MINISTRY OF EDUCATION

UPPER PRIMARY LEVEL DESIGNS

LEARNING AREA: MATHEMATICS

GRADE 5

NOVEMBER 2019

KENYA INSTITUTE OF CURRICULUM DEVELOPEMENT

Essence Statement

Mathematics is a vehicle of development and improvement of a country's economic development. By learning mathematics, learners develop an understanding of numbers, logical thinking skills and problem solving skills. Mathematics is applied in business, social and political worlds. At this level, Mathematics will build on the competences acquired by the learner in the Early years of Education. Learning Mathematics will also enhance the learner's competencies in numeracy as a foundation of Science Technology Engineering and Mathematics ((STEM) at the higher levels of education cycle. Mathematics is also a subject of enjoyment and excitement as it gives learners opportunities for creative work and fun.

General Learning Outcomes

By the end of Upper Primary, the learner should be able to:

1) Demonstrate mastery of number concepts by working out problems in day to day life.
2) Apply measurement skills to find solutions to problems in a variety of contexts.
3) Describe properties of geometrical shapes and spatial relationships in real life experiences.
4) Collect, represent and analyze data to solve problems.
5) Analyze information using algebraic expressions in real life situations.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
1.0 NUMBERS	**1.0 Whole Numbers** (20 Lessons)	By the end of the sub strand, the learner should be able to; a) use place value and total value of digits up to hundreds of thousands in real life, b) use numbers up to hundreds of thousands in symbols in real life, c) read, write and relate numbers up to tens of thousands in words in real life, d) order numbers up to tens of thousands in real life, e) round off numbers up to tens of thousands to the nearest hundred and thousand in different situations, f) apply divisibility tests of 2, 5 and 10 in real life, g) apply highest Common Factor (HCF) and Greatest Common Divisor (GCD) in different situations, h) use Least Common Multiple (LCM) in real life situations,	• In pairs,groups or as individuals identify place value of digits up to hundreds of thousands using place value apparatus. • In pairs,groups or as individuals identify total value of digits up to hundreds of thousands using place value apparatus. • In pairs,groups or as individuals read numbers up to hundreds of thousands in symbols from number charts or cards. • In pairs, groups or as individuals read and write numbers up to tens of thousands in words from number charts or cards. • In pairs, groups or as individuals arrange numbers up to tens of thousands in increasing and decreasing order using number cards and share with other groups. • In pairs, groups or as individuals round off numbers up to tens of thousands to the nearest hundred and thousand using number cards and share with other groups. • In pairs, groups or as individuals divide different numbers by 2, 5 and 10 and come up with divisibility rules.	1. Where is ordering of numbers used in real life? 2. How do you find out whether a number can be divided by another?

		i) use IT devices for learning more on whole numbers and leisure, j) appreciate use of whole numbers in real life situations.	• In pairs, groups or as individuals identify factors and divisors of given numbers. • In pairs, groups or as individuals identify the common factors and divisors. • In pairs, groups or as individuals determine the highest or greatest common factor or divisor. • In pairs, groups or as individuals identify multiples of given numbers. • In pairs, groups or as individuals identify the common multiples. • In pairs, groups or as individuals determine the least common multiple. • In pairs or as individuals play digit games on involving numbers.	

Core Competences to be developed:

- Critical thinking and problem solving; as learners order and round off numbers.
- Learning to learn; as learners read, write numbers and compute HCF and GCD.
- Digital literacy; as learners use IT devices to learn and play games.
- Self- efficacy: as learners share or lead others in groups.

PCIs: • Safety; as learners handle place value apparatus. • Career awareness; as learners discuss where numbers are used.	**Values:** • Respect; as learners work in pairs/groups. • Unity; as learners work towards achieving the group set goals. • Social cohesion; as learners work in groups irrespective of their backgrounds.
Links to other subjects: • Languages; as learners discuss in groups.	**Suggested Community Services Learning Activities:** • Learners may assist in organizing or packing items in multiples in community functions.

• Agriculture; as learners interact with various agricultural produce in word questions..	

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Use place value and total value of digits up to hundreds of thousands	Uses place value and total value of digits up to more than hundreds of thousands correctly	Uses place value and total value of digits up to hundreds of thousands correctly	Inconsistently uses place value and total value of digits up to hundreds of thousands	Little evidence in using place value and total value of digits up to hundreds of thousands
2.	Use numbers up to hundreds of thousands in symbols	Uses numbers greater than hundreds of thousands in symbols correctly	Uses numbers up to hundreds of thousands in symbols correctly	Inconsistently uses numbers up to hundreds of thousands in symbols	Little evidence in using numbers up to hundreds of thousands in symbols
3.	Read, write and relate numbers up to tens of thousands in words	Reads, writes and relates numbers greater than tens of thousands in words correctly	Reads, writes and relates numbers up to tens of thousands in words correctly	Inconsistently reads, writes and relates numbers up to tens of thousands in words	Little evidence in reading, writing and relating numbers up to tens of thousands in words
4.	Order numbers up to tens of thousands	Orders numbers greater than tens of thousands correctly	Orders numbers up to tens of thousands correctly	Inconsistently orders numbers up to tens of thousands	Little evidence in ordering numbers up to tens of thousands
5.	Round off numbers up to tens of thousands to the	Rounds off numbers greater than tens of thousands to the nearest hundred and thousand correctly	Rounds off numbers up tens of thousands to the	Inconsistently rounds off numbers up to tens of	Little evidence in rounding off numbers up to

	nearest hundred and thousand		nearest hundred and thousand correctly	thousands to the nearest hundred and thousand	tens of thousands to the nearest hundred and thousand
6.	Apply divisibility tests of 2, 5 and 10	Applies divisibility tests of 2, 5, 10 and others correctly	Applies divisibility tests of 2, 5 and 10 correctly	Inconsistently applies divisibility tests of 2, 5 and 10	Little evidence in applying divisibility tests of 2, 5 and 10
7.	Apply highest Common Factor (HCF)/Greatest Common Divisor (GCD)	Applies highest Common Factor (HCF)/Greatest Common Divisor (GCD) correctly and with ease	Applies highest Common Factor (HCF)/Greatest Common Divisor (GCD) correctly	Inconsistently applies highest Common Factor (HCF)/Greatest Common Divisor (GCD)	Little evidence in applying highest Common Factor (HCF)/Greatest Common Divisor (GCD)
8.	Use Least Common Multiple (LCM)	Uses Least Common Multiple (LCM) correctly and with ease	Uses Least Common Multiple (LCM) correctly	Inconsistently uses Least Common Multiple (LCM)	Little evidence in using Least Common Multiple (LCM)
9.	Use IT devices for learning more on whole numbers	Uses IT devices for learning more on whole numbers efficiently and with ease	Uses IT devices for learning more on whole numbers efficiently	Inconsistently uses IT devices for learning more on whole numbers	Little evidence in using IT devices for learning more on whole numbers

