence and use it to solve problems 3. Definition of geometric sequence (progression) 4. State its formula and | Inclusive and Differentiated activities Individual seat work or work in mixed groups according to gender, abilities | Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson Supplementary books | <u>EXPECTED COMPETENCES:</u> 1. Organizational skill 2. Analytical skills 3. Problem-solving skills ASSESSMENT <u>STRATEGIES:</u> |

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|--|---|---|--|--|---|
| <p>sum of arithmetic progression and geometric progression</p> | <p>progression</p> <p>3. State the formula for arithmetic sequence or arithmetic progression and use it to solve problems</p> <p>4. Define and discuss geometric sequence or geometric progression</p> <p>5. State the formula for geometric sequence or geometric progression and use it to solve problems</p> <p>6. State the equation or formula for finding the sum of an arithmetic series and use the formula to solve problems</p> <p>7. State the</p> | <p>us it to solve problems</p> <p>5. State the formula for finding the sum of arithmetic series and use it to solve problems</p> <p>6. State the formula for finding the sum of geometric series and use it to solve problems</p> | <p>and learning styles</p> <p>Exercises/Assignment</p> <p>Define and discuss</p> <p>1. Assist learners to define and discuss arithmetic sequence and geometric sequence? Why are they called arithmetic progression and geometric progression? State and discuss</p> <p>2. State and discuss the formulae for A.P.(Arithmetic Progression) and geometric progression and use them</p> | | <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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| | formula for finding the sum of a geometric series and it to solve problems | | to solve basic problems. 3. Assist learners to state the formulae for finding the sum of arithmetic series and geometric series and use them to solve problems | | |
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SEMESTER ONE

Grade 12

Period 1

TOPIC: BEARINGS

| OUTCOMES | CONTENTS | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION |
|--|---|---|---|---|--|
| Learners are able to apply concepts to interpret bearing as direction, represent a bearing of one point from | Upon completion of this topic, learners will 1. Interpret bearing as direction of one point from | 1. Definition of bearings 2. Distance Bearing Problems | Inclusive and Differentiated Activities Individual seat work or work in mixed groups according to gender, abilities and learning styles Define and discuss 1. Define and discuss bearing | Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson | Competencies 1. Analytical skill 2. Problem solving skill 3. Creativity and innovat skills ASSESSMENT |

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|---|---|--|--|--|---|
| <p>another as (r, q) and calculate the magnitude and angle of a bearing</p> | <p>another</p> <p>2. Write bearing of one point from another as (r, q)</p> <p>3. Find the bearing of a point A from another point, given the bearing of B .</p> | | <p>2. Assist learners use a graph sheet and Cartesian coordinate system and label the positive x axis as E (East), negative x axis as W(West) , positive y axis as N(North) and the negative y axis as S (South). Use any given angle, locate the direction by measuring the angle from the N in a clockwise direction</p> <p>3. Use graphical method or trigonometry to solve problems involving distance and bearing</p> | <p>Supplementary books</p> <p>Mathematical set, graph sheets</p> | <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exam |
|---|---|--|--|--|---|

SEMESTER ONE

Grade 12
 Period 1

TOPIC: CONSTRUCTIONS

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | EVALUATION |
|--|---|---|---|---|---|
| <p>Learners are able to apply the concepts to construct angles, triangles and parallelograms and employ loci to construct geometric figure</p> | <ol style="list-style-type: none"> 1. Construction without measurement 2. Construction of angles 3. Construction of triangles and quadrilaterals 4. Locus 5. Some special loci | <ol style="list-style-type: none"> 1. Construction without measurement 2. Construction of angles 3. Construction of triangles and quadrilaterals 4. Locus 5. Some special loci | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles.</p> <ol style="list-style-type: none"> 1. Use your set square with one edge against the given line. Place a ruler against another edge of set square. Slide the set square to its required position and the line 2. Use your compass and ruler to construct an angle bisector 3. Use your pair of compass and ruler to construct parallel lines without using a set square. 4. Use your pair of compass and ruler to construct angles, triangles, quadrilaterals 5. Define, discuss and identify locus and some special loci: mediator ,angle bisector, and parallel line | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> <p>Mathematical set, graph sheets</p> | <p>Competencies</p> <ol style="list-style-type: none"> 1. Analytical skills 2. Creativity & innovation skills <p>ASSESSMENT</p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz |

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| | | | | | -Test -Exams |
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SEMESTER ONE

Grade: 12

Period: II

TOPIC 1: STATISTICS I

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETENCES/ASSESSMENTS |
|--|---|---|---|---|--|
| Learners are able to demonstrate concepts by representing data in graphical forms: (bar chart and pie chart, define grouped data and construct a frequency table, calculate the central tendencies of grouped data and | <p>Upon completion of this topic, learners will:</p> <ul style="list-style-type: none"> • Express data in graphical forms using bar chart and pie chart • Define grouped data and construct the frequency table • Calculate the mean and mode of grouped data • Calculate the Median • Construct the cumulative frequency curve and | <ol style="list-style-type: none"> 1. Bar Chart and pie chart 2. Grouped data 3. Mean and mode 4. Median 5. Cumulative frequency 6. Quartiles and percentiles | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles.</p> <p style="text-align: center;">Assignments/Exercises</p> <ol style="list-style-type: none"> 1. Go to any nearby health center and collect data on malaria, typhoid and measles for a particular month and construct bar and pie charts; 2. Define, discuss and identify | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books Mathematical</p> | <p>EXPECTED COMPETENCES:</p> <ol style="list-style-type: none"> 1. Analytical skills 2. Problem-solving skills 3. Organizational skills <p>ASSESSMENT</p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options: -Attendances</p> |

