

PERIOD: 1

GRADE: 1

TOPIC: Set and Numeration

LEARNING OBJECTIVES: Upon completion of this topic, learners will:

1. Define set and Write examples of sets
2. Describe the number of members (elements) of a set as a property of sets
3. Identify and recognize the union of sets as addition
4. Use subsets to introduce subtraction
5. Solve problems using addition symbol with digits 1 to 10;
6. Solve problems using subtraction symbol with digits 1 to 10

LEARNING OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	EVALUATION
<b>Learners are able to:</b> Use sets and numbers to recognize gender roles in a given family	Sets and Numbers <ul style="list-style-type: none"> <li>• Sets of boys,</li> <li>• sets of girls,</li> <li>• sets of boys and girls,</li> <li>• Set of family members subsets of family members</li> </ul>	<p><b><u>Inclusive and differentiated learning</u></b></p> <p><b>Class Exercise:</b> Group boys and girls separately, group boys and girls together as members of a family, Group the entire family members (boys, girls and parents)</p> <p><b>Discussion:</b> Ask pupils to determine what should be the roles of boys, girls, fathers and mothers in the family.</p> <p><b>Role play:</b> use set of boys and girls to show the value of each sex and their roles and responsibilities</p>	Primary School Text: Revised edition of Mathematics for Liberia  A. Other: Resources/Supplementary Mathematics. Color pencils/crayons Poster: Books, cups, stones/rocks, Poster chart showing drawing of sets of boys and girls in groups	<p><b><u>Competence:</u></b></p> <p><b><u>Tool :</u></b></p> <p>-Observation of activities performed.            -Question and answer on the role played by boys and girls.</p> <p>Homework, quizzes, tests.</p>

PERIOD: II

GRADE: 1

TOPIC: Numeration

LEARNING OBJECTIVES: Upon completion of unit learners, will be able to:

1. Count objects up to 40
2. Read and write numbers up to 40
3. Compare and order numbers up to 40;
4. Identify addition and subtraction facts up 40
5. Solve problems involving basic addition facts.

LEARNING OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	EVALUATION
Read and write numbers represented in various formats (numerical, pictorial etc.)	1. Reading and writing numbers up to 40 2. Compare and order numbers up to 40 3. Reading and writing numbers using pictures and number line. 4. Other addition facts up to 40 5. Solving problems involving addition and subtraction facts up to 40	<u><b>Inclusive and differentiated learning</b></u> Matching objects (boys and girls) with numbers up to 40. ❖ Read numbers represented in various formats (numerical, pictorial) Explain why one number is greater than, less than or equal to another number Compare sets of objects and numbers to multiples of 5s and 10s. Identify values between any two given numbers ❖ Compare numbers represented on number lines ❖ Using marked flash cards up to 40 for reading and writing. ❖ Comparing and ordering numbers up 40 Solving problem using addition and subtraction facts up to 40	A. Primary Textbooks: B. Other: Resources/Supplementary Ruler, poster sheets, pencils, flash cards, pictures of different objects	❖ Class work ❖ Project ❖ Group work/presentation

PERIOD: III

GRADE: 1

TOPIC: Place Value

**LEARNING OBJECTIVES:** Upon completion of this topic: students will:

1. Read and write two digit numbers
2. Determine the place value of a two digit number
3. Compare and order numbers up to 100
4. Find numbers before, after, and between
5. Count by 2's, 5's and 10's up to 100

LEARNING OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	EVALUATION
<p>Read and write two digit numbers and show their place value</p> <p>Count and write whole numbers by 2s, 5s and 10s and apply counting skills to recognize the value of money, and other things</p>	<ol style="list-style-type: none"> <li>1. Reading and writing numbers up to 100</li> <li>2. Comparing and ordering numbers up to 100</li> <li>3. Numbers</li> </ol>	<p><b><u>Inclusive and differentiated learning</u></b></p> <ol style="list-style-type: none"> <li>i. read and write two-digit numbers less than 100;</li> <li>ii. Compare and order numbers up to 100;</li> <li>iii. Find numbers before, after, and between.</li> </ol> <p>Write the whole number that comes <b>before</b> each of the following numbers.</p> <p>(a) ____67</p> <p>(b) ____59</p>	<p>A. <u>Primary Text:</u></p> <ol style="list-style-type: none"> <li>1. Place value to model</li> <li>2. Bundles of stick in tens</li> <li>3. Sack of sticks in tens</li> <li>4. Sack of rocks in tens</li> </ol>	<p>Class work</p> <p>Project</p> <p>Group</p>

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<p>in their home and school.</p>	<p>before, after, and between</p> <p>4. Skip by counting</p> <p>5. Ordinal number to 100</p> <p>6. Using of place value model</p>	<p>(c) ____99</p> <p>Provide the whole number comes <b>between</b> each of the following pairs of numbers.</p> <p>(a) 64 ____66</p> <p>(b) 88____90</p> <p>(c) 14____16</p> <p>Write the whole number that comes <b>after</b> each of the following numbers.</p> <p>(a) 90____</p> <p>(b) 67____</p> <p>(c) 42____</p> <p>(7) What are the place values of each two digit number in the following numerals? A. 26 b. 32 c. 54 d. 93</p> <p>1. Learner's will work in group to count objects in ones and tens</p> <p>2. Identification of numbers up to 100 on number chart</p> <p>3. Writing of number using the value model</p> <p>4. Skip counting of numbers before, after and in between</p> <p>5. Counting by 2s,5s,and 10s up to 99</p>	<p>5. Number chart</p> <p>6. Abbacus counters</p> <p>B. Secondary Text:</p> <p>C. Other: <u>Resources/Supplementary</u> <u>Readings:</u></p>	
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PERIOD: IV

GRADE: 1

TOPIC: Adding and Subtracting 2- digit numbers

**SPECIFIC OBJECTIVES:** Upon completion of this topic: students will:

1. Add tens
2. Subtract tens
3. Add 2-digit numbers without regrouping
4. Subtract 2-digit numbers without regrouping
5. Add 2-digit numbers regrouping ones
6. Solve problems involving addition and subtraction

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	EVALUATION
Apply addition and subtraction skills to solve real life problems	Adding multiples of tens  Subtracting multiples of tens  Adding 2-digit numbers without regrouping	<u><b>Inclusive and differentiated learning</b></u> 1. Addition and subtractions of multiple of tens 2. Learners should work in groups to add and subtract multiple of tens using base 10 models; 3. Counting, adding and subtracting multiple of tens mentally; 4. Regrouping ones; examples;	A. Primary Text: B. :Other: Resources/Supplementary Materials; Place value chart; Addition/subtraction(char t/table), Liberian currency	Participation Group work Quizzes, tests

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	<p>Subtracting multiples of 10 without regrouping</p> <p>Regrouping ones (renaming)</p> <p>Subtracting 2-digit number</p> <p>Solve problems involving addition and subtraction of 2-digit</p>	<p>a. The family of 10 consists of two addends whose sum is 10, such as:  <math>1+9=9+1=2+8=8+2=3+7=7+3=4+6=6+4=5+5=10</math>; etc.</p> <p>b. The family of 11 consists of two addends whose sum is 11, such as:  <math>9+2=2+9=8+3=3+8=4+7=7+4=5+6=6+5=etc.</math></p> <p>5. Adding or subtracting 2- digit number using trading;</p> <p>6. Adding and subtracting 2- digit numbers using place value chart</p>		
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SEMESTER TWO

GRADE: 1

PERIOD: V

TOPIC: Measurement

**SPECIFIC OBJECTIVES:** Upon completion of this topic: students will be able to:

1. Explain the importance of Measurement
2. Discuss the idea of length
3. Describe Weight/mass
4. Estimate length, weight using selected unit of measure
5. Tell different times of the day
6. Identify Liberian Money in terms of unit value
7. Describe capacity (space within an area or volume)
8. Measure an area using standard units
9. Measure an area using non-standard units

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	EVALUATION
Demonstrate ability to determine length, width, capacity, and weight, tell	The importance of measurement	<b><u>Inclusive and differentiated learning</u></b> <b>Discussion:</b> learners discuss the importance of measurement-i.e. books,	A. <u>Primary Text:</u> B. <u>Secondary Text:</u>	<b>Competency:</b>  <b>Tool:</b>

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time and count money using Liberian dollars	<p>Estimating length</p> <p>Ideas of weight and capacity</p> <p>Using standard and non-standard units of length</p> <p>Telling hourly time</p> <p>Counting Liberian Money</p>	<p>class door, their heights, desk, water, cup of rice, etc.</p> <p><b>Exercise:</b> Compare the weight and height of two students to show why there is a difference between the two. (e.g. students of same height might not have the same weight verse visa); Learners estimate the length of the class by pacing, length of their arms by using their fingers, strings, and size of their shoes by use of paper; estimate the weights of objects by lifting them up- i.e. (stones, books, school bags, etc.); use their rulers to measure and record using the length of their copybooks, textbooks, use tape line to measure and record the heights of the boys and girls in the class; use the paper clock to learn time telling; determine the capacity of the classroom, glass of water, etc.; identify and state the value of the Liberian currency.</p>	<p>C. <u>Other:</u> <u>Resources/Supplementary Readings:</u></p> <p>Rocks, rope, string, clock if available, Money(Liberian), stickers, paper seal, tapeline, weighing scale, paper clock</p>	<p>Homework (practice exercises on measurement of weight and height )</p> <p>Quizzes Tests</p>
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**GRADE: 1**

**PERIOD: VI**

Topic: 1.Geometric shapes

2. Fractions

Specific Objectives: Upon completion of this unit, the learners, will be able to:

1. Sort out plane figures according to shapes
2. Identify triangles, rectangles, circles
3. Draw triangles, rectangles, circles
4. Identify halves, thirds, or fourths

Outcomes	Contents	Activities	Materials	Evaluation
<p>Differentiate shapes of geometric figures( triangles, rectangles, and circles)</p> <p>Recognize halves, thirds, fourths using fractional chart or number line</p>	<p>Sorting shapes</p> <p>Concepts(Ideas) of triangles</p> <p>Concepts(Ideas) of rectangle</p> <p>Concepts(Ideas) of circle</p> <p>Draw shapes (triangle, rectangle, circle)</p> <p>Identifying halves, thirds, fourths</p>	<p><b><u>Inclusive and differentiated learning</u></b></p> <ul style="list-style-type: none"> <li>❖ Divide learners into small groups; let them differentiate shapes of geometric figures.</li> <li>❖ Ask learners to identify and draw shapes of triangles, rectangles and circles;</li> <li>❖ Let learners show by drawing wholes, halves, thirds, fourths using fractional chart or number line</li> </ul>	<ul style="list-style-type: none"> <li>❖ Straight edge</li> <li>❖ paper shapes of triangles rectangles, squares</li> <li>❖ Poster sheets showing halves, thirds, fourths</li> <li>❖ Number lines</li> <li>❖ Primary textbook</li> <li>❖ Supplementary Textbook</li> </ul>	<p>Competency:</p> <p>Tool:</p> <p>Home works, quizzes and test</p>

## SEMESTER ONE

GRADE: 2

PERIOD: I

Topic: Sets and Numbers

Specific Objectives: Upon completion of this topic, Learners will:

1. Match objects to whole numbers
2. Add numbers by using the union of two disjoint sets e.g. Use family members (set of boys and girls.) to describe disjoint set.
3. Count by twos, fives, tens up to 100
4. Compare parts of a whole

Outcomes	Contents	Activities	Materials	Evaluation
<p>Use a given population data to add and subtract whole numbers</p> <p>Demonstrate the knowledge of identifying parts of a whole and count up to 100.</p>	<p>Set and numbers</p> <p>Addition of two or more digit- numbers using the population data</p> <p>Subtraction of two or more digit numbers using the population data</p> <p>Disjoint sets Comparing the kinds of element in a given set using students as a set</p>	<p><b><u>Inclusive and differentiated learning</u></b></p> <p><b>Discussion:</b> review activities on sets and its properties.</p> <p><b>Class exercise:</b> Use the given population data to add or subtract two or more elements of the population, demonstrate sets of children of the same sex in groups without common elements, organize small groups to draw set of</p>	<ol style="list-style-type: none"> <li>1. Set of different numbers</li> <li>2. Number chart</li> <li>3. Objects</li> <li>4. Flash cards</li> <li>5. Geometric shapes</li> </ol>	<p>❖ Exercises involving sets, number sequences, and parts of a whole.</p> <p>❖ Quizzes, homework and tests</p>

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	<ol style="list-style-type: none"> <li>1. Sets of disjoint sets</li> <li>2. Number sequences</li> <li>3. Parts of a whole</li> </ol>	<p>objects and match them with the sets of whole numbers; compare two disjoint sets and name its elements; count numbers by 2s, 5s, 10s up to 100; draw a circle and divide it into two parts and compare and name parts of a whole; form addition sentences using two or more disjoint sets.</p> <p>Example; set of boys and girls describe as disjoint set. The union of these sets will give a single set, with all set of boys and girls in a single set</p>		
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# SEMESTER ONE

GRADE: 2

PERIOD: II

Topic: Numeration

Specific Objectives: Upon completion of this topic, the students will:

1. Read and write numbers up to 200
2. Recognize and name place value of digit of a given number. 3.  
Write a given number in expanded form
4. Read and write names for fractional number

Outcomes	Contents	Activities	Materials	Evaluation
<p>Students will:</p> <ol style="list-style-type: none"> <li>1. Read and write numbers.</li> <li>2. Analysis numbers and their values</li> </ol>	<ol style="list-style-type: none"> <li>1. Reading and writing numerals</li> <li>2. Place value</li> <li>3. Standard-digit &amp; expanded number</li> <li>4. Numerals</li> <li>5. Fractional numbers</li> </ol>	<p><b><u>Inclusive and differentiated learning</u></b></p> <ul style="list-style-type: none"> <li>❖ Review in small groups reading and writing numeral up to 100</li> <li>❖ Reading and writing numeral up to 200;</li> <li>❖ Writing digit from place value concepts of a given number;</li> <li>❖ Reading and writing fractional numbers;</li> <li>❖ Let learners express three digits</li> </ul>	<ol style="list-style-type: none"> <li>1. Numbers chart</li> <li>2. Place value chart</li> <li>3. Shaded functional illustrations</li> </ol>	<ul style="list-style-type: none"> <li>❖ Exercises involving Reading and writing numerals individually;</li> <li>❖ Expressing three digit numerals in expanded notation.</li> <li>❖ Homework,</li> </ul>

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		<p>numerals in expanded forms or notation. Example: 125 using place value to determine the position of each digit.</p> $100 + 20 + 5$		quizzes and tests
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GRADE 1-6 MATHEMATICS

**SEMESTER ONE**

GRADE: 2

PERIOD: III

Topic: Operation Part I

Specific Objectives: Upon completion of this topic, students will:

1. Find the sum of three or more two-digit numerals without regrouping
2. Use equality and inequality in addition
3. Subtract one digit number from two digit numbers and two digit numbers from two digit number without regrouping, using population concept as specific example.

Outcomes	Contents	Activities	Materials	Evaluation
Students will solve addition and subtraction problems involving 2-digit numbers without regrouping	<ol style="list-style-type: none"> <li>1. Addition of 3 or more two digit numbers without regrouping</li> <li>2. Subtraction of 2-digit numerals without regrouping</li> <li>3. Equality and inequality</li> <li>4. Addition and subtraction of number of males and females in a Family</li> </ol>	<p><b><u>Inclusive and differentiated learning</u></b></p> <ul style="list-style-type: none"> <li>❖ Let learners add 3 two digit numerals without regrouping;</li> <li>❖ Let learners add 4 two digit numerals without regrouping.</li> <li>❖ Ask learners to subtract 2-digit numerals without regrouping. E.g. thirty-six students attended hospital for malaria, if seventeen of them was boys how many of them are girls.</li> </ul>	<ul style="list-style-type: none"> <li>❖ .Numbers counter,</li> <li>❖ Wall charts</li> <li>❖ Prescribed textbook</li> <li>❖</li> </ul>	<ul style="list-style-type: none"> <li>❖ Exercises involving 2digit numbers.</li> <li>❖ Participation</li> <li>❖ Homework, quizzes, tests</li> </ul>

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		<ul style="list-style-type: none"> <li>❖ Lead learners to discuss the concept of the properties of additions of equality and inequality (<math>&gt;</math>, <math>&lt;</math>, <math>=</math>,) using 1 or 2-digit numerals. Example: <math>7 + 6 \underline{\hspace{1cm}} 13</math> <math>7 + 6 \underline{\hspace{1cm}} 15</math> <math>7 + 6 \underline{\hspace{1cm}} 10</math></li> <li>❖ Addition and subtraction of the two sexes in a given family</li> </ul>		
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**SEMESTER TWO**

**GRADE: 2**

**PERIOD: IV**

TOPIC: Operation part II

Specific Objectives: Upon completion of this topic, students will:

1. Solve addition problem using regrouping
2. Solve subtraction problem using regrouping
3. Multiply 1-digit numerals

Outcomes	Contents	Activities	Materials	Evaluation
Students will adopt skills of solving addition and subtraction involving 2-digit numbers using regrouping	<ol style="list-style-type: none"> <li>1. Addition of 3 or more two digit numbers using regrouping</li> <li>2. Subtraction of 2-digit numerals using regrouping</li> </ol>	<p><b><u>Inclusive and differentiated learning</u></b></p> <ul style="list-style-type: none"> <li>❖ Let learners in smaller groups discuss and illustrate the idea of regrouping of 3 or more two-digit numbers using addition</li> <li>❖ Let learners subtract two digit numerals Using regrouping. Additional let learners discuss the concept</li> <li>❖ Multiplication games of one-digit numerals.</li> </ul>	<ol style="list-style-type: none"> <li>1. Numbers counters, bundles of sticks</li> <li>2. Wall charts</li> <li>3. Textbook</li> </ol>	<p>Problem-solving involving:</p> <ol style="list-style-type: none"> <li>1. Calculation of 2 and 3-digit numbers in additions and subtractions</li> <li>2. Multiplication games of one-digit numerals</li> </ol> <p>Homework, quizzes and test.</p>



SEMESTER TWO

GRADE: 2

PERIOD: V

Topic: Measurement

Specific Objectives: Upon completion of this topic. Students will:

1. Describe weight and capacity
2. Measure lengths, balancing weights and capacity using local units
3. Use standard units of measurement
4. Tell time for different times of the day
5. Use the currency in circulation