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	1.2 Addition (6 Lessons)	By the end of the sub strand, the learner should be able to; a) add up to three 6 -digit numbers without regrouping up to a sum of 1,000,000 in different situations, b) add up to two 6 -digit numbers with double regrouping up to a sum of 1,000,000 in different situations, c) estimate sum by rounding off the addends to the nearest hundred and thousand in different situations, d) create patterns involving addition of numbers up to a sum of 1,000,000 in real life situations, e) use IT devices for learning more on addition of numbers and for enjoyment, f) appreciate use of addition of whole numbers in real life situations.	• In pairs, groups or as individuals add up to three 6-digit numbers without regrouping up to 1,000,000 using place value apparatus. • In pairs, groups or as individuals add up to two 6-digit numbers with double regrouping up to 1,000,000 using place value apparatus. • In pairs, groups or as individuals estimate sums by rounding off the addends to the nearest hundred and thousand using a number line. • In pairs, groups or as individuals create patterns involving addition of numbers up to a sum of 1,000,000 using number cards and other resources. • In pairs play digital games involving addition.	1. How do you estimate the sum of given numbers? 2. How do you create patterns in addition? 3. Where do we use addition in real life?
Core Competences to be developed: • Critical thinking and problem solving; as learners round off numbers and estimate sums. • Creativity and imagination; as learners make patterns involving addition.				

• Digital literacy; as learners use IT devices to learn and play games. • Self-efficacy; as learners report group discussion to others.	
PCIs: • Life skills; as learners estimate sums. • Peer education; as learners learn from one another in groups. • Environmental education; as learners interact with word questions dealing with environmental issues.	**Values:** • Respect; as learners agree to common answers in groups. • Unity; as learners own their work done in groups. • Responsibility; as learners take their roles individually to achieve common solutions.
Links to other subjects: • Art and craft; as learners create patterns using different items. • Languages; as learners discuss in groups and build up their vocabulary.	**Suggested Community Services Learning Activities:** • Learners may participate in working out total number of items at home, shop or market. • Learners may assist in arranging items in different formations in community functions.

Assessment Rubrics

No.	Indicators	Exceeds expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Add up to three 6-digit numbers without regrouping up to a sum of 1,000,000	Adds more than three 6-digit numbers without regrouping up to a sum of 1,000,000 correctly	Adds three 6-digit numbers without regrouping up to a sum of 1,000,000 correctly	Inconsistently adds three 6-digit numbers without regrouping up to a sum of 1,000,000	Little evidence in adding three 6-digit numbers without regrouping up to a sum of 1,00,000
2.	Add up to two 6- digit numbers with double regrouping up to a sum of 1,000,000	Adds more than two 6- digit numbers with double regrouping up to a sum of 1,000,000 correctly	Adds up to two 6-digit numbers with double regrouping up to a sum of 1,000,000 correctly	Inconsistently adds up to two 6- digit numbers with double regrouping up to a sum of 1,000,000	Little evidence in adding up to two 6-digit numbers with double regrouping up to a sum of 1,000,000

3.	Estimate sum by rounding the addends to the nearest hundred and thousand	Estimates sum by rounding addends to the nearest hundred and thousand correctly and with ease	Estimate sum by rounding addends to the nearest hundred and thousand correctly	Inconsistently estimates sum by rounding addends to the nearest hundred and thousand	Little evidence in estimating sum by rounding addends to the nearest hundred and thousand
4.	Create patterns involving addition of number up to a sum of 1,000,000	Creates patterns involving addition of numbers up to a sum of more than 1,000,000 innovatively and with ease	Creates patterns involving addition of numbers up to a sum of 1,000,000 innovatively	Inconsistently creates patterns involving addition of numbers up to a sum of 1,000,000	Little evidence in creating patterns involving addition of numbers up to a sum of 1,000,000
5.	Use IT devices for learning more on addition of numbers	Uses IT devices for learning more on addition of numbers efficiently and with ease	Uses IT devices for learning more on addition of numbers efficiently	Inconsistently uses IT devices for learning more on addition of numbers	Little evidence in using IT devices for learning more on addition of numbers

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	1.3 Subtraction (6 Lessons)	By the end of the sub strand, the learner should be able to; a) subtract up to 6-digit numbers without regrouping in real life situations, b) subtract of up to 6-digit numbers with regrouping in different situations, c) estimate difference by rounding off the minuend and subtrahend to the nearest hundred and thousand in different situations, d) perform combined operations involving addition and subtraction in different situations, e) create patterns involving subtraction from up to 1,000,000 in different situations, f) use IT devices for learning more on subtraction of numbers and for enjoyment,	• In pairs,groups or as individuals subtract up to 6-digit numbers without regrouping using place value apparatus. • In pairs, groups or as individuals subtract up to 6-digit numbers with regrouping using place value apparatus. • In pairs, groups or as individuals estimate difference by rounding off the minuend and subtrahend to the nearest hundred and thousand using a number line. • In pairs, groups or as individuals work out questions involving addition and subtraction. • In pairs, groups or as individuals create patterns involving subtraction of whole numbers from up to 1,000,000 using number charts. • In pairs or groups play digital games involving subtraction .	1. How do you work out estimate difference to the nearest hundred? 2. How can you create number patterns involving subtraction?

		g) appreciate subtraction of numbers in real life situations.		

Core Competences to be developed:

- Critical thinking and problem solving: as learners round off and estimates difference.
- Creativity and imagination: as learners create patterns involving subtraction.
- Digital literacy: as learners use IT devices to learn more on subtraction and play games.
- Self-efficacy: as learners report the groups discussion to others.

PCIs:	**Values:**
• Life skills: as a learner is able to estimate differences.	• Respect for self and others: as learners agree to common ideas or answers in groups. • Unity: as learners collectively own their work. • Responsibility; as learners take their roles individually towards solution to task.
Links to other subjects:	**Suggested Community Services Learning Activities:**
• Languages; as learners discuss and build up their vocabulary.	• Learners may participate in finding how items can be shared out in public functions e.g. cups, plates.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Subtract up to 6-digit numbers without regrouping	Subtracts more than 6-digit numbers without regrouping correctly	Subtracts up to 6-digit numbers without regrouping correctly	Inconsistently subtracts up to 6-digit numbers without regrouping	Little evidence in subtracting up to 6-digit numbers without regrouping

2.	Subtract of up to 6-digit numbers with regrouping	Subtracts more than 6-digit numbers with regrouping correctly	Subtracts of up to 6-digit numbers with regrouping correctly	Inconsistently subtracts up to 6-digit numbers with regrouping	Little evidence in subtracting up to 6-digit numbers with regrouping
3.	Estimate difference by rounding off the minuend and subtrahend to the nearest hundred and thousand	Estimate difference by rounding off the minuend and subtrahend to the nearest hundred and thousand correctly and with ease.	Estimates difference by rounding off the minuend and subtrahend to the nearest hundred and thousand correctly	Inconsistently estimates difference by rounding off the minuend and subtrahend to the nearest hundred and thousand	Little evidence in estimating difference by rounding off the minuend and subtrahend to the nearest hundred and thousand
4.	Perform combined operations involving addition and subtraction	Performs combined operations involving addition and subtraction correctly and with ease	Performs combined operations involving addition and subtraction correctly	Inconsistently performs combined operations involving addition and subtraction	Little evidence in performing combined operations involving addition and subtraction
5.	Create patterns involving subtraction from up to 1,000,000	Creates patterns involving subtraction from up to more than 1,000,000 innovatively and with ease	Creates patterns involving subtraction from up to 1,000,000 innovatively and with ease	Inconsistently creates patterns involving subtraction from up to 1,000,000	Little evidence in creating patterns involving subtraction from up to 1,000,000
6.	Use IT devices for learning more on	Uses IT devices for learning more on subtraction of numbers efficiently and with ease	Uses IT devices for learning and more	Inconsistently uses IT devices for learning more on	Little evidence in using IT devices for learning and more

	subtraction of numbers		on subtraction of numbers efficiently	subtraction of numbers	on subtraction of numbers