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| construct the cumulative frequency curve and compute the quartiles and percentiles. | <ul style="list-style-type: none"> Calculate the quartiles and percentiles | | of grouped data 3. Construct a cumulative frequency table using the population data and determine the mean and mode 4. Determine the median 5. Construct a cumulative frequency curve and determine the quartiles and percentiles from the graph. | set, graph sheets | -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
|---|---|--|--|-------------------|---|

SEMESTER ONE

Grade: 12
Period: II

TOPIC 11: STANDARD DEVIATION

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|--|--|---|---|---|--|
| Learners are able to understand the spread | Upon completion of this topic, learners will | <ol style="list-style-type: none"> Dispersion Deviation Standard | <u>Inclusive and Differentiated Learning</u> Individual seat work | Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson | EXPECTED COMPETENCES: <ol style="list-style-type: none"> Analytical skills Problem-solving skills |

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| <p>of data and apply skills to compare and analyze two or more sets of data. Skills are applied in almost all disciplines in life.</p> | <ol style="list-style-type: none"> 1. Define, discuss and identify dispersion 2. Define and discuss and calculate deviation 3. Define and calculate standard deviation | <p>d deviation</p> | <p>or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <p style="text-align: center;">Define and discuss</p> <ol style="list-style-type: none"> 1. Define and discuss dispersion. How can dispersion be measured more accurately. 2. Use a given data to demonstrate dispersion and find the range, the interquartile range and semi interquartile range <p>Define and discuss</p> <ol style="list-style-type: none"> 3. Assist learners define and discuss deviation, variance | <p>Supplementary books</p> | <p>ASSESSMENT</p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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| | | | 4. Assist learners define and discuss standard deviation and variance .State the formula for standard deviation and apply same to a given data and find the standard deviation. What does the standard deviation say or the mean> | | |
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SEMESTER ONE

Grade: 12
 Period: II

TOPIC 111: INTERPRETATION OF LINEAR AND QUADRATIC GRAPHS

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITTIES | MATERIA LS/RESOU | COMPETENCES/AS ESSMENTS |
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| Learners are able to demonstrate analytical and problems solving skills to graphs and interpret them and make informed decisions. Skills are applicable in the business world to determine cost, revenues, etc. | Upon completion of this topic, learners will 1. solve simultaneous equations, one linear and one quadratic. Using graphs. 2. use a quadratic graph to solve related equations 3. find the range of values of x for which y is increasing or decreasing 4. find the range of values of x for which y is positive or negative | 1. Graphing of simultaneous equations: one linear and one quadratic 2. Using quadratic graph to solve problems 3. Finding the range of values of x for which y is increasing or decreasing 4. Finding the range of values of x for which y is positive or negative | <u>Inclusive and Differentiated Learning</u> Individual seat work or work in mixed groups according to gender, abilities and learning styles Assignments/Exercises 1. Assist learners to use a graph sheet, and graph a given linear and quadratic equations in the same Cartesian coordinate system. Mark the points where the two graphs meet (intersect). The coordinates at the points of intersection are solutions for the two equation. Substitute the coordinates in both equations. Do they satisfy both equations? 2. Using the plotted graph, find the range of values of x for which y is increasing and find the values of x for which y is decreasing 3. Find the range of values of x for which y is positive or negative | Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson Supplementary books Graph sheets, rulers | EXPECTED COMPETENCES 1. Problem solving skill 2. Analytical skill ASSESSMENT STRATEGIES: Can be used to check competences. Select relevant options: -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz |

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| | | | | | -Test -Exams |
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SEMESTER ONE

Grade: 12

Period: II

TOPIC 1V: MENSURATION 2

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|--|---|--|--|--|---|
| Learners are able to apply the basic concepts to calculate the surface areas and volumes of these geometric figures: prisms, cones, pyramids, sphere. They are able to also calculate the distance given along the latitude and the longitude. | Upon completion of this topic, learners will 1. Calculate the surface area of prisms; 2. Calculate the volume of prisms; 3. Calculate the total surface of a cone 4. Calculate the volume of a cone; 5. Calculate total surface area of pyramids; 6. Calculate the volumes of a pyramids 7. Calculate the surface area of a sphere 8. Calculate the volume of a sphere 9. Calculate the distance | 1. Calculate the surface area and volume of prisms 2. Calculate the total surface area and volume of a cone 3. Calculate total surface area and volumes of pyramids 4. Calculate the surface area and volume of a sphere 5. Calculate the distance | <u>Inclusive and Differentiated Learning</u> Individual seat work or work in mixed groups according to gender, abilities and learning styles Assignments/ Exercises Define and discuss 1. Assist learners to define and discuss | Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson Supplementary books Graph sheets, rulers | EXPECTED COMPETENCES: 1. Analytical skills 2. Problem-solving skills ASSESSMENT <u>STRATEGIES:</u> Can be used to check competences. Select relevant options: -Attendances -Oral questions and Answers -Class Assignment and Participation |

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| | <p>along a given latitude and longitude</p> | <p>along a given altitude and longitude</p> | <p>following terms: prisms, surface area, volume, cone, sphere, latitude and longitude</p> <p>Given a prism, find the areas of all its faces and add them to obtain the total surface area.</p> <p>Multiply the area of the cross section by the length to get the volume of the prism.</p> <p>Use the appropriate formulae to calculate the surface areas and volumes of the following: cone, pyramids, and sphere.</p> <p>Calculate the distance along a given latitude and longitude.</p> | | <ul style="list-style-type: none"> -Observation -Assignments -Research -Quiz -Test -Exams |
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SEMESTER ONE

Grade: 12
Period: III

TOPIC 1: LOGICAL REASONING

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/ RESOURCES | COMPETEN SSESSMENT |
|---|---|---|---|---|--|
| Learners are able to apply concepts to identify a true or false statement, form negation of simple statements, draw conclusion using implication, | : Upon completion of this topic, learners will 1. Identify and form true or false statements 2. Form the negation of simple statements 3. Draw conclusions using the | 1. Statements 2. Implication 3. Converse 4. Equivalence 5. Negation Valid argument | <u>Inclusive and Differentiated Learning</u> Individual seat work or work in mixed groups according to gender, abilities and learning styles Assignments /Exercises View several statements given by the teacher. Identify which statements are true and which are false and why? | Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson | EXPECTED COMPETEN 1. Analytical 2. Creativity innovation ASSESSMEN <u>STRATEGIE</u> |