Outcomes	Contents	Activities	Materials	Evaluation
<p>Learners are able to:</p> <p>Demonstrate skills in measuring different objects relating to length, weigh and capacity.</p> <p>Use the clock to tell time and be conscious of time</p> <p>Determine</p>	<ol style="list-style-type: none"> <li>1. weight and Capacity</li> <li>2. Measurement of lengths(heights)</li> <li>3. Standard unit of measurements</li> <li>4. Time telling</li> <li>5. Monetary value or Currency</li> </ol>	<p><b><u>Inclusive and differentiated learning</u></b></p> <p><b>Class discussion:</b> Lead discussion on the description of weight and capacity; in smaller groups discuss the concept of measuring lengths, balancing of weights and capacity using local units</p> <p><b>Class exercise:</b> Use same or different sex to compare their heights and weights; To add or .subtract their weight and heights in two</p>	<p>Cut out an inch, foot, card, yard stick, strings</p> <ul style="list-style-type: none"> <li>❖ bottles of sizes found in the localities, quarts, containers of different sizes</li> <li>❖ clock of varying sizes</li> <li>❖ Small sand bag, scale, graduated bottles, etc.</li> <li>❖ Tapeline and scales</li> </ul>	<p>Exercises or games involving:</p> <ul style="list-style-type: none"> <li>❖ Measurement of</li> <li>❖ length, width, distance, and weight;</li> <li>❖ Telling of times.</li> <li>❖ Calculation of Money</li> <li>❖ Homework, quizzes and tests</li> </ul>

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monetary value of the local currencies		separate sets; use tape line and scale to measure and compare the heights and weights of boys and girls in the class.; use paper clocks or watches to tell time and describing the property of clock;. Identify units of Liberian currency	❖ Textbooks	
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**GRADE: 2**

**PERIOD: VI**

Topic: 1. Ordinal Numbers

2. Geometry

Specific Objectives: Upon completion of this unit, students will be able to:

1. Demonstrate or use games to identify position (ordinals)
2. Identify and give simple properties of line segment, square, rectangle, triangle circles and quadrilaterals(Geometry)

Outcomes	Contents	Activities	Materials	Evaluation
<p>Students will:</p> <ul style="list-style-type: none"> <li>❖ Distinguish the difference between ordinal numbers and cardinal numbers</li> <li>❖ Recognize the shapes of a square, rectangle, triangle and a circle</li> </ul>	<ol style="list-style-type: none"> <li>1. Ordinal numbers 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, etc.</li> <li>2. Simple properties of line segments,</li> <li>3. Circular shapes</li> <li>4. Triangular and rectangular shapes</li> </ol>	<p>Activities involving the:</p> <p>Review of cardinal (counting) numbers and differential it from ordinal numbers</p> <ul style="list-style-type: none"> <li>❖ Lead learners to explain the meaning of ordinal numbers. Example ordinal consider the position on and not the value of numbers like cardinal numbers.</li> <li>❖ Ask learners to form a line of 10. Let them tell each other where do they stand in the line.</li> </ul> <p>5. Tell them that ordinal</p>	<ul style="list-style-type: none"> <li>❖ Self-explanation ordinal wall chart</li> <li>❖ Wall chart with geometric shapes including square, rectangles, triangle, circles and quadrilaterals</li> <li>❖ Prescribe textbooks</li> </ul>	<ul style="list-style-type: none"> <li>❖ Differentiating Ordinal numbers from Cardinal numbers.</li> <li>❖ Recognition of Geometry Figures</li> <li>❖ Home works quizzes and tests,</li> </ul>

GRADE 1-6 MATHEMATICS

		<p>numbers is the position one stands in a line. Such as 1<sup>st</sup>, 2<sup>nd</sup>,</p> <ul style="list-style-type: none"> <li>❖ 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, etc.;</li> <li>❖ Let learners discuss simple properties of line segments;</li> <li>❖ Let learners identify of circular, triangular, and rectangular shapes.</li> </ul>		
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## SEMESTER ONE

**GRADE: 3**

**PERIOD: I**

TOPIC: Review of Operations

Learning Objectives: Upon completion of this topic, students will:

1. Add one and two digit numerals
2. Subtract one and two digit numerals
3. Subtract two digit numerals using regrouping
4. Add two digit numerals
5. Multiply one and two digit numerals
6. Identify symbols such as  $>$   $<$  or  $=$
7. Name parts of a whole

Outcomes	Contents	Activities	Materials	Evaluation
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<p>Learners will demonstrate their understanding in performing the following operations: addition, subtraction, and multiplication, compare things in the environment using their understanding of fraction.</p> <p>Relate geometric shapes and patterns to designs in the community.</p>	<ul style="list-style-type: none"> <li>▪ Addition</li> <li>▪ Subtraction</li> <li>▪ Multiplication</li> <li>▪ Fractions</li> <li>▪ Geometry</li> </ul>	<p>A variety of activities involving:</p> <ul style="list-style-type: none"> <li>❖ additions of one or two digit numerals; Learners work in smaller groups to construct two digit number problems and add.</li> <li>❖ subtraction of one or two digit numerals; Learners work in smaller groups to construct two digit number problems and subtract.</li> <li>❖ Learners will work together and shade fractional parts of a circle ( <math>\frac{1}{2}</math>; <math>\frac{1}{3}</math>; <math>\frac{1}{4}</math> etc): Ask learners to identify and describe geometry figures <ul style="list-style-type: none"> <li>❖ identification of mathematical symbols(&gt; &lt; , =)</li> </ul> </li> </ul>	<p>Counter, rocks, sticks and cut paper</p> <p>Use other local material to teach</p>	<p>Participation</p> <p>Group discussion</p> <p>Quizzes</p> <p>tests</p>
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## SEMESTER ONE

**GRADE: 3**

**PERIOD: I**

Topic: Sets and numbers

Specific Objectives: upon the completion of this topic, students will:

1. Identify the properties of sets and subsets using population data with specific reference to family members.
2. Identify disjoint sets, union of sets as they relate to addition
3. Compare and order fractions

Outcomes	Contents	Activities	Materials	Evaluation
Learners are able to :  Identify the properties of sets and subsets using the population data of specific reference to family members.  apply the concept of subsets to group family into smaller groups	1.Sets and properties Using the equality and inequality symbols  2.union and intersection of sets  3. sub-sets  4. Fractions	<b>Inclusive and differentiated learning</b>  <b>Class exercises:</b> Form two sets of boys of different or same sizes. Form two sets of girls of different or the same sizes. Form two sets of girls and boys of different or same sizes. Form two sets of families of different or same sizes. Compare the number of learners in two more sets using the symbol $<$ , $>$ or $=$ to show their relationship. Determine	Rocks, sticks, Counter, Flash cards, chart etc.  Elementary mathematic for Liberia revised edition book 2,unit-1  Poster sheets reflecting the properties of sets.	<b>Competency :</b>  <b>Tool:</b> Seat work Assignment Participation Quizzes Tests

		which one of the sets have common elements showing union. Determine which one of the two sets do not have common elements showing disjoint sets. Determine which two sets show common elements (intersection). Determine which one of the sets is a big set (has all elements) of the other sets.		
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## SEMESTER ONE

**GRADE: 3**

**PERIOD: II**

Topic: Numeration

**Learning Objectives:** Upon completion of this topic, students will:

1. Read numerals up to 1000
2. write numerals up to 1000
3. Recognize and write place value for given numerals (ones, tens, hundreds and thousands).
4. Write three digit numerals to expanded notation
5. Compare and order unit fraction such as  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ , etc.

Outcomes	Contents	Activities	Materials	Evaluation
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<p>1. Learners will: Demonstrate their understanding and skills of read and write numbers up to 1000.</p> <p>2. Demonstrate their higher understanding of, the place value of number and have appreciation for monetary value especially Liberia Dollar.</p> <p>3. Exhibit their knowledge by comparing things base on their sizes</p>	<ul style="list-style-type: none"> <li>▪ Whole number up to 1000</li> <li>▪ Place value (ones, tens, hundreds, and thousands)</li> <li>▪ Expanded notation</li> <li>▪ Fraction in order <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, etc.</li> </ul>	<p>Organize activities involving:</p> <ul style="list-style-type: none"> <li>❖ In pairs of two, learners will read and write numbers up to 1000 report to the class;</li> <li>❖ Ask learners to identify and write the place values interns of ones, tens, hundreds and thousands and report to the class.;</li> <li>❖ Let learners Use three or four digit numerals to show expanded notation;</li> <li>❖ Ask learners to compare and order units of fractions such as <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{6}</math>, etc.</li> </ul>	<p>1. Rocks, stone counter, place value chart, place value strips</p> <p>2. Chart showing fractional parts of a whole.</p>	<p>Exercises on:</p> <ol style="list-style-type: none"> <li>1. Group work</li> <li>2. Homework, quizzes, tests</li> </ol>
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## Grade Three Mathematics

### SEMESTER ONE

**GRADE: 3**

**PERIOD: III**

Topic: Operation of whole numbers

Learning Objectives: Upon completion of this unit, students will be able to:

1. Demonstrate the basic combination of additions, subtraction, division and multiplication in solving whole number problems.
2. Solve simple open sentence problems with one variable.

Outcomes	Contents	Activities	Materials	Evaluation
<ol style="list-style-type: none"><li>1. Learners will apply their computational skills to solve addition, subtraction, multiplication, and division in real life situation.</li><li>2. Students will translate mathematical sentences in daily activities.</li></ol>	<ul style="list-style-type: none"><li>▪ Addition and Subtraction of whole numbers</li><li>▪ Simple open sentence problems</li><li>▪ Addition and subtraction of whole number with 1-4 digit number</li><li>▪ Multiplication of 2-4digit numbers by 1-2 digit whole numbers</li><li>▪ Division of one to three digit whole number by one to two digit whole numbers</li></ul>	<p>Activities involving:</p> <ul style="list-style-type: none"><li>❖ Addition of 3 or more digit numbers with renaming as ones, tens and hundreds.</li><li>❖ subtraction of 3 digit numbers with renaming</li><li>❖ . solving of subtraction, addition, multiplication, and division words problems</li><li>❖ Dividing and adding numbers to find the missing number with various symbols and number facts.</li></ul>	<ol style="list-style-type: none"><li>1. Use any local materials that will make the teaching/learning effective.</li><li>2. Teacher-made materials</li></ol>	<p>Exercises on solving problems with 3-digits</p>

## SEMESTER TWO

**GRADE: 3**

**PERIOD: III**

Topic: Structure and properties of numbers

**Learning Objectives:** upon completion of this topic, students will:

7. Apply the Commutative property of addition and multiplication
8. Apply associative property of addition and multiplication
9. Distributive property of multiplication over addition and subtraction
10. Zero as the identity element for multiplication
11. Perform multiplication with factor less than 100.