Strand	**Sub strand**	**Specific Learning Outcomes**	**Suggested Learning Experiences**	**Key Inquiry Question(s)**
	1.4 **Multiplication** (6 Lessons)	By the end of the sub strand, the learner should be able to; a) multiply up to a 3-digit number by up to a 2-digit number in real life situations , b) estimate product by rounding off factors to the nearest ten in different situations, c) make patterns involving multiplication of numbers with product not exceeding 1000 in in different situations, d) use IT devices for learning more on multiplication and for enjoyment, e) appreciate use of multiplication in real life.	• In pairs, groups or as individuals multiply up to a 3-digit number by up to a 2-digit number using different methods. • In pairs,groups or as individuals estimate product by; - rounding off factors - using compatibility of numbers - own strategies. • In pairs, groups or individuals make patterns involving multiplication with products not exceeding 1000 • In pairs or groups play digital games involving multiplication of whole numbers.	1. Where is multiplication used in real life? 2. How can you estimate products of numbers? 3. How can you form patterns involving multiplication?
Core Competences to be developed: • Communication and collaboration; as learners work in groups. • Creativity and Imagination; as learners make patterns.				

• Critical thinking and Problem solving; as learners estimate products of numbers. • Learning to learn; as learners explore other methods of working out products of numbers. • Digital Literacy; as learners play digital games involving multiplication.	
PCIs: Life skills; as learners apply multiplication of numbers in real life. • Self- esteem; as learners discover own strategies in multiplication and estimation of products of numbers.	**Values:** Unity, respect, love: as learners work in groups and share and discuss answers. • Social cohesion; as learners work in pairs and groups.
Links to other subjects: • Languages; as learners discuss in groups. • Agriculture; as learners discuss planting of seedlings in rows and columns.	**Suggested Community Services Learning Activities:** • Learners may assist in arranging books in rows and columns in a community library store and working out the total through multiplication.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Multiply up to a 3-digit number by up to a 2-digit number	Multiplies more than 3-digit number by up to a 2-digit number correctly	Multiplies of up to a 3-digit number by up to a 2-digit number correctly	Inconsistently multiplies up to a 3-digit number by up to a 2-digit number	Little evidence in multiplying up to a 3-digit number by up to a 2-digit number
2.	Estimate product by rounding off factors to the nearest ten	Estimates product by rounding off factors to the nearest ten correctly and with ease	Estimates product by rounding off factors to the nearest ten correctly	Inconsistently estimates product by rounding off factors to the nearest ten	Little evidence in estimating product by rounding off factors to the nearest ten
3.	Make patterns involving multiplication of numbers with	Makes patterns involving multiplication of numbers with product not exceeding 1000	Makes patterns involving multiplication of numbers with product	Inconsistently makes patterns involving multiplication of numbers with product not exceeding 1000	Little evidence in making patterns involving multiplication of

	product not exceeding 1000	innovatively and with ease	not exceeding 1000 innovatively		numbers with product not exceeding 1000
4.	Use IT devices for learning more on multiplication	Uses IT devices for learning more on multiplication efficiently and with ease	Uses IT devices for learning more on multiplication efficiently	Inconsistently uses IT devices for learning more on multiplication	Little evidence in using IT devices for learning more on multiplication

Strand	**Sub strand**	**Specific Learning Outcomes**	**Suggested Learning Experiences**	**Key Inquiry Question(s)**
	1.5 Division (6 Lessons)	By the end of the sub strand, the learner should be able to; a) divide up to a 3-digit number by up to a 2-digit number where the dividend is greater than the divisor in real life, b) apply the relationship between multiplication and division in different situations, c) estimate quotients by rounding off the dividend and divisor to the nearest ten in real life situations, d) perform combined operations involving addition, subtraction, multiplication and division of whole numbers in different situations,	• In pairs,groups or as individuals divide up to a 3-digit number by up to a 2-digit number where the dividend is greater than the divisor using; - long and short form, - own strategies. • In pairs, groups or as individuals demonstrate that multiplication is the opposite of division. • In pairs, groups or as individuals estimate quotients by rounding off the dividend and divisor to the nearest ten. • In pairs,groups or as individuals work out questions involving	1) Where is division used in real life? 2) How can we estimate quotients?

		e) use IT devices for learning more on division of whole numbers and for enjoyment, f) appreciate use of division of whole numbers in real life situations.	addition, subtraction, multiplication and division. • In pairs,groups or as individuals create number games and puzzles involving division. • In pairs or as individuals. play digital games involving division of whole numbers.	

Core Competences to be developed:

- Creativity and Imagination; as learners create number games and puzzles involving division.
- Critical thinking and problem solving; as learners estimate the quotient in division.
- Digital Literacy; as learners play digital games.

PCIs: • Social Cohesion; as learners work in pairs or groups. • Life skills; as learners apply division in real life. • Self- esteem; as learners discover own strategies of working out division and as they create number games and puzzles.	**Values:** • Unity, honesty, integrity; as learners share responsibility during group work. • Social justice; as learners ensure equal sharing of resources among themselves and wider society.
Links to other subjects: • Language; as learners learn and use terms used in divisions. • Physical Health Education; marking the field and forming teams. Agriculture; as learners share feeds for animals and apply fertilizers on crops.	**Suggested Community Services Learning Activities:** • Learners may assist farmers to feed livestock with equal amounts of animal feeds. • Learners may visit a shop or farm and observe how whole items are divided in portions.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations