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| deduce equivalent implication from a given implication and use a Venn diagram to determine the validity or otherwise of implication or conclusion | <p>implication sign</p> <p>4. Deduce an equivalent implication from a given implication</p> <p>5. Use Venn diagrams to determine the validity or otherwise of implication or conclusions</p> | | <p>Assist learners discuss statements which are both open and closed statements and state examples.</p> <p>Define and discuss</p> <p>Assist learners define and discuss implication and illustrate them</p> <p>Assist learners draw conclusions from the sign of implication.</p> <p>Assist learners deduce an equivalent implication from a given implication</p> <p>Assist learners use Venn diagrams to determine the validity or otherwise of implication or conclusions</p> | Supplementary books | <p>Can be used to competences. S relevant options</p> <p>-Attendances</p> <p>-Oral questions Answers</p> <p>-Class Assignm and Participatio</p> <p>-Observation</p> <p>-Assignments</p> <p>-Research</p> <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
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SEMESTER ONE

Grade: 12

Period: II1

TOPIC 11: PERCENTAGES

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|-------------------------------|----------------------|-------------------------|--|----------------------------|--------------------------------|
| Learners are able to identify | : Upon completion of | 1.Taxation 2.Banking | <u>Inclusive and Differentiated Learning</u> | Prescribed textbook: | EXPECTED |

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| <p>business partnerships , calculate share interest or profit in a given ratio, calculate interest on saving and loans, payments using hire purchase.</p> <p>They are able to calculate taxes on goods and services, VAT on goods and services and utility bills of water, telephone and electricity.</p> | <p>this topic, learners will</p> <ol style="list-style-type: none"> 1. Identify business partnerships and the way they function 2. Calculate share interest or profit in a given ratio 3. Calculate interest on savings and loans 4. Calculate payment using hire purchase 5. Calculate taxes paid on goods and services 6. Calculate and explain the value added tax (VAT) 7. Calculate electricity, water and telephone bills | <p>transaction .Hire purchase Household bills Partnership business</p> | <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <ol style="list-style-type: none"> 1. Visit a banking institution and let authority discuss the types of transactions that banks handle. <p>Discuss</p> <ol style="list-style-type: none"> 2. Discuss your findings. 3. Define and discuss Assist learners define and discuss taxation, Calculate taxes paid on goods and services 4. Assist learners explain and calculate the value added tax (VAT hire purchase and relate it to “set pay” household bills(water and electricity bills) and partnership business. | <p>Mathematics for Senior High Schools Students’ Book 3& 4 by Pearson</p> <p>Supplementary books</p> | <p>COMPETENCES:</p> <ol style="list-style-type: none"> 1. Analytical skills 2. Problem-solving skills <p><u>ASSESSMENTS</u></p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test |
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SEMESTER ONE

Grade: 12
Period: III

Topic 111: Rigid Motion 2 and Enlargement

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|--|---|--|---|--|---|
| Learners are able to apply concepts to rigid motion and enlargement to determine image of an object under rotation, enlarge or reduce the size of the image based on K (magnifying factor), do negative enlargement, movement | <p>Upon the completion of this topic, learners will of an object</p> <ol style="list-style-type: none"> Find the image of an object under rotation Carry out an enlargement of a plane shape given a scale factor Identify a scale drawing as an enlargement/reduction of a plane figure(shape) Establish the relationship between the areas and volumes of | <ol style="list-style-type: none"> Rotation and its measurement Enlargement <ol style="list-style-type: none"> Magnification and reduction Negative enlargement Movements and enlargement Perspective and similarity Similar triangle Similar areas and volumes | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <ol style="list-style-type: none"> Take a graph sheet and plot the given three coordinates: $A(a, b), B(a_1, b_1), C(a_2, b_2)$ by your teacher. You should have a triangle. Rotate this triangle thru 90°, 180° anticlockwise, etc. and discuss the positions and sides of the images generated. Given a scale factor enlarge the triangle. Define and discuss the following: magnification & reduction, Negative enlargement, | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> <p>Graph sheets,</p> | <p>EXPECTED COMPETENCES:</p> <ol style="list-style-type: none"> Analytical skills Problem-solving skills <p><u>ASSESSMENT</u></p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences</p> <p>Select relevant options:</p> <p>-Attendances</p> <p>-Oral questions and</p> |

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| perspective, similar triangles, areas and volumes | plane figures and solids and their images | | movement & enlargements, perspective and similarity. Similar triangles, similar areas and volumes and demonstrate them graphically. | mathematical sets | Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
|---|---|--|---|-------------------|---|

SEMESTER ONE

Grade: 12

Period: III

Topic 1V: Trigonometry 2

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|----------------------------------|---|-----------------------------------|---|----------------------|------------------------------|
| Learners are able to demonstrate | 1. Graphs of simple trigonometric functions | 3. Graphs of simple trigonometric | <u>Inclusive and Differentiated Learning</u> | Prescribed textbook: | EXPECTED COMPETENCES: |

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| <p>and apply concepts in graphing trigonometric functions , determine the maximum and minimum values of the graphs and interpret said graphs.</p> | <ul style="list-style-type: none"> • Maximum and minimum values <p>2. Drawing and interpretation of trigonometric functions</p> | <p>functions</p> <ul style="list-style-type: none"> • Maximum and minimum values <p>1. Drawing and interpretation of trigonometric functions</p> | <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <p>1. Draw the graphs of $\sin\theta$ and $\cos\theta$, for $0^\circ \leq \theta \leq 360^\circ$, . Are the two graphs the same? If not why? Identify the maximum and minimum values of the graphs.</p> <p>2. Interpret the graphs</p> | <p>Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> <p>Graph sheets , rulers</p> | <p>1. Analytical skills 2. Creativity and innovation skills 3. Problem-solving skills</p> <p>STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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SEMESTER TWO