Outcomes	Contents	Activities	Materials	Evaluation
<p>Learners will: Apply commutative and associate properties to real life situation in the arrangement of things</p> <p>2. Recognize the properties of zero as identity element of addition and one as identity element of multiplication.</p>	<ul style="list-style-type: none"> <li>▪ Commutative and Associative properties</li> <li>▪ Properties of zero and one</li> <li>▪ Closure property</li> <li>▪ Multiplication with factor less than 100.</li> </ul>	<p>Activities involving : Divide learners into groups and let them work together on the various properties :</p> <ul style="list-style-type: none"> <li>❖ commutative and associative properties of addition and multiplication;</li> <li>❖ Distributive property of multiplication over addition and subtraction</li> <li>❖ Demonstration of property of zero and one</li> </ul>	<ul style="list-style-type: none"> <li>❖ Stick, stones, oranges, paw paw</li> <li>❖ Use local material to best explain the activities.</li> <li>❖ Prescribed textbook</li> <li>❖ Supplementary Textbooks</li> </ul>	<ul style="list-style-type: none"> <li>❖ Problems solving showing the solutions of commutative, associative properties; and properties of zero and one.</li> <li>❖ Home works, quizzes and tests</li> </ul>

		<p>using multiplication;</p> <p><b>Demonstration of the closure property (?)</b> The numbers in the set are called the <b>elements</b>. The set of whole numbers is <b>closed under addition</b> if the addition of any two elements from the set produces another element in the set. If an element outside the set is produced, then the set of whole numbers is not closed under addition.</p> <p>❖ use whole numbers in addition and multiplication (with factor less than 100)</p>		
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## SEMESTER TWO

**GRADE: 3**

**PERIOD: IV**

Topic: Fractions

Learning Objectives: Upon completion of this topic, students will:

1. Identify parts of a whole and its shaded parts
2. Identify and count the divided parts
3. Name each fractional part
4. Change a given fraction to equivalent ones.
5. Solve addition of fractions
6. Multiply fraction by whole numbers showing the two parts (numerators and denominators)
7. Use  $>$ ,  $<$  or  $=$  to have sentence true

Outcomes	Contents	Activities	Materials	Evaluation
<p>Learners are able to: Demonstrate and appreciate fractional parts of whole numbers in real life.</p> <ul style="list-style-type: none"> <li>❖ Distinguish the monetary value of currency base on the denomination</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fraction</li> <li>▪ Definition of fraction</li> <li>▪ Comparison of fraction</li> <li>▪ Equivalent fractions</li> <li>▪ Addition of from fraction</li> <li>▪ Mixed fraction</li> <li>▪ Subtraction of like fraction</li> </ul>	<p><b>Inclusive and differentiated learning</b></p> <p>Display a poster (or draw on the chalk board), showing pictures wholes, halves, thirds, or fourths. (2) Ask learners to identify halves, thirds, or fourths .</p>	<ul style="list-style-type: none"> <li>❖ Rulers, geometric set, orange, paw paw, and other local materials.</li> <li>❖ Prescribed textbook</li> <li>❖ Supplementary textbooks</li> </ul>	<ul style="list-style-type: none"> <li>❖ Participation</li> <li>❖ Classwork quizzes and tests.</li> </ul>

	<p>▪ Multiplication of a whole number by a fraction.</p>	$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ <ul style="list-style-type: none"> <li>❖ Divide the rectangle into 4 parts and shade one-fourth showing the shaded part of a whole</li> <li>❖ Naming fractional parts of the rectangle above after dividing it into 4 parts.</li> <li>❖ Learners will use number line to show fractions</li> <li>❖ Learners, will be given fraction problems as classwork in group to be added</li> <li>❖ Using symbols to make sentence true.</li> </ul> <p>Write each of the first</p>		
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		<p>ten counting numbers on a piece of paper and give to the learners. Ask any two, three, or four to line up in order, with the smallest number on the left, followed by the next, and so on, to the pupil with the largest. For example, pupils with 4, 2, 5, and 7 will line up so that : <math>2 &lt; 4 &lt; 5 &lt; 7</math>. Write the pairs of numbers on the chalk board as follows:</p> <p>❖ ____ is less than ____ or ____ <math>&lt;</math> ____.</p> <p>❖ ____ is equal to ____ or ____ <math>=</math> ____.</p> <p>❖ ____ is greater than ____ ____ <math>&gt;</math> ____.</p>		
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## **SEMESTER ONE**

**GRADE: 3**

**PERIOD: V**

Unit Topic: measurement

Learning objectives: By the end of this unit, learners will be able to:

1. Recognize and use the standard units of measurement in English and the metric systems; such as capacity, weight, and linear measurement.
2. Measure the length of objects
3. Compare height with bar graph
4. Compare and calculate the parameter, areas, volume of an objects
5. Tell time, add and subtract unit of time
6. Add, Subtract, multiply, and divide unit of money
7. Add, subtract, multiply, and divide unit of volume and weight in English and Metric system.

Outcomes	Contents	Activities	Materials	Evaluation
<p>Learners are able to:</p> <p>distinguish English system from metric system and do simple calculations</p> <p>demonstrate skills of addition, subtraction, multiplication, and division when dealing with money.</p>	<ul style="list-style-type: none"> <li>▪ Measurements length, capacity, weight and height in English and metric system</li> <li>▪ Unit of time, Unit of money.</li> <li>▪ Basic operations on volume, weight, areas and parameters.</li> </ul>	<p>Activities involving:</p> <ul style="list-style-type: none"> <li>❖ Learners will measure length, capacity, weight, height and volume in metric and English systems;</li> <li>❖ Learners will use the clock to tell times using minute and hour hands;</li> <li>❖ Learners will work in groups to solve word problems involving Liberian money;</li> <li>❖ Learners will use the basic operations concepts to</li> </ul>	<p>Cup, pint, quart, gallon, ounce, hundred, weight, inch, foot, yard,</p> <p>Liberian banknotes and coins</p> <p>clock or clock drawn on postal sheet or chalk board.</p> <p>Prescribed textbook and supplementary books.</p>	<p>Exercises involving:</p> <p>Classwork</p> <p>Homework</p> <p>Quizzes</p> <p>Test</p>

		measure volume, weight, areas, and perimeter.		
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## SEMESTER TWO

**GRADE: 3**

**PERIOD: VI**

Unit Topic: Geometry

Learning Objectives: Upon completing this unit, students will be able to:

- Classify simple geometric figures as line segments, rays, lines, square, cone, right angle, rectangles, triangles, and vertex.
- Identify various types of angles

- Categorize and read geometric figures .

Outcomes	Contents	Activities	Materials	Evaluation
<p>Learners are able to:</p> <p>Identify figures in the design of structures (bridges, houses, etc.)</p> <p>Use population data to read and interpret bar graph, line graph, pie chart, mean, mode, medium and average.</p>	<p>Measurement of geometric figures</p> <p>Identification of geometric figures</p> <p>Reading and interpreting figures from charts and graphs.</p> <p>Types of angles.</p>	<p><b>Inclusive and differentiated learning</b></p> <p><b>Class exercises:</b> Learners work in groups using the ruler to draw and measure line segments, rays, lines and use protractor to draw and measure angles; Read and interpret the following from the bar graph, line graph, pie chart, mode, mean, medium and average using the given population data; Construct a frequency table using the data</p> <p>Make a bar and line graphs</p> <p>Make a circle graph.</p> <p>Find the mean, mode and median of the data</p> <p>Draw and discuss characteristics of the following geometric figures such as: Cube, Sphere, Rhombus, Cylinder, Cone, Pyramid, Trapezoids, Prism, Rectangle, and Solid.</p> <p>Identify and draw angles.</p>	<p>Geometry set</p> <p>Visual aids</p> <p>Geometry set for black demonstration</p> <p>Prescribed textbook and supplementary books; Poster sheet showing the population data, yard sticks, poster sheets and colorings</p>	<p><b>Competency:</b></p> <p><b>Tool:</b></p> <p>Group classwork</p> <p>Participation</p> <p>Homework</p> <p>Quizzes</p> <p>Test</p>

## **SEMESTER ONE**

**GRADE: 4**

**PERIOD: I**

Topics: Numeration, Addition and Subtraction

Learning Objectives: At the end of this topic, the learners will:

- Read and write whole numbers up to hundred thousand
- Compare and order whole numbers to hundred thousand
- Round whole numbers up to thousand
- Add and Subtract whole numbers using population data on births, deaths, and migration