1.	Divide up to a 3-digit number by up to a 2-digit number where the dividend is greater than the divisor.	Divides up to more than a 3-digit number by up to a 2-digit number where the dividend is greater than the divisor correctly	Divides up to a 3-digit number by up to a 2-digit number where the dividend is greater than the divisor correctly	Inconsistently divides up to a 3-digit number by up to a 2-digit number where the dividend is greater than the divisor	Little evidence in dividing up to a 3-digit number by up to a 2-digit number where the dividend is greater than the divisor
2.	Apply the relationship between multiplication and division.	Applies the relationship between multiplication and division correctly and with ease	Applies the relationship between multiplication and division correctly	Inconsistently applies the relationship between multiplication and division	Little evidence in applying the relationship between multiplication and division
3.	Estimate quotients by rounding off the dividend and divisor to the nearest ten	Estimates quotients by rounding off the dividend and divisor to the nearest ten correctly and with ease	Estimates quotients by rounding off the dividend and divisor to the nearest ten correctly	Inconsistently estimates quotients by rounding off the dividend and divisor to the nearest ten	Little evidence in estimating quotients by rounding off the dividend and divisor to the nearest ten
4.	Perform combined operations involving addition, subtraction multiplication and division of whole numbers	Performs combined operations involving addition, subtraction multiplication and division of whole numbers correctly and with ease	Performs combined operations involving addition, subtraction multiplication and division of whole numbers correctly	Inconsistently performs combined operations involving addition, subtraction multiplication and division of whole numbers	Little evidence in performing combined operations involving addition, subtraction multiplication and division of whole numbers
5.	Use IT devices for learning more on	Uses IT devices for learning more on division of whole	uses IT devices for learning more on	Inconsistently uses IT devices for learning	Little evidence in using IT devices for learning

	division of whole numbers	numbers efficiently and with ease	division of whole numbers efficiently	more on division of whole numbers	more on division of whole numbers

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	1.6 Fractions (8 Lessons)	By the end of the sub strand, the learner should be able to; a) use equivalent fractions in real life, b) simplify fractions in different situations, c) compare fractions in order to make decisions in real life, d) order fractions with denominators not exceeding 12 in different situations, e) add fractions with same denominator in different situations, f) subtract fractions with same denominator in different situations, g) add fractions with one renaming in different situations, h) subtract fractions with one renaming in different situations, i) use IT devices for learning more on fractions and for enjoyment,	• In pairs, groups or as individuals identify equivalent fractions using a fraction board or chart. • In pairs, groups or as individuals represent equivalent fractions using real objects. • In pairs, groups or as individuals simplify given fractions using a fraction chart. • In pairs,groups or as individuals compare given fractions using paper cut outs and concrete objects. • In pairs, groups or as individuals order given fractions in increasing and decreasing order using a number line, paper cut outs, real objects. • In pairs, groups or as individuals add two fractions with the same denominator using paper cut outs, number line, real objects. • In pairs, groups or as individuals subtract two fractions with the same denominator using paper cut outs, number line, real objects.	1. Why do we order fractions in real life? 2. Where are fractions used in real life?

		j) appreciate use of fractions in real life.	• In pairs,groups or as individuals add and subtract two fractions by renaming one fraction using equivalent fractions. • In pairs or as individuals play digital games involving fractions .	

Core Competences to be developed:

- Critical thinking and problem solving; as learners work out tasks involving fractions.
- Learning to learn; as learners order, compare and simply fractions.
- Digital Literacy: as learners play digital games.

PCIs: • Safety; as learners use learning resources.	**Values:** • Unity, respect, love, peace, integrity and social justice during group work while using resources.
Links to other subjects: • Languages: as learners use new terms involving fractions in discussions. • Agriculture; as learners divide school farm into plots or portions.	**Suggested Community Services Learning Activities:** • Learners may assist in sharing items in the family and community using knowledge of fractions.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Use equivalent fractions	Uses equivalent fractions accurately and with ease	Uses equivalent fractions accurately	Inconsistently uses equivalent fractions	Little evidence in using equivalent fractions
2.	Simplify fractions	Simplifies fractions correctly and with ease	Simplifies fractions correctly	Inconsistently simplifies fractions	Little evidence in simplifying fractions
3.	Compare fractions in order to make decisions	Compares fractions in order to make decisions correctly and effectively	Compares fractions in order to make decisions correctly	Inconsistently compares fractions in order to make decisions	Little evidence in comparing fractions in order to make decisions
4.	Order of fractions with denominators not exceeding 12	Orders fractions with denominators exceeding 12 correctly	Orders fractions with denominators not exceeding 12 correctly	Inconsistently orders fractions with denominators not exceeding 12	Little evidence in ordering fractions with denominators not exceeding 12
5.	Add fractions with same denominator	Adds fractions with same denominator correctly and with ease	Adds fractions with same denominator correctly	Inconsistently adds fractions with same denominator	Little evidence in adding fractions with same denominator
6.	Subtract fractions with same denominator	Subtracts fractions with same denominator correctly and with ease	Subtracts fractions with same denominator correctly	Inconsistently subtracts fractions with same denominator	Little evidence in subtracting fractions with same denominator

7.	Add fractions with one renaming,	Adds fractions with one renaming correctly and with ease	Adds fractions with one renaming correctly	Inconsistently adds fractions with one renaming	Little evidence in adding fractions with one renaming
8.	Subtract fractions with one renaming,	Subtracts fractions with one renaming correctly and with ease	Subtracts fractions with one renaming correctly	Inconsistently subtracts fractions with one renaming	Little evidence in subtracting fractions with one renaming
9.	Use IT devices for learning more on fractions	Uses IT devices for learning more on fractions efficiently and with ease	Uses IT devices for learning more on fractions efficiently	Inconsistently uses IT devices for learning more on fractions	Little evidence in using IT devices for learning more on fractions

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	1.7 Decimals (6 Lessons)	By the end of the sub strand, the learner should be able to; a) identify place value of decimals up to thousandths in different situations, b) order decimals up to thousandths in different situations, c) add decimals up to thousandths in real life situations, d) subtract decimals up to thousandths in real life situations, e) use IT devices for learning more on fractions and for enjoyment, f) appreciate use of decimals in real life situations.	• In pairs,groups or as individuals identify place value of decimals up to thousandths using a place value chart. • In pairs, groups or as individuals order decimals up to thousandths from smallest to largest and from largest to smallest using number cards or number line. • In pairs, groups or as individuals add decimals up to thousandths using place value apparatus. • In pairs, groups or as individuals subtract decimals situations up to thousandths using place value apparatus. • In pairs, groups or as individuals identify and share information on where decimals are used in real life. • In pairs or groups play digital games involving decimals.	1. Where do you use decimals in real life? 2. What is the importance of ordering decimals?
Core Competences to be developed • Critical thinking and problem solving; as learners add and subtract decimals • Digital Literacy; as learners play digital games. • Creativity and Imagination; as learners order decimals. • Self efficacy; as learners explore further operations with decimals.				