Grade 12
Period IV
TOPIC NUMBERS AND NUMERATION

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/R ESOURCES | COMPETENCES /ASSESSMENTS |
|--|--|--|--|---|---|
| <p>Learners are able to apply concepts and solve problems in number bases, modular arithmetic, prove identities, express numbers in standard form and solve problems using powers and roots.</p> | <p>Upon completion of this topic, learners will:</p> <ol style="list-style-type: none"> 1. Review real numbers with emphasis on (whole numbers, factors of whole numbers, multiples of whole numbers, prime numbers and prime factorization of whole numbers, integers, ratio of two whole numbers and rational numbers) 2. Convert from base ten to other bases and verse versa. 3. Solve problems in modular arithmetic 4. Demonstrate identities in Commutative property, Associative property, Distributive property, Binomial expressions and properties of negatives 5. Work and solve problems I using powers and roots | <ol style="list-style-type: none"> 1. Review real numbers 2. Number bases 3. Modular arithmetic 4. Identities 5. Powers and roots | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <ol style="list-style-type: none"> 1. Assist learners to review real numbers considering learning objective 2. Assist learners to convert from base ten to other bases and verse versa <p>Discuss</p> <ol style="list-style-type: none"> 3. Assist learners to discuss modular arithmetic and solve problems in modular arithmetic 4. Assist learners prove the identities in commutative property, Associative property, Distributive property, binomial expressions 5. Assist learners represent very small or large numbers in standard form, solve problems using powers and roots | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> | <p>EXPECTED COMPETENCES</p> <p>:</p> <ol style="list-style-type: none"> 1. Analytical skills 2. Problem-solving skills <p><u>Assessment</u></p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation |

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| | | | | | | -Assignments -Research -Quiz -Test -Exams |
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SEMESTER TWO

Grade 12
 Period IV
 TOPIC SETS AND LOGIC

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS /RESOURCES | COMPETENCES/ASSESSMENTS |
|---|--|---|--|---|--|
| Learners are able to use sets in logic. | Upon completion of this topic, learners will : 1. Define sets and use set notation , 2. Define and apply subsets 3. Discuss | 1. Definition of sets 2. Subsets 3. Types of sets 4. Venn diagrams 5. Operations on sets 6. Properties of set operations | <p><u>Inclusive and Differentiated Learning</u></p> Individual seat work or work in mixed groups according to gender, abilities and learning styles | Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson | <p>EXPECTED COMPETENCES</p> 1. Analytical skills 2. Problem-solving skills |
| | | | <p>Assignments/Exercises</p> 1. Assist learners define sets and use set notation. 2. Define and apply | | <p>ASSESSMENTS</p> <p>STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> |

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| | <p>Universal set, equal sets, equivalent sets and listing the elements of a set</p> <p>4. Discuss Venn diagram and it to illustrate the following operations on sets: intersection of sets, disjoint sets, union of sets, and complement of a set</p> <p>5. Discuss properties of set operations</p> <p>6. Solve two sets and three sets problems using Venn diagram</p> <p>7. Review open statements, and implication and apply them using sets</p> | <p>7. Problem solving</p> <p>8. Review open statements and implications</p> | <p>Assist learners define subsets and solve problems on subsets.</p> <p>Define and illustrate</p> <p>3. Assist learners define and illustrate types of sets(finite sets, infinite sets, Universal set, equal sets, equivalent sets, empty set)</p> <p>Discuss and apply</p> <p>4. Assist learners discuss Venn diagram and use it to illustrate the following operations on sets:</p> <ol style="list-style-type: none"> Intersection of sets Disjoint sets Union of sets and Complement of a set. <p>5. Discuss and illustrate Assist learners discuss and illustrate properties (commutative, Associative and distributive properties) of set operations.</p> <p>6. Assist learners to solve problems.</p> <p>7. Review open statements and implication and pply them using sets.</p> | <p>Supplementary books</p> | <p>-Attendances</p> <p>-Oral questions and Answers</p> <p>-Class Assignment and Participation</p> <p>-Observation</p> <p>-Assignments</p> <p>-Research</p> <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
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SEMESTER TWO

Grade 12
Period IV

TOPIC RELATIONS AND FUNCTIONS, MAPPINGS, RATIO, PROPORTION AND VARIATION

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|---|--|--|---|---|--|
| Learners are able to apply concepts to solve problems on relations, functions and mapping, ratio and proportion and variation | <p>Upon completion of this topic, learner will</p> <ol style="list-style-type: none"> 1. Define and discuss relations and functions 2. Numerical mappings 3. Solve problems on relations, functions | <ol style="list-style-type: none"> 1. Relations and functions 2. Numerical mappings 3. Ratio and proportion 4. variation | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <p style="text-align: center;">Define and discuss</p> <ol style="list-style-type: none"> 1. Assist learners define and | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> | <p>EXPECTED COMPETENCES:</p> <ol style="list-style-type: none"> 1. Analytic skills 2. Problem-solving skills <p>ASSESSMENT STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and |

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| | <p>and mappings</p> <p>4. Calculate ratio and proportion</p> <p>5. Define variation and solve problems on variation</p> | | <p>discuss relations, functions and mappings and solve simple problems</p> <p>Define and discuss</p> <p>2. Define and discuss ratio and proportion, solve problems on ratio and proportion</p> <p>Define and discuss</p> <p>3. Define variation and discuss the types of variation,(Direct variation, Inverse variation, Joint variation and partial variation)and solve simple problems on each of them-</p> | | <p>Participation</p> <p>-Observation</p> <p>-Assignments</p> <p>-Research</p> <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
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SEMESTER TWO