Out comes	Content	Activities	Materials	Evaluation
<ul style="list-style-type: none"> <li>Learners are able to:</li> <li>Use population data of births and death to add and subtract whole numbers.</li> <li>apply computation skills of addition and subtraction to real life situation</li> </ul>	<p>Place value to hundred thousand</p> <p>Comparing and Ordering whole number</p> <p>Round whole number to thousand</p> <p>Addition of whole numbers using population data</p> <p>Subtraction of whole numbers using population data</p> <p>Solution of word problems</p>	<p><b>Inclusive and differentiated learning</b></p> <p><b>Class exercise:</b> Read and write whole numbers up to hundred thousand; compare and Order whole numbers up to hundred thousand ; Add two or more (births and deaths) from the pollution data; Subtract two or more components of (births and deaths) from the population data.</p>	<ul style="list-style-type: none"> <li>Place value chart</li> <li>Place value strips</li> <li>Life skills POPFLE</li> <li>Resource book</li> <li>Poster sheet showing population data,</li> </ul>	<p>Exercises involving:</p> <ul style="list-style-type: none"> <li>❖ Presentation of Project</li> <li>❖ Classwork, homework, quizzes and test</li> </ul>

## Grade Four Mathematics

### SEMESTER ONE

**GRADE: 4**

**PERIOD: II**

Topic: Multiplication and Division of whole numbers

Learning Objectives: At the end of this topic, the learners will:

1. Identify multiplication facts and properties
2. Multiply multiples of 10's, 100's, 1000's
3. Multiply 2, 3, or 4 Digits by 1-Digit
4. Divide 2, 3, or 4-Digit numbers by 1-Digit Divisor
5. Divide whole numbers with zero in the quotient
6. Solve problem involving division

Out comes	Content	Activities	Materials	Evaluation
<ul style="list-style-type: none"><li>▪ Learner will be able to:</li></ul> <ol style="list-style-type: none"><li>1. Apply computational skills about multiplication and division to read life situations</li><li>2. Keep records and distribute items</li><li>3. Analyze basic data for decision-making.</li></ol>	<ul style="list-style-type: none"><li>▪ Multiplication facts and properties</li><li>▪ Multiply multiples of 10's, 100's, 1000,s</li><li>▪ Multiply 2, 3, 4 digit numbers by 1-digit numbers</li><li>▪ Dividing multiples of ten by 1-digit numbers</li><li>▪ Divide whole numbers with zeros in the quotient</li></ul>	<b>Inclusive and differentiated learning</b> <ul style="list-style-type: none"><li>- Using flash cards, doubles, or graph paper for multiplication facts and properties;</li><li>- Using graph paper to show 4 by 26 rectangle to show multiplication concepts of 2, 3, or 4 digits numerals; Using base 10 counters abacus to</li></ul>	<ul style="list-style-type: none"><li>▪ Flash cards with basic multiplication Facts</li><li>▪ Graph paper</li><li>▪ Base 10 counters/abacus</li></ul>	Classwork Homework Quizzes Project Test

**Grade Four Mathematics**

		<p>illustrate division</p> <p>Multiply multiples of 10's, 100's, 1000s Multiply 2, 3, or 4 Digits by 1-Digit</p> <p>Divide 2, 3, or 4-Digit numbers by 1-Digit Divisor Divide whole numbers with zero in the quotient Solve problem involving division</p>		
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**Grade Four Mathematics**

**SEMESTER ONE**

**GRADE: 4**

**PERIOD: III**

Topics: Number Theory and Fraction

Learning Objectives: Upon completion of this topic, the students will:

1. Identify even and odd numbers
2. Identify factors and multiples
3. Find LCM and GCF of numbers
4. Find parts of a set
5. Write equivalent fractions
6. Simplify fractions
7. Add fractions
8. Subtract fractions
9. Solve problems involving multi-step problems

Out comes	Content	Activities	Materials	Evaluation
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### Grade Four Mathematics

<p>Learning are able to:</p> <ul style="list-style-type: none"> <li>❖ Understand number theory</li> <li>❖ Apply fractional concepts to real -life situations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Even and Odd numbers</li> <li>▪ Factors and Multiples</li> <li>▪ LCM common multiples</li> <li>▪ Greatest common factor</li> <li>▪ Parts of a set</li> <li>▪ Equivalent fraction</li> <li>▪ Simplifying fractions</li> <li>▪ Adding fractions</li> <li>▪ Subtracting fractions</li> </ul>	<p><b>Inclusive and differentiated learning</b></p> <p>Explore and write even and odd numbers as sets using number chart.</p> <p>Determine the p-rime factors of a number.</p> <ul style="list-style-type: none"> <li>▪ Find factors and multiples of a given number</li> <li>▪ list multiples of a set of numbers and sort out common</li> <li>▪ use base 10 counters to illustrate division</li> </ul> <p>Add and Subtract fractions</p> <ul style="list-style-type: none"> <li>❖ Solving problems involving multi-step problems; (using more than one operation)</li> <li>❖ Simplify fractions</li> </ul>	<ul style="list-style-type: none"> <li>▪ A chart of number up to 100 Paper Orange Fraction Strips Made from paper</li> </ul>	<p>Participation</p> <p>Classwork</p> <p>Homework</p> <p>Quizzes</p> <p>Test</p>
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**GRADE: 4****PERIOD: IV**

Topic: Multiplication and Division of 2-Digits multipliers and Divisors (Decimals to Hundredths)

Learning Objectives: At the end of the topic, the learners will:

1. Multiply 2-Digits factors of multiples of 10's, 100's, 1000's
2. Estimate products involving 2-Digits multipliers
3. Multiply 2, 3, or 4 – Digits multipliers
4. Divide multiples of 10's, 100's, 1000's by 2- Digit Divisors mentally
5. Estimate quotient of 2- Digit Divisors
6. Divide 2, 3, or 4 – Digit numbers by 2-Digit Divisors
7. Read and write decimal numerals up to hundredths place
8. Compare and order decimal numerals up to hundredths place

Out comes	Content	Activities	Materials	Evaluation
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### Grade Four Mathematics

<ul style="list-style-type: none"> <li>Students will apply their skills acquired in packing and distribution of items</li> <li>Develop concepts of decimal number</li> </ul>	<ul style="list-style-type: none"> <li>Multiplying multiples of 10's, 100's, 1000's</li> <li>Estimating products of 2-Digits multiplier</li> <li>Multiplying 2, 3, 4 – digits numbers</li> <li>Numerals by 2 –digits</li> <li>Estimating quotients</li> <li>Dividing by 2- Digit divisors</li> <li>Decimal numerals up to hundredths place <ul style="list-style-type: none"> <li>Comparing and Ordering decimal numerals up to hundredths place</li> </ul> </li> <li>Probability of simple events (optional)</li> </ul>	<ul style="list-style-type: none"> <li>Learners working in groups will :</li> <li>Multiply and divide whole numbers of 2-digit multipliers or divisors</li> <li>Role playing as shopkeeper order and distribute items in multiples of 10's, 100's or 1000's</li> <li>Compare and order set of data</li> </ul>	<p>Graph Sheets Place Value models Calculator computer Prescribed textbook and supplementary books</p>	<p>Classwork Homework Quizzes Test</p>
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**Grade Four Mathematics**

**First Semester**

**SEMESTER TWO**

**GRADE: 4**

**PERIOD: V**

Unit Topics: Measurement

Learning Objectives: Upon completion of this topic, learners will:

1. Estimate time
2. Find elapsed time
3. Estimate customary units of lengths
4. Measure lengths using customary units
5. Estimate customary units of mass and capacity
6. Estimate metric units of lengths, capacity and mass
7. Convert subunits of lengths and weight in the metric system
8. Perform addition and subtraction of measurement of lengths and weights
9. Find the perimeters and areas of squares and rectangles

Out comes	Content	Activities	Materials	Evaluation
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<p>Learner are able to:</p> <ul style="list-style-type: none"> <li>▪ Apply skills of estimation in planning activities considering the length of time required.</li> <li>▪ Appreciate the values of skills acquired in estimating lengths, weights capacity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Estimating time</li> <li>▪ Finding elapsed time</li> <li>▪ Estimating customary units of lengths</li> <li>▪ Converting selected units of measure</li> <li>▪ Estimating metric units of measure</li> <li>▪ Converting selected metric units of measure</li> <li>▪ Perimeters</li> <li>▪ Finding areas of squares and rectangles</li> <li>▪ Finding volume</li> </ul>	<p><b>Inclusive and differentiated learning</b></p> <p>working in groups will estimate how long an activity may last (saying the alphabet; cooking rice; length of a school day; to become a doctor)</p> <ul style="list-style-type: none"> <li>▪ Demonstrate finding elapsed time using a toy clock and by addition and subtraction (end time, start time)</li> <li>▪ Estimate the length of a pen, table, classroom, size of foot)</li> <li>▪ Measuring classroom objects using customary units of length</li> <li>▪ Demonstrate converting metric units of weight and capacity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Toy or paper</li> <li>- Clock, rulers, meter stick, scale cups, gallons</li> <li>teaspoon rope, tapeline</li> </ul>	<p>Exercises involving estimation of time required to do a job</p> <p>Problem solving involving conversion of metric unit of measurement.</p>
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## SEMESTER TWO

**GRADE: 4**

**PERIOD: VI**

Topic: Geometry and Statistics

Learning Objectives: Upon completion of this topic, the learners will:

1. Identify geometric figures of line, line segments, rays, interesting lines, parallel lines
2. Identify angles by shapes as right angle, less than right angle, or greater than right angle; perpendicular lines
3. Identify triangles, quadrilaterals or pentagon, hexagon as polygon
4. Identify parts of a circle
5. Identify solid figures – spheres, cylinder, cones, cubes, rectangular prisms
6. Read and interpret bar graphs, line graphs, pie chart, mode, mean, median, & Average