PCIs: • Social Cohesion; as learners work in groups. • Safety: as learners use various resources.	**Values:** • Unity, respect, social justice: as learners take turns in making contributions in the groups.
Links to other subjects: • Languages; as learners discuss in pairs/groups • Agriculture; as learners take measurements of plots in the school shamba. • Physical and Health Education; as learners record time during sports or games activities.	**Suggested Community Services Learning Activities:** • Learners to discuss where decimals are used with family members.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Identify place value of decimals up to thousandths	Identifies place value of decimals beyond thousandths correctly	Identifies place value of decimals up to thousandths correctly	Inconsistently Identifies place value of decimals up to thousandths	Little evidence in Identifying place value of decimals up to thousandths
2.	Order decimals up to thousandths in real life	Orders decimals beyond thousandths correctly	Orders decimals up to thousandths correctly	Inconsistently orders decimals up to thousandths	Little evidence in ordering decimals up to thousandths
3.	Add decimals up to thousandths	Adds decimals beyond thousandths correctly	Adds decimals up to thousandths correctly	Inconsistently adds decimals up to thousandths	Little evidence in adding decimals up to thousandths
4.	Subtract decimals up to thousandths	Subtracts decimals beyond thousandths correctly	Subtracts decimals up to thousandths correctly	Inconsistently subtracts decimals up to thousandths	Little evidence in subtracting decimals up to thousandths

5.	Use IT devices for learning more on fractions	Uses IT devices for learning more on decimals efficiently and with ease	Uses IT devices for learning more on decimals efficiently	Inconsistently uses IT devices for learning more on decimals	Little evidence in using IT devices for learning more on decimals

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
2.0 MEASUREMENT	**2.1 Length** (12 Lessons)	By the end of the sub strand, the learner should be able to; a) use the kilometre (km) as a unit of measuring length in real life, b) estimate and measure distance in kilometres in real life situations, c) identify the relationship between the kilometre(km) and the metre (m) in different situations. d) convert kilometres to metres and metres to kilometres in real life situations, e) add metres and kilometres in real life situations, f) subtract metres and kilometres in real life situations, g) multiply metres and kilometres by whole numbers in real life situations,	• In pairs, groups or as individuals identify the kilometre as a unit of measuring length real life. • In pairs, groups or as individuals measure distance in kilometres practically. • In pairs, groups or as individuals estimate distance in kilometres and share their estimates. • In pairs ,groups or as individuals measure distance estimated and compare findings with others. • In pairs, groups or as individuals establish the relationship between the kilometre and metre practically. • In pairs, groups or as individuals convert kilometres to metres and metres to kilometres. • In pairs, groups or as individuals determine distance in kilometres and metres involving addition, subtraction multiplication and division.	1. How do you measure distance? 2. Why do you measure distance?

		h) divide metres and kilometres by whole numbers in real life situations, i) use IT devices for learning more on measurement of length and for enjoyment, j) appreciate the use of kilometres and metres in measuring length in real life.	• In pairs or as individuals play digital games involving length in kilometres and metres.	
Core Competences to be developed: • Creativity and Imagination in measuring or estimating distance. • Critical thinking and problem solving in estimation of distance.				
PCIs: • Safety; as learners work with or handle measuring instruments. • Peer education; as learners assist each other in estimating distances.			**Values:** • Integrity; as learners record measurements. • Responsibility; as learners handle measuring instruments. • Respect; as learners take turn in groups activities.	
Links to other subjects: • Languages; as leaners use new terms in length during group work and sharing estimates. • Physical and Health Education; as learners estimate and measure distances during athletics and sports.			**Suggested Community Services Learning Activities:** • Learners may assist in estimation and measuring distances at home and in the community.	

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Use the kilometre (km) as a unit of length	Uses the kilometre (km) as a unit of length correctly and with ease	Uses the kilometre (km) as a unit of length correctly	Inconsistently uses the kilometre (km) as a unit of length	Little evidence in using the kilometre (km) as a unit of length
2.	Estimate and measure distance in kilometres	Estimates and measures distance in kilometres accurately and with ease	Estimates and measure distance in kilometres accurately	Inconsistently estimates and measures distance in kilometres	Little evidence in estimating and measuring distance in kilometres
3.	Identify the relationship between the kilometre and the metre	Identifies the relationship between the kilometre and the metre correctly and with ease	Identifies the relationship between the kilometre and the metre correctly	Inconsistently identifies the relationship between the kilometre and the metre	Little evidence in identifying the relationship between the kilometre and the metre
4.	Convert kilometres to metres and metres to kilometres	Converts kilometres to metres and metres to kilometres accurately and with ease	Converts kilometres to metres and metres to kilometres accurately	Inconsistently converts kilometres to metres and metres to kilometres	Little evidence in converting kilometres to metres and metres to kilometres
5.	Add kilometres and metres kilometres	Adds kilometres and metres accurately and with ease	Adds kilometres and metres accurately	Inconsistently adds kilometres and metres	Little evidence in adding kilometres and metres

6.	Subtract kilometres and metres	Subtracts kilometres and metres accurately and with ease	Subtracts kilometres and metres accurately	Inconsistently subtracts kilometres and metres	Little evidence in subtracting kilometres and metres
7.	Multiply kilometres and metres by whole numbers	Multiplies kilometres and metres by whole numbers correctly and with ease	Multiplies kilometres and metres by whole numbers correctly	Inconsistently multiplies kilometres and metres by whole numbers	Little evidence in multiplying kilometres and metres by whole numbers
8.	Divide kilometres and metres by whole numbers	Divides kilometres and metres by whole numbers correctly and with ease	Divides kilometres and metres by whole numbers correctly	Inconsistently divides kilometres and metres by whole numbers	Little evidence in dividing kilometres and metres by whole numbers
9.	Use IT devices for learning more on measurement of length	Uses IT devices for learning more on measurement of length efficiently and with ease	Uses IT devices for learning more on measurement of length efficiently	Inconsistently uses IT devices for learning more on measurement of length	Little evidence in using IT devices for learning more on measurement of length

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	2.2 Area (6 Lessons)	By the end of the sub strand, the learner should be able to; a) use the square centimetre (cm^2)as a unit of measuring area in real life, b) work out area of rectangles and squares in square centimetres (cm^2) in different situations, c) use IT devices for learning more on area and for enjoyment, d) appreciate the use of cm^2 in working out area in real life.	• In pairs, groups or as individuals measure, trace and cut out 1 cm by 1cm units, and refer the area of each as one square centimetre ($1cm^2$). • In pairs, groups or as individuals cover a given surface using 1-centimetre square cut outs and count the number of cut outs to get the area in cm^2. • In pairs, groups or as individuals to establish area of rectangles and squares in cm^2 as the product of the number $1cm^2$ units in the row by the number of units in the column, Area of rectangle or square = length x width . • In pairs or as individuals play digital games involving area.	1. How can you determine the area of different surfaces?

Core Competences to be developed: • Creativity and imagination; as learners use paper cut outs in covering plane surfaces to get area in cm^2. • Learning to learn; as learners explore how to determine area of different surfaces in the environment.	
PCIs: • Safety; as learners cut out 1 cm squares.	**Values:** • Respect, unity, peace, integrity; s learners perform an activity in pairs or groups. • Social cohesion; as learners work out the area of given plain figures in pairs or groups.
Links to other subjects: • Languages; as learners use new terms in discussion. • Home Science; as learners work out area of table mats and other textile materials.	**Suggested Community Services Learning Activities:** • Learners may assist in working out the number of mats or tiles required to cover a given surface at home and community.