Grade 12
Period IV
Topic: Algebraic processes

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCIES/ASSESSMENT |
|-----------------|-------------------|-----------------|-------------------|----------------------------|--------------------------------|
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| <p>Learners are able to apply concepts to simplify algebraic expressions, factorize, carry substitution, solve equations & inequalities, quadratic equations, solve simultaneous linear equations and linear inequalities and perform linear programming.</p> | <p>: Upon completion of this topic, learners will</p> <ol style="list-style-type: none"> 1. Simplify algebraic expressions 2. Factorize algebraic expressions 3. Solve algebraic fractions 4. Substitution 5. Solve equations and inequalities 6. Quadratic equations 7. Solve Simultaneous linear equations 8. Solve Simultaneous linear inequalities 9. Formulae 10. Solve word problems | <ol style="list-style-type: none"> 1. Simplification 2. Factorization 3. Algebraic fractions 4. Substitution 5. Equations and inequalities 6. Quadratic equations 7. Simultaneous linear equations 8. Simultaneous linear inequalities 9. Linear programming 10. Formulae <p>Word problems</p> | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <ol style="list-style-type: none"> 1. Assist learners to simplify algebraic expressions by adding and subtracting like terms, multiply or expand and divide algebraic expressions. 2. Assist learners to factorize algebraic expressions using the following techniques: <ol style="list-style-type: none"> a. Common factors b. Factoring by grouping c. Factoring quadratic trinomials d. Difference of two squares e. Sum of two cubes f. Difference of two cubes <p>Assist learners perform the following operations:</p> | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> <p>Graph sheets, ruler and</p> | <p><u>EXPECTED COMPETENCES</u></p> <p>:</p> <ol style="list-style-type: none"> 1. Analytical skills 2. Problem solving skills <p><u>ASSESSMENT STRATEGIES</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignments and Participations -Observation -Assignments |
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| | | | <ul style="list-style-type: none"> a. Addition b. Subtraction c. Multiplication d. Division <p>And the simplification of algebraic fractions;</p> <p>Assist learners find values of x for which $\frac{f(x)}{g(x)}$ is not undefined</p> <ul style="list-style-type: none"> 3. Assist learners to do substitution and change of subject using formulae 4. Assist learners to graph and solve linear equations and inequalities. 5. Assist learners to solve quadratic equations using: <ul style="list-style-type: none"> a. factorization, b. by completing the square c. and using the formula, 6. Assist learners solve simultaneous equations by <ul style="list-style-type: none"> a. graphs , b. elimination c. substitution d. and use matrices to solve,, 7. Assist learners graph one | | <ul style="list-style-type: none"> -Research -Quiz -Test -Exams |
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| | | | <p>linear inequality and determine the solution region, graph two linear inequalities in the same Cartesian coordinate system and determine the solution region. te 9. Provide problems on linear programming for learners to solve and graph and do the analysis,</p> <p>11. Assist learners form word problems on linear equations, inequalities, and quadratic equations and solve them.</p> | | |
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SEMESTER TWO

Period V
TOPIC VECTOR AND TRIGONOMETRY

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|--|--|--|--|--|--|
| <p>Learners are able to demonstrate and apply concepts to describe a vector, calculate its magnitude and direction, do vector addition, subtraction, find, scalar product. They are able to resolve a vector, work with unit and position vectors, can solve problems on static equilibrium, apply trigonometry to solve vectors, etc.</p> | <p>: Upon completion of this topic, learners will</p> <ol style="list-style-type: none"> 1. Describe vector using number ordered pair notation 2. Describe the magnitude and direction of vectors 3. Solve problems that involve vector addition and subtraction 4. Multiply vectors by a number (scalar product) 5. Define and use unit vector and position vector 6. Determine a vector from its direction and magnitude of vector 7. Work with | <ol style="list-style-type: none"> 1. Vectors representation 2. Magnitude and direction of vectors 3. Vector addition and subtraction 4. Multiplication of vectors 5. Resolution of a vector 6. Define unit and position vectors 7. Solve static equilibrium problems 8. Determination of latitudes and longitudes 9. Applications of trigonometry 10. Calculate the lengths of objects of angles inscribed in a | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <ol style="list-style-type: none"> 1. Assist learners represent a vector graphically, using ordered pairs and using vector notation. 2. Assist learners determine the magnitude and direction of the given vector. 3. Assist learners add and subtract two given vectors vectorially 4. Assist learners to multiply a vector by a scalar(number) and a vector by a vector 5. Assist learners to resolve a resultant vector into its | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> <p>Graph sheets, ruler and</p> | <p>EXPECTED COMPETENCES:</p> <ol style="list-style-type: none"> 1. Problem solving 2. Analytical skill <p><u>ASSESSMENT</u></p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research |

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| | <p>objects in static equilibrium</p> <p>8. Determine whether two vectors are parallel or orthogonal</p> <p>9. Determine Latitude and longitudes</p> <p>10. Calculate the lengths of objects of angles inscribed in a circle</p> | circle. | <p>component vectors</p> <p>6. Assist learners define unit and position vectors and illustrate them</p> <p>7. Assist learners solve static equilibrium problems</p> <p>8. Assist learners to calculate for latitudes and longitudes</p> <p>9. Assist learners apply trigonometry to problems involving vectors</p> <p>10. Assist learners to calculate the lengths of triangle inscribed in a circle.</p> | | <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
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SEMESTER TWO