Out comes	Content	Activities	Materials	Evaluation
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<p>Learners are able to:</p> <p>appreciate geometry as foundation of architecture and construction (building roads, boxes, balls)</p> <p>Use population data to read and interpret bar graph, line graph, pie chart, mean, mode, medium and average.</p>	<ul style="list-style-type: none"> <li>Geometry concept( ideas)</li> <li>Angles</li> <li>Polygons</li> <li>Circle</li> <li>Solid figures</li> </ul> <p>Reading and interpreting figures from charts and graphs such as Bar graphs, line graphs, pie chart</p>	<p><b>Inclusive and differentiated learning</b></p> <p>Class exercises: identify and recognize simple geometric figures; point, lines, rays; line segment; sorting out polygons according to sides and to identify each; Trace and cut out a circular shape in a paper, fold the paper circle in halves to identify parts of a circle;</p> <p>Collect data about family size and display the data on a bar graph, line graph, pie chart and find the mode, medium, and mean using the given population data</p> <p>solve word problems involving drawing of diagrams</p>	<ul style="list-style-type: none"> <li>Geometric set; straight edge, cut paper</li> <li>computer</li> </ul> <p>Prescribed textbook and supplementary books</p> <p>Poster sheets showing bar graph, line graph and pie chart</p> <p>Geometry set</p>	<p>Project</p> <p>Participation</p> <p>Classwork</p> <p>Homework</p> <p>Quizzes</p> <p>Test</p>
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## SEMESTER ONE

**GRADE: 5**

**PERIOD: I**

Topic: Multiplication and Division of whole numbers and Decimals number theory

Learning Objectives: upon completion of this topic, the learners will:

1. Identify properties of operation (commutative, associative, distributive, zero and Identity)
2. Multiply and divide whole numbers and decimals
3. State the divisibility rules for 1-5
4. Identify prime and composite numbers
5. Find GCF and LCM
6. Write factor for parts of a set
7. Find equivalent fraction
8. Simplify fraction

Out comes	Content	Activities	Materials	Evaluation
Learners are able to:  1.Apply their knowledge and skills of operations, of whole numbers and decimal to real life situations  2.Develop their understanding of	1.Properties of multiplication 2.Multiplying and dividing whole numbers and decimals 3.Divisibility rules 4.Prime and composite numbers 5.LCM and GCF 6.Equivalent fractions 7.Simplifying fractions	<b>Inclusive and differentiated learning</b>  ❖ use graph paper to show multiplication properties ❖ multiply whole numbers and decimals ❖ Divide whole numbers and decimals ❖ Help learners use the sum of Eratosthenes to identify prime and composite numbers up	❖ Graph paper ❖ Base 10 models ❖ Square paper ❖ Prescribed textbook ❖ Supplementary textbook	<b>Competencies:</b>  <b>Tool:</b>  ❖ Presentation ❖ Home work ❖ Classwork ❖ Quizzes ❖ Test

number theory and fractions		<p>to 50</p> <ul style="list-style-type: none"> <li>❖ Guide learners to write equivalent fraction and simplifying fraction by using square paper folded to show equivalent fraction</li> </ul>		
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## Grade Five Mathematics

### SEMESTER ONE

**GRADE: 5**

**PERIOD: II**

Unit Topic: Different kinds of numbers

Learning Objectives: Upon completion of this topic, learners will:

1. Identify prime numbers, even and odd numbers
2. Identify and work with square numbers
3. Determine prime factors of numbers
4. Identify and state rules for rounding off numbers
5. Identify and apply estimation techniques
6. Using arrays to solve problems
7. Solve problems on estimation
8. Solve problems on rounding off numbers and array numbers
9. Solve problems using square roots

Out comes	Content	Activities	Materials	Evaluation
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### **Grade Five Mathematics**

<ul style="list-style-type: none"><li>▪ Leaners are able to: demonstrate skills in the use of different kinds of numbers and appreciate their</li><li>▪ importance in real life.</li></ul>	<ul style="list-style-type: none"><li>▪ Prime factors</li><li>▪ Even and odd numbers</li><li>▪ Square numbers</li><li>▪ Solving problems using different kinds of numbers including prime factorization, rounding numbers, estimation and arrays</li></ul>	<p><b>Inclusive and differentiated learning</b></p> <ul style="list-style-type: none"><li>❖ working in smaller groups shall do the following activities:</li><li>❖ Discuss and identify prime factors of numbers not more than 2-digit numbers</li><li>❖ Multiply the following numbers 1,2,3,4,5,6,7,8,9,10,11,12 by themselves and find their products</li><li>❖ Find prime factors of 2-digit numbers, round off numbers to the nearest 10, 100 and 1000</li><li>❖ Employ estimation techniques to estimate products and quotients of 2-digit numbers,</li><li>❖ Use array of numbers to find the products of two numbers</li></ul>	<ul style="list-style-type: none"><li>❖ Square paper</li><li>❖ Prescribed textbooks</li><li>❖ Supplementary textbooks</li></ul>	<ul style="list-style-type: none"><li>❖ Presentation</li><li>❖ Home work</li><li>❖ Quizzes</li><li>❖ Tests</li></ul>
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## Grade Five Mathematics

### SEMESTER ONE

**GRADE: 5**

**PERIOD: III**

Topic: Addition and Subtraction of Fractions and Mixed numbers

Learning Objectives: Upon completion of the topic, learners will:

1. Add and subtract fractions and mixed numbers
2. Multiply and divide fractions
3. Solve word problems involving fractions
4. Convert fractions to decimals and vice – versa
5. Compare and order fractions

Out comes	Content	Activities	Materials	Evaluation
Learners are able to: Apply the skills and concepts of operations of fraction to daily life situation  Analysis and work fractional problems of changing fraction to decimals and vice –versa all types	<ol style="list-style-type: none"><li>1. Adding fractions and mixed numbers with like denominators;</li><li>2. Subtracting fractions and mixed numbers with like denominators;</li><li>3. Adding and subtracting fractions with unlike denominators;</li><li>4. Multiplying fractions and mixed numbers;</li><li>5. Dividing fractions;</li><li>6. Compare and order fractions;</li><li>7. Converting fractions to Decimal;</li><li>8. Solve word problems involving fractions</li></ol>	<b>Inclusive and differentiated learning</b> <ul style="list-style-type: none"><li>❖ Using of fraction strips to add and subtract fractions with like denominators;</li><li>❖ Making flash cards with pairs of numbers that are potential denominators;</li><li>❖ Using the flash cards number to show the LCM;</li><li>❖ Using of counters to illustrate multiplication and division of fraction concepts;</li><li>❖ Using base 10 fraction</li></ul>	<ul style="list-style-type: none"><li>❖ Fraction strips</li><li>❖ Flash cards</li><li>❖ Counters</li><li>❖ Graph paper</li><li>❖ Base 10 fraction model</li><li>❖ Prescribed textbook</li><li>❖ Supplementary books</li></ul>	<ul style="list-style-type: none"><li>❖ Group work</li><li>❖ Home work</li><li>❖ Quizzes</li><li>❖ Test</li></ul>

## Grade Five Mathematics

		<p>model to illustrate how fractions and decimals are related;</p> <p>❖ Solving word problems involving operations of fractions.</p> <p>Example: Pastor Pewee walked <math>2\frac{3}{8}</math> km to a village. He walked <math>3\frac{7}{8}</math> km to the next village. What was the total distance walked by the pastor?</p> <p>a. Add the fractions and rename. b. Add the whole numbers. C. Add result.</p> $  \begin{array}{r}  2\frac{3}{8} \\  + 3\frac{7}{8} \\  \hline  3\frac{7}{8}  \end{array}  $		
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**Grade Five Mathematics**

		$3\frac{3+7}{8} = \frac{10}{8} = 1\frac{2}{8} = 1\frac{1}{4}$ $5 + 1\frac{1}{4} = 6\frac{1}{4}$ <p>Pastor Pewee walked a total distance of <math>6\frac{1}{4}</math> km</p>		
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**Grade Five Mathematics**

**SEMESTER TWO**

**GRADE: 5**

**PERIOD: IV**

Topic: Measurement

Learning Objectives: At the end of the topic, the learners will:

1. Find elapsed time
2. Estimate length, weight, capacity using selected units of measure
3. Adding and Subtracting customary units of measure
4. Converting selected units of measure in the metric units (mm; cm; m; km; g; kg; ml; L)
5. Finding perimeters of polygons
6. Finding areas of parallelograms and triangles
7. Finding volume of prisms
8. Estimate temperature

Out comes	Content	Activities	Materials	Evaluation
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**Grade Five Mathematics**

Learners are able to: Apply their skills and concepts of measurement in the homes, clinic and industries	<ol style="list-style-type: none"><li>1. Finding elapsed time</li><li>2. Estimating units of measure (English/Metric)</li><li>3. Adding Metric units of length</li><li>4. Converting Metric units finding perimeters areas, volume</li><li>5. Estimating temperature on the Fahrenheit and Centigrade scales</li></ol>	<p><b>Inclusive and differentiated learning</b></p> <p>working in smaller groups should do the following activities:</p> <ul style="list-style-type: none"><li>❖ Using cut-out paper clock to find elapsed time;</li><li>❖ Estimation of the lengths of various objects in the classroom through measuring them;</li><li>❖ Finding of perimeter and areas using graph paper;</li><li>❖ Finding of volume of local containers using number cubes;</li><li>❖ Estimation of temperature using boiling and freezing room point, normal body and temperature as benchmark to estimate temperature of different activities.</li></ul>	<ul style="list-style-type: none"><li>❖ Cut- out paper clock</li><li>❖ Rulers</li><li>❖ Meter stick Cubes</li><li>❖ Graph paper</li><li>❖ Thermometer</li><li>❖ Prescribed textbooks</li><li>❖ Supplementary textbooks</li></ul>	<ul style="list-style-type: none"><li>❖ Presentation</li><li>❖ Classwork</li><li>❖ Home work</li><li>❖ Quizzes</li><li>❖ Tests</li></ul>
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## Grade Five Mathematics