Assessment Rubrics

No.	Indicators	Exceeds expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Use the square centimetre (cm^2) as a unit of measuring area	Uses the square centimetre (cm^2) as a unit of measuring area accurately and with ease	Uses the square centimetre (cm^2) as a unit of measuring area accurately	Inconsistently uses the square centimetre (cm^2) as a unit of measuring area	Little evidence in using the square centimetre (cm^2) as a unit of measuring area
2.	Work out area of rectangles and squares	Works out area of rectangles and squares accurately and with ease	Works out area of rectangles and squares accurately	Inconsistently works outs area of rectangles and squares	Little evidence in working out area of rectangles and squares

3.	Use IT devices for learning more on area	Uses IT devices for learning more on area efficiently and with ease	Uses IT devices for learning more on area efficiently	Inconsistently uses IT devices for learning more on area	Little evidence in using IT devices for learning more on area

Strand	**Sub strand**	**Specific Learning Outcomes**	**Suggested Learning Experiences**	**Key Inquiry Question(s)**
	2.3 Volume (6 Lessons)	By the end of the sub strand, the learner should be able to; a) identify the cubic centimetre (cm^3) as a unit of measuring volume in different situations, b) work out volume of cubes and cuboids in cubic centimetres ($cm^{3)}$ in different situations, c) derive the formula for the volume of cube or cuboid as V= l x w x h practically, d) use the formula V= l x w x h to work out	• In pairs, groups or as individuals measure the sides of a 1cm cube and identify it as a unit of measuring volume. • In pairs, groups or as individuals arrange a number of cubes along the length, width and vary the number of layers. • In pairs,groups or as individuals count the number of cubes used in activity above and record. • In pairs or groups establish that the total number of cubes represents the volume of the cube or cuboid formed. • In pairs, groups or as individuals to count the number of cubes on the length and multiply by the number in the width and the number of layers. The learners to establish the formula for volume (V) of a cube or cuboid as V = l x w x h.	1. Where is volume applicable in real life?

		volume of cubes and cuboids in different situations, e) use IT devices for learning more on volume and for enjoyment, f) appreciate use of cubic centimetres in measuring volume in real life.	• Learners watch a video on working out volume of a cube/cuboid. • In pairs, groups or as individuals measure the dimensions of a 1cm cube to establish its volume as 1cm x 1cm x 1cm = $1cm^3$ and share with other groups. • In pairs, groups or as individuals work out the volume of cubes and cuboids in cubic centimetres. • In pairs or as individuals use IT devices to play digital games involving volumes.	

Core Competences to be developed:

- Learning to learn; as leaners explore volumes in real life situations.
- Creativity and imagination; as learners use cubes to make cuboids and calculate volume.

PCIs:	**Values:**
• Environmental education; as learners work out volumes of various objects in the environment. • Safety and security; as learners handle the various objects in the environment.	• Responsibility and respect; as learners work with various objects.
Links to other subjects:	**Suggested Community Services Learning Activities:**
• Languages; as learners use new terms involving volume in discussions.	• Learners may visit a local whole sale shop and assist in arranging items in the store and calculate volume of various items like cartons.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations

1.	Identify the cubic centimetre (cm^3) as a unit for measuring volume	Identifies the cubic centimetre (cm^3) as a unit for measuring volume correctly and with ease	Identifies the cubic centimetre (cm^3) as a unit for measuring volume correctly	Inconsistently identifies the cubic centimetre (cm^3) as a unit for measuring volume	Little evidence in identifying the cubic centimetre (cm^3) as a unit for measuring volume
2.	Work out volume of cubes and cuboids in cubic centimetres ($cm^{3)}$	Works out the volume of cubes and cuboids in cubic centimetres ($cm^{3)}$ correctly and with ease	Works out the volume of cubes and cuboids in cubic centimetres ($cm^{3)}$ correctly	Inconsistently works out the volume of cubes and cuboids in cubic centimetres ($cm^{3)}$	Little evidence in working out the volume of cubes and cuboids in cubic centimetres ($cm^{3)}$
3.	Derive the formula of a cube or cuboid as V= l x w x h practically	Derives the formula of a cube and cuboid as V= l x w x h practically correctly and with ease	Derives the formula of a cube and cuboid as V= l x w x h practically correctly	Inconsistently derives the formula of a cube and cuboid as V= l x w x h practically	Little evidence in deriving the formula of a cube and cuboid as V= l x w x h practically
4.	Use the formula V= l x w x h to work out volume of cubes and cuboids	Uses the formula V= l x w x h to work out volume of cubes and cuboids correctly and with ease	Uses the formula V= l x w x h to work out volume of cubes and cuboids correctly	Inconsistently uses the formula V= l x w x h to work out volume of cubes and cuboids	Little evidence in using the formula V= l x w x h to work out volume of cubes and cuboids
5.	Use IT devices for learning more on volume	uses IT devices for learning more on volume	uses IT devices for learning more on volume	Inconsistently uses IT devices for learning more on volume	Little evidence in using IT devices for learning more on volume

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	2.4 Capacity (12 Lessons)	By the end of the sub strand, the learner should be able to; a) identify the millilitre as a unit of measuring capacity in real life, b) measure capacity in millilitres in real life situations, c) estimate and measure capacity in multiples of 5 millilitres in different situations, d) identify the relationship between litres and millilitres in real life, e) convert litres to millilitres and millilitres to litres in real life situations,	• In pairs,groups or as individuals fill a teaspoon or cylinder graduated in millilitres with water and identify that the spoon or cylinder holds 5 millilitres. • In pairs or groups divide the water in the spoon or cylinder into 5 equal parts and identify each part as 1 millilitre. • In pairs or groups fill small containers with water and measure the capacity in millilitres using a container graduated in millilitres. • Learners watch a video on measuring capacity in millilitres. • In pairs,groups or as individuals estimate and measure capacity of different containers using a container graduated in millilitres. • In pairs, groups or as individuals fill a	Where re litres and millilitres used in day to day life?

		f) add litres and millilitres in real life situations, g) subtract litres and in real life situations, h) multiply litres and millilitres by whole numbers in real life situations, i) divide litres and millilitres by whole numbers in different situations, j) use IT devices for learning more on capacity and for enjoyment k) appreciate use of litres and millilitres in measuring capacity in real life	1- litre container using a 100 millilitres container. • In pairs, groups or as individuals count the number of 100 millilitre containers used to fill the 1- litre container and conclude that ten 100- millilitres containers fill 1 litre. (10x 100 millilitres =1000 millilitres = 1 litre) • In pairs, groups or as individuals to convert litres to millilitres and milliliters to litres. • In pairs or groups work out capacity in litres and millilitres using addition, subtraction, multiplication and division. • In pairs or as individuals play digital games involving capacity.	
Core Competences to be developed: • Communication and collaboration; as learners measure capacity in pairs or groups and share their findings. • Critical thinking and problem solving; as learners convert unit of capacity, relate unit of capacity and work questions involving capacity. • Digital literacy; as learner plays digital games involving capacity.				
PCIs: • Social cohesion; as learners work in pairs/groups in measuring capacity. • Safety; as learners use containers and water during measuring activities.			**Values:** • Love, respect, unity, responsibility, social justice as learners take roles when working in pairs/groups.	