Period V
Unit II
TOPIC: TRANSFORMATIONS

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|--|--|---|---|--|---|
| <p>Learners are able to apply concepts to movement, transformation and determine the coordinates. They are able to rotate objects under reflection, handle similarities and translation.</p> | <p>Upon completion of this topic, learners will</p> <ol style="list-style-type: none"> 1. Define and discuss transformation using concept of movement or congruency 2. Find the coordinates of transformations 3. Define, discuss and apply the concept | <ol style="list-style-type: none"> 1. Movement 2. Transformations and coordinates 3. Reflection 4. Similarities 5. Translation | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <p>Define and discuss</p> <ol style="list-style-type: none"> 1. Assist learners define and discuss the concept of movement or congruency as it relates to transformation. 2. Assist learners | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> <p>Graph sheets, ruler and</p> | <p>EXPECTED COMPETENCES:</p> <ol style="list-style-type: none"> 1. Creativity and innovation skill 2. Analytical skill 3. Problem-solving skill <p>ASSESSMENTS</p> <p>STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments |

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| | <p>of reflection</p> <p>4. Define, discuss and apply the concept of similarities</p> <p>5. Define, discuss and apply the concept of translation</p> | | <p>review the lesson on rotation and look at a problem done on rotation and consider the coordinates. How were the other coordinates obtained?</p> <p>Define and discuss</p> <p>3. Assist learners define, discuss and apply the concept of reflection</p> <p>Define and discuss</p> <p>4. Assist learners define, discuss and apply the concepts of similarities and translation</p> | | <p>-Research</p> <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
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SEMESTER TWO

Grade 12
Period V

TOPIC PLANE GEOMETRY

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|--|---|--|---|--|---|
| <p>Learners are able to demonstrate concepts to state properties of polygons, triangles, quadrilaterals and circle theorems and solve relevant problems on each of them.</p> | <p>: Upon completion of this topic, learners will</p> <ol style="list-style-type: none"> 1. Define, and discuss polygon 2. Define and discuss regular polygons and their properties 3. Name and define polygons according to their sides | <ol style="list-style-type: none"> 1. Polygons 2. Triangles 3. Quadrilaterals 4. Circle Theorems | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <p>Define and discuss</p> <ol style="list-style-type: none"> 1. Assist learners define and discuss polygon. 2. Draw a polygon. Draw a line from a particular vertex to divide the polygon into | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson</p> <p>Supplementary books</p> <p>Graph sheets, ruler and</p> | <p>EXPECTED COMPETENCES:</p> <ol style="list-style-type: none"> 1. Problem solving skill 2. Analytical skill <p>ASSESSMENTS</p> <p>STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments |

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| | <p>4. Determine interior and exterior angles of polygons and regular polygons</p> <p>5. Find the sum of the interior angles of a polygon and a regular polygon</p> <p>6. Find the sum of the exterior angles of a polygon</p> <p>7. Solve problems on</p> | | <p>triangles.</p> <p>3. Multiply the number of triangles by 180°. The product is the sum of the interior angles of the polygon.</p> <p>4. Define and discuss Assist learners define and discuss regular polygons and their properties.</p> <p>5. Assist learners name polygons according to their sizes.</p> <p>6. Assist learners determine the interior and exterior angles of polygons and regular polygons</p> <p>7. Assist learners find the sum of</p> | | <p>-Research</p> <p>-Quiz</p> <p>-Test</p> <p>-Exams</p> |
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| | <p>polygons</p> <p>8. Define , discuss isosceles , scalene and equilateral triangles</p> <p>9. Solve problems on isosceles , scalene and equilaterals triangles</p> <p>10. Define four quadrilaterals and discuss their properties</p> <p>11. Solve problems on quadrilaterals</p> <p>12. Define circle</p> | | <p>the interior angles of a polygon and a regular polygon</p> <p>8. Assist learners find the sum of the exterior angles of a polygon and a regular polygon</p> <p>9. Solve problems on polygons</p> <p>Define , discuss and illustrate</p> <p>10. Define , discuss and illustrate isosceles , scalene and equilateral triangles</p> <p>11. Assist learners solve problems on isosceles, scalene and equilaterals triangles</p> <p>12. Assist learners define four quadrilaterals</p> | | |
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| | <p>and discuss a circle inscribed angles or triangle or quadrilaterals. And state the circle theorems for each diagram</p> <p>13. Use the theorem to solve problems with circle with inscribed angle or triangle, quadrilaterals etc.</p> <p>14. Discuss the concept of tangent to the</p> | | <p>and discuss their properties</p> <p>13. Solve problems on quadrilaterals</p> <p>14. Define circle and discuss an angle or a triangle or a quadrilateral inscribed in a circle. And state the circle theorems for each diagram</p> <p>15. Use the theorem to solve problems on circle with inscribed angle or triangle or quadrilaterals etc.</p> <p>16. Assist learners discuss the concept of tangent to the circle. State the relevant properties.</p> <p>17. Assist learners solve problems</p> | | |
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| | circle. State the relevant properties | | relating to a line tangent to a circle | | |
| | 15. Solve problems relating to a line tangent to a circle | | | | |

SEMESTER TWO

Grade 12

Period V

Unit IV

TOPIC SOLID GEOMETRY

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|---|--|---|---|---|--|
| Learners are able to demonstrate and apply concepts , | : Upon completion of this topic, learners will | 1. Common solids 2. Prisms 3. Cuboids 4. Cylinders | <u>Inclusive and Differentiated Learning</u> Individual seat work | Prescribed textbook: Mathematics for Senior High Schools Students' Book 3& 4 by Pearson | EXPECTED COMPETENCES 1. Analytical skill 2. Problem solving skill |