### SEMESTER TWO

**GRADE: 5**

**PERIOD: V**

Topic: Geometry

Learning Objectives: Upon completion of this topic, learners will:

1. Define, identify, construct, and measure angles and geometric figures
2. Classify triangles by sides and angles
3. Classify quadrilaterals
4. Identify congruent figures
5. Solve multi-step problems
6. Find circumference of a circle

Out comes	Content	Activities	Materials	Evaluation
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<p>Learners will apply geometry skills and concepts in appreciating the designs of building, roads, chairs tables and art work.</p>	<ol style="list-style-type: none"> <li>1. Geometry ideas/points</li> <li>2. Lines, rays, line segments, parallel and perpendicular lines</li> <li>3. Kinds of angles</li> <li>4. Measuring angles</li> <li>5. Classifying triangles and quadrilaterals</li> <li>6. Solid figures</li> <li>7. Problem solving involving multi-step</li> </ol>	<p>Learners working smaller groups shall do the following activities:</p> <ul style="list-style-type: none"> <li>❖ Use of rulers, compass, protractor to measure and construct angles and geometric figures;</li> <li>❖ Draw different shapes of triangles and quadrilateral and classify each as a triangle, square; Rectangle, parallelogram, rhombus or trapezoid;</li> <li>❖ Find the circumference of a circle using its diameter;</li> <li>❖ Solve problems involving 2 different operations</li> </ul>	<p>Geometry set, straight edge rope, paper Protractor Prescribed textbook and supplementary books</p>	<ul style="list-style-type: none"> <li>▪ Presentation</li> <li>▪ Classwork</li> <li>▪ Homework</li> <li>Quiz</li> <li>Test</li> </ul>
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## SEMESTER TWO

**GRADE: 5**

**PERIOD: VI**

Topic: Ratio, Proportion, Percent, and Statistics

Learning Objectives: Upon completion of this topic, learners will:

1. Define and write ratio and proportion
2. Write percentage as a ratio
3. Express two or more ratio as proportion
4. Solve problems involving finding percent of a number
5. Read and make bar graphs, line graphs and circle graphs
6. Find the mean of a set of data
7. Find rates

Out comes	Content	Activities	Materials	Evaluation
<p>Learners are able to:</p> <p>compare two or more quantities of the same units to daily life activities;</p> <p>Read and make bar graph, line graph and circle graph</p> <p>Interpret data presented and make informed decision</p>	<ol style="list-style-type: none"> <li>1. Ratio and proportion</li> <li>2. Rates</li> <li>3. Percent and Fraction</li> <li>4. 4. Finding percent of a number</li> </ol> <p>Arrangement of given population data in ascending or descending order.</p> <p>Representing the arranged data in a frequency table.</p> <p>Using the arranged data to find the mean, mode and median</p>	<p><b>Inclusive and differentiated learning</b></p> <ul style="list-style-type: none"> <li>❖ Writing of ratios and proportions;</li> <li>❖ Using of proportions to make simple mixture;</li> <li>❖ Converting of percent to decimals;</li> <li>❖ Solving of problems involving percent of number;</li> <li>❖ Using the population data,(births, deaths, teenage pregnancy, HIV ) data and arrange the data in descending or ascending order. Construct a frequency using the data; make a bar, line, and circle graphs. Find the mean, mode and medium of the data. Collecting of data about favorite color and</li> </ul>	<p>- Graph paper</p> <p>Stoppers</p> <p>Counters</p> <p>Bag</p> <p>Prescribed textbook and supplementary books</p>	<p><b>Competencies</b></p> <p><b>Tool</b></p> <p>Participation</p> <p>Project</p> <p>Classwork</p> <p>Homework</p> <p>Quizzes</p> <p>Test</p>

	Constructing and Reading bar, line, pictograph and circle graph	<p>displaying of data on a bar graph;</p> <p>❖ Collecting of different stoppers place in a bag and predict which stopper is more likely to be picked.</p>		
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## SEMESTER ONE

**GRADE: 6**

**PERIOD: I**

Unit I: Topic: Sets of real numbers, symbols to describe sets

Learning Objectives: Upon completion of this topic, learners will:

1. Use the power of set method to determine numbers of sets
2. Use set builder notation to describe sets
3. Apply skills and knowledge of intersection and union sets to find solution to daily life problem
4. Classify rational numbers into subset of whole numbers
5. Perform addition, subtraction, multiplication and division of integers

Out comes	Content	Activities	Materials	Evaluation
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<p>Learners are able to: acquire analytical skills to solve problems of daily life situation.</p>	<ul style="list-style-type: none"> <li>▪ Sets</li> <li>▪ Description of sets and examples</li> <li>▪ Intersection and union of sets</li> <li>▪ Sets of rational and irrational numbers</li> <li>▪ Sets of points</li> <li>▪ Sets of prime numbers</li> <li>▪ Replacement sets</li> <li>▪ Venn diagram of intersection and union relations</li> </ul>	<p style="text-align: center;"><b>Inclusive and differentiated Learning</b></p> <p>Define set(real numbers) using set notation</p> <ul style="list-style-type: none"> <li>▪ Discuss and identify the following sets and relate them to the Venn diagram               <ul style="list-style-type: none"> <li>✓ Universal set</li> <li>✓ Subset</li> <li>✓ Intersection of sets</li> <li>✓ Union of sets</li> <li>✓ Empty and disjoint sets of</li> </ul> </li> </ul> <p>. Draw Venn diagram of union and intersection sets Using symbols E &amp; to membership and non-membership</p> <p>Reading Venn diagram Identifying replacement of sets Using symbols of power of sets to determine number of subsets</p>	<ul style="list-style-type: none"> <li>- Use local objects to represent sets and symbols</li> <li>- Rocks, sticks, picture of objects</li> <li>Prescribed textbook</li> <li>Supplementary textbook</li> </ul>	<p><b>Competency:</b></p> <p><b>Tool:</b></p> <p>Participation Classwork Homework Quizzes Test</p>
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## SEMESTER ONE

**GRADE: 6**

**PERIOD: II**

Topic: Numeration – Number Base

Specific Objectives: Upon completion of this topic, learner will:

1. Add and subtract numbers in base ten and five
2. Multiply number in base ten and five

Out comes	Content	Activities	Materials	Evaluation
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Learners are able to: apply their knowledge and skills of bases in representing issues in multiple ways and create several scenarios of an issue in real life situation in any society	<ul style="list-style-type: none"> <li>▪ Base ten number system</li> <li>▪ Change base ten to base five numerals and vice versa</li> <li>▪ Add in base five</li> <li>▪ Subtract in base five</li> <li>▪ Multiply numbers in base ten to base five</li> </ul>	<p style="text-align: center;"><b>Inclusive and differentiated learning</b></p> <ul style="list-style-type: none"> <li>▪ count in base ten</li> <li>▪ Group by five To change base ten to base five numerals and vice versa</li> <li>▪ Add in base five guide</li> <li>▪ Subtract in base five</li> <li>▪ Multiply base ten and base five</li> </ul>	- Use sticks, rocks, stones, counters, and other local materials available to make learning effective. Textbook and supplementary books	Participation Classwork Homework Quizzes Test
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## SEMESTER ONE

**GRADE: 6**

**PERIOD: III**

Unit Topic: Operations

Learning Objectives: Upon completion of this topic, learners will:

1. Add, subtract, multiply and divide decimals
2. Round off decimals to the nearest tenth, hundredths and thousandths

Out comes	Content	Activities	Materials	Evaluation
<ul style="list-style-type: none"> <li>▪ Learners are able to: apply their knowledge and skills of operation of whole numbers and decimal to real life in their environment or community</li> <li>▪ Students will know how to round off decimal to the nearest 10<sup>th</sup>, 100<sup>th</sup> and 1000<sup>th</sup></li> </ul>	<ul style="list-style-type: none"> <li>▪ Change fractions to decimals</li> <li>▪ Add and subtract decimals</li> <li>▪ Add and subtract decimals from the whole numbers</li> <li>▪ Multiply decimals numerals by other decimal numerals and vice versa</li> <li>▪ Round off decimals to the nearest tenth, hundredth and thousandth</li> </ul>	<p><b>Inclusive and differentiated learning</b></p> <ul style="list-style-type: none"> <li>▪ Solving problems in addition and subtraction of decimal numbers</li> <li>▪ Multiplying whole numbers by decimal numbers</li> <li>▪ Multiply decimal numbers by decimal numbers</li> <li>▪ Dividing whole numbers by decimal numbers</li> <li>▪ Decimal numbers by decimal numbers</li> </ul>	<p>- Use orange, paw-paw, sticks, rocks, counter and other local materials. Prescribed textbook Supplementary textbook</p>	<ul style="list-style-type: none"> <li>▪ Presentations</li> <li>▪ Assignment</li> <li>▪ Class work</li> <li>▪ Homework</li> <li>▪ Quizzes</li> <li>▪ Tests</li> </ul>

		<ul style="list-style-type: none"> <li>Practicing how round off decimal to the nearest <math>10^{\text{th}}</math>, <math>100^{\text{th}}</math> and <math>1000^{\text{th}}</math></li> </ul>		
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## SEMESTER TWO

**GRADE: 4**

**PERIOD: IV**

Unit Topic A: Number Theory

Learning Objectives: Upon completion of this topic, learners will:

1. Find square and square roots
2. Find cube of whole numbers using factorization methods

Out comes	Content	Activities	Materials	Evaluation
Learners are able to : Use their knowledge and skills in recognizing square and square roots and also cube of whole numbers.	<ul style="list-style-type: none"> <li>▪ Number theory</li> <li>▪ Square and square roots</li> <li>▪ Cubes of whole numbers using factors method</li> <li>▪ LCM and GCF</li> </ul>	<b>Inclusive and differentiated learning</b> <ul style="list-style-type: none"> <li>▪ Recognize perfect square (e.g. 4, 9, 16, 25, 36, 49 etc)</li> <li>▪ Finding square roots</li> <li>▪ (e.g. <math>\sqrt{4}</math>, <math>\sqrt{9}</math>, <math>\sqrt{16}</math> Fine cubes of whole numbers using factorization</li> </ul>	<ul style="list-style-type: none"> <li>- Calculator</li> <li>- Prescribed textbooks</li> <li>Geometric set etc.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Assignment</li> <li>▪ Class work</li> <li>▪ Quizzes</li> <li>▪ Tests.</li> </ul>

		<p>method</p> <ul style="list-style-type: none"> <li>▪ Finding prime factor of whole number</li> <li>▪ How to find roots using factor method.</li> </ul>		
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## SEMESTER TWO

**GRADE: 6**

**PERIOD: IV**

Topic B: Measurement

Learning objectives: Upon completion of this topic, learners will:

1. Perform the four basic operations on measurement in both English and metric system
2. Convert unit from one system to another
3. Measure areas, volume, perimeter, radii, circumference, square, Rhombuses, circle rectangle, cylinder, sphere, and other geometries shapes.
4. Calculate those in objectives 3 by using appropriate formulae.

Outcomes	Contents	Activities	Materials	Evaluation
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<ul style="list-style-type: none"> <li>▪ Learners are able to: apply knowledge and skills acquired to appreciate the dimensions of geometric objects and work in several units of measurement in homes and industry.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Measurement of geometric figures</li> <li>▪ Add, subtract, multiply and divide in English and metric system</li> <li>▪ Conversion of unit of measurement, from English to metric, vice versa</li> <li>▪ Find areas, volume, perimeter, and circumference by measurement and using formulae.</li> <li>▪ Measurement of angles.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Inclusive and differentiated learning</b></li> <li>▪ Adding, subtracting, multiplying, and dividing unit of measurement in English and metric systems.</li> <li>▪ Using formulae to calculate areas, volume, perimeter, circumference, radii</li> <li>▪ converting from one system to another</li> <li>▪ Constructing and measuring weight, triangle, acute, obtuse and reflex angles.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Geometric sets, string</li> <li>▪ Calculators, Protractor</li> <li>▪ Use other local materials when those above are not available</li> <li>▪ Prescribed textbooks and supplementary books..</li> </ul>	Presentation Classwork Homework Quizzes Test
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## SEMESTER TWO

**GRADE: 6**

**PERIOD: V**

Topic A: Operations – Four operations with fractions

Learning Objectives: Upon completion of this topic, learners will:

1. Add and subtract fractions
2. Multiply and divide fractions

Out comes	Content	Activities	Materials	Evaluation
<ul style="list-style-type: none"> <li>▪ Learners are able to:</li> <li>▪ apply skills in forming mixtures and other products in their appropriate proportions and apportion things adequately.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Add simple fraction of unit numeration and denomination (less than ten)</li> <li>▪ Subtraction of fractions</li> <li>▪ Add and subtract fractions from whole numbers and fractions</li> <li>▪ Multiplication of fractions</li> <li>▪ The reciprocals</li> <li>▪ Divide whole numbers by fractions and vice verse</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Inclusive and differentiated learning</b> Adding and subtracting of proper, improper and mixed fractions</li> <li>▪ Multiplying fraction of units with numerator and denominator less than ten</li> <li>▪ Transform division of Fractions by changing the division sign to multiplication sign, and invert the divisor. Perform the multiplication and write the product in the lowest term. Divide whole numbers by fractions and vice versa.</li> </ul>	<p>Use orange, paw-paw, sticks, rocks Other local materials and prescribed textbook and supplementary books</p>	<p>Participation Project Classwork Homework Quizzes Test</p>



## SEMESTER TWO

**GRADE: 5**

**PERIOD: V**

Topic B: Geometry – Geometric figures and angles

Learning Objectives: Upon completion of this topic, learners will:

1. Recognize and explain the concept of space as the set of all points
2. Define, identify, construct, measure angles and geometric figures

Out comes	Content	Activities	Materials	Evaluation
<ul style="list-style-type: none"> <li>▪ Learners are able to: apply acquired geometric skills in craft work and appreciate the designs based on dimensions of things in our community and environment (e.g. houses, tables, chairs, bridges roads etc)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Concept of space</li> <li>▪ Measure lines and rays</li> <li>▪ Construct angles and geometric figures</li> <li>▪ Measure angles</li> <li>▪ Polygon (triangles rectangles and square)</li> <li>▪ Angles, perimeter and areas</li> <li>▪ Touching and intersection circles</li> <li>▪ Circumference, area of a circle</li> <li>▪ Cubes - volume</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Inclusive and differentiated learning</b> Using ruler, compass and protractor to measure and construct angles and geometric figures of all kinds</li> <li>▪ measuring lines, rays and angles</li> <li>▪ constructing angles and closed geometric figures</li> <li>Measuring dimensions and areas of               <ul style="list-style-type: none"> <li>❖ Triangles;</li> <li>❖ Cubes;</li> <li>❖ Circles</li> <li>❖ Quadrilateral</li> </ul> </li> <li>Circumference of circle and volumes of cubes</li> </ul>	<ul style="list-style-type: none"> <li>- Use rulers, compass, protractor to construct geometric figures</li> <li>- Use other local materials to evaluate students learning</li> <li>- Prescribed textbook and supplementary books</li> <li>- Statistics of population data</li> <li>-</li> </ul>	Participation Project Classwork Homework Quizzes Test

## SEMESTER TWO

**GRADE: 6**

**PERIOD: VI**

Topic: Ratio, Percentage and Proportion

Learning Objectives: Upon completion of this topic, learners will:

1. Define and write ratio and proportion
2. Write ratio as a fraction
3. Write percentage as a ratio
4. Express two or more ratio as proportion
5. Solve stated problems related to ratio and proportion

Out comes	Content	Activities	Materials	Evaluation
<p>Learners are able to: calculate ratio, percent and proportion using some</p> <p>Characteristics of population data (HIV, death, birth, students enrollment and retention)</p>	<ul style="list-style-type: none"> <li>▪ Define and write ratio</li> <li>▪ Write fractions as ratio</li> <li>▪ Write percentage as a ratio</li> <li>▪ Define proportion as an equation of two ratios</li> <li>▪ Define percent</li> </ul> <p>Definition and explanation Terms</p> <ul style="list-style-type: none"> <li>- HIV rate</li> <li>- Death rate</li> <li>- Birth rate</li> <li>- Student enrollment</li> </ul>	<p><b>Inclusive and differentiated learning</b></p> <p>Definition of ratio and proportion</p> <p>Changing and writing fractions as ratio</p> <p>Process of defining proportion as equation of two ratios</p> <p>Brainstorm on the definition and concepts of the given terminologies (HIV rates, death rate, birth rate and students' enrollment).</p> <p>Compare each of these</p>	<ul style="list-style-type: none"> <li>- Games of all types</li> <li>- Check-up etc</li> <li>- Use any local games to explain more about ratio proportion</li> <li>- Statistics of population data</li> <li>- Prescribed and supplementary textbooks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Presentation</li> <li>▪ Homework</li> <li>▪ Classwork</li> <li>▪ Quizzes</li> <li>▪ Test</li> </ul>

		<p>components as a ratio to the entire data.</p> <p>Express each component as ratio to another component. E.g.(number of girls, number of death over number of birth)</p> <p>Express two of these ratios in proportion.</p> <ul style="list-style-type: none"> <li>• Find the percentage of each component to the entire data.</li> <li>• Find the percentage of each component.</li> <li>• Use the concept of percent, ratio and proportion to a real life situation (solving words problems)</li> </ul>		
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## SEMESTER TWO

**GRADE: 6**  
**PERIOD: VI**

Topic B: Graphs and interpretation of information

Learning Objectives: Upon completion of this topic, learners will:

1. Identify elements of graphs
2. Describe kinds of graphs

Out comes	Content	Activities	Materials	Evaluation
<ul style="list-style-type: none"><li>▪ Learners are able to: apply knowledge and skill acquired to construct and analysis statistical graphs.</li></ul>	<ul style="list-style-type: none"><li>▪ Identification of elements and kinds of graphs</li><li>▪ Define and differentiating graphs</li><li>▪ Bar graph</li><li>▪ Picture graph</li><li>▪ Line graph</li><li>▪ Circular graph</li></ul>	<p><b>Inclusive and differentiated learning</b></p> <p>Drawing of bar graph, picture graph, line graph, and circular graph.</p> <ul style="list-style-type: none"><li>▪ Making graph tables and chart.</li></ul> <p>Using different graphs to compare quantities</p>	<ul style="list-style-type: none"><li>- Ruler, protractor</li><li>- Geometric sets</li><li>- Use other local materials to make teaching/learning effective</li></ul> <p>Prescribed and Supplementary textbooks</p>	<p>Participation</p> <p>Presentation</p> <p>Classwork</p> <p>Homework</p> <p>Quizzes</p> <p>Test</p>

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