• Environmental education; as learners clean up after the practical activities.	
Links to other subjects: • Science and Technology; as learners discuss water conservation. • Languages; as learners use new terms involving capacity in discussions. • Home Science as learners measure ingredients like water, milk, flour. • Agriculture; as learners measure things like fertilizer for use.	**Suggested Community Services Learning Activities:** • Learners to assist in measuring capacity of milk, water, while preparing tea, porridge, ugali, at home and community and as they measure medicine. • Learners assist in estimating the amount of water required during a community function.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Identify the millilitre as unit of measuring capacity	Identifies the millilitre as unit of measuring capacity accurately and with ease	Identifies the millilitre as unit of measuring capacity accurately	Inconsistently identifies the millilitre as unit of measuring capacity	Little evidence in identifying the millilitre as unit of measuring capacity
2.	Measure capacity in millilitres	Measures capacity in millilitres accurately and with ease	Measures capacity in millilitres accurately	Inconsistently measure capacity in millilitres	Little evidence in measuring capacity in millilitres
3.	Estimate and measure capacity in multiples of 5 millilitres	Estimates and measures capacity in multiples of 5 millilitres accurately and with ease	Estimates and measures capacity in multiples of 5 millilitres accurately	Inconsistently estimates and measures capacity in multiples of 5 millilitres	Little evidence in estimating and measuring capacity in multiples of 5 millilitres

4.	Identify the relationship between litres and millilitres	Identifies the relationship between litres and millilitres accurately and with ease	Identifies the relationship between litres and millilitres accurately	Inconsistently identifies the relationship between litres and millilitres	Little evidence in identifying the relationship between litres and millilitres
5.	Convert litres to millilitres and millilitres to litres	Converts litres to millilitres and millilitres to litres accurately and with ease	Converts litres to millilitres and millilitres to litres accurately	Inconsistently converts litres to millilitres and millilitres to litres	Little evidence in converting litres to millilitres and millilitres to litres
6.	Add of litres and millilitres	Adds litres and millilitres accurately and with ease	Adds litres and millilitres accurately	Inconsistently adds litres and millilitres	Little evidence in adding litres and millilitres
7.	Subtract litres and millilitres	Subtracts litres and millilitres accurately and with ease	Subtracts litres and millilitres accurately	Inconsistently subtracts litres and millilitres	Little evidence in subtracting litres and millilitres
8.	Multiply litres and millilitres by whole numbers	Multiplies litres and millilitres by whole numbers accurately and with ease	Multiplication of litres and millilitres by whole numbers accurately	Inconsistently multiplies of litres and millilitres by whole numbers	Little evidence in multiplying litres and millilitres by whole numbers
9.	Divide litres and millilitres by whole numbers	Divides litres and millilitres by whole numbers accurately and with ease	Divides litres and millilitres by whole numbers accurately	Inconsistently divides litres and millilitres by whole numbers	Little evidence in dividing litres and millilitres by whole numbers
10.	Use IT devices for learning more on capacity	Uses IT devices for learning more on capacity efficiently and with ease	Uses IT devices for learning more on capacity efficiently	Inconsistently uses IT devices for learning more on capacity	Little evidence in using IT devices for learning more on capacity

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	2.5 Mass (12 Lessons)	By the end of the sub strand, the learner should be able to; a) identify the gram as a unit of measuring mass in real life, b) measure mass in grams in different situations, c) estimate and measure mass in grams in different situations, d) identify the relationship between the kilogram and the gram in real life situations, e) convert kilograms to grams and grams to kilograms in real life situations,	• In pairs ,groups or as individuals scoop sand or soil using a teaspoon. Explain the learners the amount scooped is about 5 grams. • In pairs , groups or as individuals divide the amount scooped into 5 equal groups. Each of these small groups is about one gram. • In pairs or groups using an electronic or a manual weighing machine measure mass of sand or soil in grams.	1. What is the importance of measuring mass?

		f) add grams and kilograms in real life situations, g) subtract grams and kilograms in real life situations, h) multiply grams and kilogram by whole numbers in real life situations, i) divide grams and kilograms by whole numbers in real life situations, j) use IT devices for learning more on mass and for enjoyment, k) appreciate use of kilograms and grams in measuring mass in real life.	• Learners to watch a video on measuring mass in grams. • In pairs, groups or as individuals estimate and measure mass of items in grams using a beam balance or electronic weighing machine. • In pairs, groups or as individuals establish the relationship between the kilogram and the gram using a beam balance or electronic weighing machine(1kg = 1000g). • In pairs or groups convert kilograms to grams and grams to kilogram in real life. • In pairs, groups or as individuals determine mass of items in grams and kilograms using different operations in real life situations. • In pairs or groups play digital games involving mass.	
Core Competences to be developed: • Communication and collaboration; as learners measure mass in grams. • Digital literacy; as learners play digital games involving mass. • Critical thinking and problem solving; as learners measure mass in grams and kilograms.				
PCIs: • Agriculture; as learners calculate mass of fertilizer needed for their school farm.			**Values:** • Respect; as learners work in groups or pairs in measuring mass.	

	• Social cohesion; as learners work in pairs or groups in measuring mass.
Links to other subjects: • Home Science; as learners measure mass of ingredients.	**Suggested Community Services Learning Activities:** • Learners may assist in measuring mass of foodstuffs in kilograms and grams at home or community functions.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Identify the gram as a unit of measuring mass	Identifies the gram as a unit of measuring mass accurately and with ease	Identifies the gram as a unit of measuring mass accurately	Inconsistently identifies the gram as a unit of measuring mass	Little evidence in identifying the gram as a unit of measuring mass
2.	Measure mass in grams	Measures mass in grams accurately and with ease	Measures mass in grams accurately	Inconsistently measures mass in grams	Little evidence in measuring mass in grams
3.	Estimate and measure mass in grams	Estimates and measures mass in grams accurately and with ease	Estimates and measures mass in grams accurately	Inconsistently estimates and	Little evidence in estimating and

				measures mass in grams	measuring mass in grams
4.	Identify the relationship between the kilogram and the gram	Identifies the relationship between the kilogram and the gram accurately and with ease	Identifies the relationship between the kilogram and the gram accurately	Inconsistently identifies the relationship between the kilogram and the gram	Little evidence in identifying the relationship between the kilogram and the gram
5.	Convert kilograms to grams and grams to kilograms	Converts kilograms to grams and grams to kilograms accurately and with ease	Converts kilograms to grams and grams to kilograms accurately	Inconsistently converts kilograms to grams and grams to kilograms	Little evidence in converting kilograms to grams and grams to kilograms
6.	Add kilograms and grams	Adds kilograms and grams s accurately and with ease	Adds kilograms and grams accurately	Inconsistently adds kilograms and grams	Little evidence in adding kilograms and grams
7.	Subtract grams and kilograms	Subtracts kilograms and grams accurately and with ease	Subtracts kilograms and grams accurately	Inconsistently subtracts kilograms and grams	Little evidence in subtracting kilograms and grams
8.	Multiply kilograms and grams by whole numbers	Multiplies kilograms and grams by whole numbers accurately and with ease	Multiplies kilograms and grams by whole numbers accurately	Inconsistently multiplies kilograms and grams by whole numbers	Little evidence in multiplying kilograms and grams by whole numbers
9.	Divide kilograms and grams by whole numbers	Divides kilograms and grams by whole numbers accurately and with ease	Divides kilograms and grams by whole numbers accurately	Inconsistently divides kilograms and grams by whole numbers	Little evidence in dividing kilograms and grams by whole numbers