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| <p>analytical and problem solving skills which applicable in all spheres of life (including business and industry)</p> | <ol style="list-style-type: none"> 1. Identify and discuss common solids, face of a solid. 2. Define and discuss the following prism, cuboid, cylinder, pyramids, tetrahedron, hexagonal pyramid, cone 3. Measure the lengths and angles in solids 4. Calculate volumes and surface | <ol style="list-style-type: none"> 5. Pyramids 6. Cone 7. Volumes and surface area | <p>or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <ol style="list-style-type: none"> 1. Share pictures of these solids with learners to see and recognize them. 2. Assist learners define the following terms: <ol style="list-style-type: none"> a. prism, b. cuboid, c. cylinder, d. tetrahedron e. hexagonal pyramid, f. cone and state their properties. Use their respective formulae to calculate their volumes and surface area. 3. Assist learners | <p>Supplementary books</p> <p>Graph sheets, ruler and</p> | <p><u>ASSESSMENT</u></p> <p><u>STRATEGIES:</u></p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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| | area | | measure the lengths and angles in solids | | |
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SEMESTER TWO

Grade 12
Period VI
Unit I
TOPIC : PROBABILITY AND STATISTICS

| OUTCOMES | OBJECTIVES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
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| <p>Learners are able to explain following concepts :</p> <p>a. Fundamental counting principle</p> <p>b. Permutation</p> <p>c. Combination and probability.</p> <p>They are able to solve problems on each of them.</p> | <ol style="list-style-type: none"> 1. Fundamental counting principle 2. Compute factorials 3. Permutations 4. Combinations 5. Difference between permutations and combinations 6. Review basic concepts sets, Venn, tree diagrams, and contingency tables 7. sample space and events of an experiment | <p>Fundamental counting principle</p> <p>Compute factorials</p> <ol style="list-style-type: none"> 1. Permutations 2. Combinations 3. Difference between permutations and combinations 4. Review basic concepts sets, Venn, tree diagrams, and contingency tables 5. sample space and events of | <p>Fundamental counting principle</p> <p>Compute factorials</p> <ol style="list-style-type: none"> 1. Permutations 2. Combinations 3. Difference between permutations and combinations 4. Review basic concepts sets, Venn, tree diagrams, and | <p><u>Inclusive and Differentiated Learning</u></p> <p>Individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <p>Discuss</p> <ol style="list-style-type: none"> 1. Assist learners discuss the concept of fundamental counting principle, using coin and die. <p>Determine the combined outcomes. What will it be?</p> <p>Discuss</p> <ol style="list-style-type: none"> 2. Assist learners | <p>Prescribed textbook: Mathematics for Senior High Schools Students' Book 3&4 by Pearson</p> <p>Supplementary books</p> | <p>EXPECTED COMPETENCES:</p> <ol style="list-style-type: none"> 1. Problem solving skill 2. Analytical skill 3. Organizational skill <p>ASSESSMENT</p> <p>STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz |

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| | <p>8. probability of an event, complementary events, mutually exclusive events, independent event, and conditional events</p> <p>9. odds of an event</p> <p>10. Calculate the expected value</p> | <p>an experiment</p> <p>6. probability of an event, complementary events, mutually exclusive events, independent event, and conditional events</p> <p>7. odds of an event</p> <p>8. Calculate the expected value</p> | <p>contingency tables</p> <p>5. sample space and events of an experiment</p> <p>6. probability of an event, complementary events, mutually exclusive events, independent event, and conditional events</p> <p>7. odds of an event</p> <p>8. Calculate the expected value</p> | <p>discuss the concept of factorials and compute factorials of simple numbers and fractions</p> <p>Define and Discuss</p> <p>3. Assist learners s Assist learners define and discuss the concept of permutation .</p> <p>Define and discuss</p> <p>4. Assist learners define and discuss combination</p> <p>5. Assist learners differentiate between them</p> <p>6. .Assist learners solve simple problems on permutation and combination.</p> <p>7. Assist learners review basic</p> | | <p>-Test</p> <p>-Exams</p> |
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| | | | | <p>concepts of sets, Venn tree diagrams, Define and discuss</p> <p>8. Assist learners define and discuss the following term:</p> <ul style="list-style-type: none">a. Sample spaceb. Eventc. Odds ford. Odds againste. Simple eventf. Mutually exclusive event, associate d with probabili ties <p>9. Assist learners form a sample space using the following as events: STI, HIV, teenage pregnancy, rape,</p> | | |
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| | | | | <p>relationship, etc. Find the probability of each event in activity two e.g. represent each of the events with figure obtained from the data, then find the probability of each.</p> <p>10. Assist learners construct a sex network. Use the sex network to show how STI and HIV can be spread from person to another in a matrix.</p> <p>11. Assist learners Use a deck of cards as sample space of population and determine the probability of contracting STI from the given sample space.</p> | | |
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SEMESTER TWO

Grade 12
Period VI

TOPIC EXPONENTIAL AND LOGARITHMIC FUNCTIONS

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCES/ASSESSMENTS |
|---|---|---|--|--|---|
| Learners are able to apply concepts to evaluate, graph, change base, and solve problems on exponential functions and logarithmic functions and exponential and logarithmic equations. | Upon completion of this topic, learners will 1. Evaluate exponential functions 2. Graph exponential functions 3. Solve application problems involving exponential functions (doubling time growth model, radioactive decay, compound interest) 4. Distinguish between algebraic and exponential functions | 1. Evaluation of Exponential functions 2. Graph of exponential functions 3. Applications involving exponential functions(doubling time growth model ,radioactive decay, compound interest) 4. Distinguish between algebraic and exponential functions 5. Definition of base e 6. Graph exponential functions with base e 7. Review of growth and decay with | <p><u>Inclusive and Differentiated Learning</u></p> Individual seat work or work in mixed groups according to gender, abilities and learning styles | Prescribed textbook: Mathematics for Senior High Schools Students’ Book 3& 4 by Pearson Supplementary books Graph sheets | EXPECTED COMPETENCES: 1. Analytical skill 2. Problem-solving skill ASSESSMENTS STRATEGIES: Can be used to check competences. Select relevant options: -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz |

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| | <p>l function</p> <ol style="list-style-type: none"> 5. Define base e 6. Graph exponential functions with base e 7. Review growth and decay with base e 8. Solve application problems involving compounding continuously 9. Change expressions to logarithmic expressions, and conversely 10. Evaluate logarithmic functions 11. Evaluate common and natural logarithms using | <p>base e</p> <ol style="list-style-type: none"> 8. Problem-solving involving interest compounding continuously 9. Change of exponential expressions to logarithmic expressions conversely 10. Evaluation of logarithmic functions 11. Evaluation Of common and natural logarithms using calculator 12. Graph of logarithmic functions 13. Interpretation of logarithmic functions as inverse of exponential functions 14. Domain restrictions on logarithmic | <ol style="list-style-type: none"> 4. Distinguish between algebraic and exponential functions Define and discuss 5. Assist learner Define base e 6. Assist learner graph exponential functions with base e 7. Assist learners review growth and decay with base e 8. Assist learners solve to problems involving interest compounding continuously 9. Assist learners change expressions to logarithmic expressions, and conversely 10. Assist learners evaluate logarithmic functions 11. Assist learners evaluate common and natural logarithms using | <p>-Test</p> <p>-Exams</p> |
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| | <p>calculator</p> <p>12. Graph logarithmic functions</p> <p>13. Interpret logarithmic functions as inverse of exponential functions</p> <p>14. Determine domain restrictions on logarithmic functions</p> <p>15. Express a single logarithm as a sum or difference of logarithms</p> <p>16. Express a logarithmic expression as a single logarithm</p> <p>17. Evaluate logarithms of a general base (</p> | <p>functions</p> <p>15. Expressions of a single of a logarithm as a sum or difference of logarithms</p> <p>16. Expression of a logarithmic expression as a single logarithm</p> <p>17. Evaluation of logarithms of a general base (other than base 10 or e. state and use the seven basic logarithmic properties</p> <p>18. State and use the change-of-base formula</p> <p>19. Solution of exponential and logarithmic equation</p> <p>20. Solution</p> | <p>calculator</p> <p>12. Assist learners graph logarithmic functions</p> <p>13. Assist learners interpret logarithmic functions as an inverse of exponential functions</p> <p>14. Assist learners determine domain restrictions on logarithms</p> <p>15. Assist learners express a single logarithm as a sum or difference of logarithms</p> <p>16. Assist learners express a logarithmic expression as a single logarithm</p> <p>17. Assist learners evaluate logarithms of a general base (other than 10 or e)</p> <p>18. Assist learners state the seven basic logarithm Properties</p> | | |
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| | <p>other than base 10 or e)</p> <p>18. State the seven basic logarithmic properties</p> <p>19. State the change -one- of base formula</p> <p>20. Solve exponential and logarithmic equations</p> | | <p>19. Assist learners state the change of base formula</p> <p>20. Assist learners solve problems using exponential and logarithms equations</p> | | |
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SEMESTER TWO

Grade 12
Period VI

Topic Differentiation and integration

| OUTCOMES | OBJECTIVES | CONTENTS | ACTIVITIES | MATERIALS/RESOURCES | COMPETENCY ASSESSMENT |
|---|---|--|---|--|---|
| <p>Learners are able to apply concepts to find the limits of simple polynomial and trigonometric functions, find the derivatives of simple algebraic and trigonometric functions. They are able</p> | <p>: Upon completion of this topic, learners will</p> <ol style="list-style-type: none"> 1. Define , discuss and apply the concept of Difference quotient 2. Review slopes, Tangent lines and Derivatives | <ol style="list-style-type: none"> 1. Review analytic geometry 2. Difference quotient 3. Limits 4. Differentiation 5. Areas under the curve 6. Integration | <p><u>Inclusive and differentiated Learning</u></p> <p>individual seat work or work in mixed groups according to gender, abilities and learning styles</p> <p>Assignments/Exercises</p> <ol style="list-style-type: none"> 1. Assist learners review slope, tangent lines and define derivative. 2. Assist learners | <p>Supplementary book: 8th Edition of Calculus and Analytic Geometry by George B. Thomas and Ross L. Finney</p> <p>Graph sheets</p> | <p>EXPECTED COMPETENCES:</p> <ol style="list-style-type: none"> 1. problem solving skill 2. analytical skill <p>ASSESSMENT STRATEGIES:</p> <p>Can be used to check competences. Select relevant options:</p> |

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| <p>to find the area under a curve and the indefinite integrals of simple polynomial and trigonometric functions.</p> | <ol style="list-style-type: none"> 3. Define and discuss the concept of limits 4. Define and apply the concept of differentiation 5. Define and discuss the concept of integration 6. Find areas under a curve 7. Find indefinite integrals of simple polynomial and trigonometric functions | | <p>relate slope and tangent lines to derivative in terms of smallness(infinitesimal thing) Discuss</p> <ol style="list-style-type: none"> 3. Assist learners discuss the concept and equation for difference quotient 4. Assist learners use the formula to solve problems. Define and discuss 5. Assist learners define and discuss the concept of limits and solve simple problems on polynomial and trigonometric functions. 6. State the rules of limit and use them to solve basic algebraic problems Define and discuss | | <ul style="list-style-type: none"> -Attendances -Oral questions and Answers -Class Assignment and Participation -Observation -Assignments -Research -Quiz -Test -Exams |
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| | | | <p>7. Assist learners define and discuss the concept of differentiation. Use first principle to find the derivatives of simple algebraic functions</p> <p>8. State the rules of differentiation and apply them to simple algebraic and trigonometric functions</p> <p>Discuss</p> <p>9. Assist learners Discuss the concept of summation as it relates to finding the area of a rectangle or a region.</p> <p>10. Define and discuss the concept of integration.</p> <p>11. Define indefinite integrals. Find the indefinite integrals of basic polynomial and trigonometric</p> | | |
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