10.	Use IT devices for learning more on mass	Uses IT devices for learning more on mass efficiently and with ease	Uses IT devices for learning more on mass efficiently	Inconsistently uses IT devices for learning more on mass	Little evidence in using IT devices for learning more on mass

Strand	**Sub strand**	**Specific Learning Outcomes**	**Suggested Learning Experiences**	**Key Inquiry Question(s)**
	2.6 Time (8 Lessons)	By the end of the sub strand, the learners should be able to; a) identify the second as a unit of measuring time, b) identify the relationship between the minute and the second in real life situations,	• In pairs, groups or as individuals carry out activities taking 10 seconds. Let learners relate the activities to what can be done in one tenth of the time taken to do the activity. The time taken is 1 second.	1. How can we read time?

		c) convert minutes to seconds and seconds to minutes in real life, d) add minutes and seconds with conversion in real life situations, e) subtract minutes and seconds with conversion in real life situations, f) multiply minutes and seconds by whole numbers in real life situations, g) divide minutes and seconds by whole numbers in real life situations, h) use IT devices in learning more on time and enjoyment, i) appreciate use of minutes and seconds as units of measuring time in real life situations.	• In pairs, groups or as individuals measure time taken to do various activities in seconds. • In pairs or groups or as individuals establish the relationship between seconds and minute using a clock or stop watch, watches. • In pairs, groups or as individuals determine time durations in minutes and seconds using different operations in real life situations • In pairs or as individuals use IT devices to play games involving time.	

Core Competences to be developed:

- Creativity and imagination; as learners work out questions involving time in real life situations.
- Learning to learn; as learners convert time from one unit to another.
- Digital literacy as learners play digital games involving time.

PCIs:	**Values:**
• Life skills; as learners learn about time in seconds and minutes. • Social cohesion; as learners estimate seasons of community activity planting, weeding. • Self-awareness; as learners identifies changes in their body during puberty.	• Responsibility, honesty and integrity; as learners work in pairs and groups.
Links to other subjects:	**Suggested Community Services Learning Activities:**

• Languages; as learners discuss and share in pairs/groups. • Physical and Health Education; as learners time events during games and sports.	• Learners to assist in observing time for taking medications. • Learners to assist in time management of various activities in the home and community.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Identify the second as a unit of measuring time	Identifies the second as a unit of measuring time accurately and with ease	Identifies the second as a unit of measuring time accurately	Inconsistently identifies the second as a unit of measuring time	Little evidence in identifying the second as a unit of measuring time
2.	Identify the relationship between the minute and the second	Identifies the relationship between the minute and the second accurately and with ease	Identifies the relationship between the minute and the second accurately	Inconsistently identifies the relationship between the minute and the second	Little evidence in identifying the relationship between the minute and the second
3.	Convert minutes to seconds and seconds to minutes	Converts minutes to seconds and seconds to minutes accurately and with ease	Converts minutes to seconds and seconds to minutes accurately	Inconsistently converts minutes to seconds and seconds to minutes	Little evidence in converting minutes to seconds and seconds to minutes
4.	Add minutes and seconds with conversion	Adds minutes and seconds with conversion correctly and with ease	Adds minutes and seconds with conversion correctly	Inconsistently adds minutes and seconds with conversion	Little evidence in adding minutes and seconds with conversion

5.	Subtract minutes and seconds with conversion	Subtract minutes and seconds with conversion correctly and with ease	subtract minutes and seconds with conversion correctly	Inconsistently subtracts minutes and seconds with conversion	Little evidence in subtracting minutes and seconds with conversion
6.	Multiply minutes and seconds by whole numbers	Multiplies minutes and seconds by whole numbers correctly and with ease	Multiplies minutes and seconds by whole numbers correctly	Inconsistently multiplies minutes and seconds by whole numbers	Little evidence in multiplying minutes and seconds by whole numbers
7.	Divide minutes and seconds by whole numbers	Divides minutes and seconds by whole numbers correctly and with ease	Divides minutes and seconds by whole numbers correctly	Inconsistently divides minutes and seconds by whole numbers	Little evidence in dividing minutes and seconds by whole numbers
	Use IT devices in learning more on time	Use IT devices in learning more on time efficiently and with ease	Use IT devices in learning more on time efficiently	Inconsistently uses IT devices in learning more on time	Little evidence in using IT devices in learning more on time

Strand	**Sub strand**	**Specific Learning Outcomes**	**Suggested Learning Experiences**	**Key Inquiry Question(s**
	2.7 Money (8 Lessons)	By the end of the sub strand, the learners should be able to; a) explain the term budget in real life situations,	• In pairs or groups discuss meaning of a budget. • In pairs, groups discuss the importance of a budget.	1. How do you manage your money?

		b) identify the importance of a budget in real life, c) explain meaning of tax in real life, d) identify importance of tax to the governments, e) identify services provided by banks in real life situations, f) identify factors to consider in order to save wisely, g) use IT devices to learn more about budgeting and bank services in real life, h) appreciate use of budgeting, bank services and payment of taxes in real life.	• In pairs or groups discuss meaning of tax. • In pairs or groups discuss the importance of taxes to the governments. • In pairs or groups discuss provision of loans, safe custody of items, money deposits and withdrawals, savings as services provided by banks. • In pairs or groups discuss factors to consider when saving money and share with others. • In pairs or as individuals use IT devices to learn more about, taxes budgeting and bank services.	2. What is the importance of paying taxes 3. How can you save money?

Core Competences to be developed:

- Communication and collaboration; as learners discuss and share about preparation of a shopping budget.
- Learning to learn; as learners discuss matters on budgeting, savings, and electronic banking.

PCIs: • Financial literacy; as learners discuss about budgeting, savings, banking. • Environmental educations; as learners discover valuable items in the environment.	**Values:** • Honesty, integrity, respect and responsibility s learners work in groups. • Patriotism; as learners appreciate features in the Kenyan currency.
Links to other subjects: • Agriculture; as learners make budget for purchases.	**Suggested Community Services Learning Activities:**

• Home Science; as learners prepare budget for practical lesson resources. • Languages; as learners discuss in pairs and groups. • Social studies; as learners learn about currency. • Career linkages; as accountants, shopkeepers, auditors and business.	• Learners may assist in preparation of budgets, discussion on saving, use of debit or credit cards and electronic banking at home or community.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Explain the term budget	Explains the term budget correctly with ease	Explains the term budget correctly	Inconsistently explains the term budget	Little evidence in explaining the term budget
2.	Identify importance of a budget	Identifies the importance of a budget correctly and with ease	Identifies the importance of a budget correctly	Inconsistently identifies the importance of a budget	Little evidence in identifying the importance of a budget
3.	Explain meaning of tax	Explains meaning of tax correctly and with ease	Explains meaning of tax correctly	Inconsistently explains meaning of tax	Little evidence in explaining meaning of tax
4.	Identify importance of tax to the governments	Identifies importance of tax to the governments correctly and with ease	Identifies importance of tax to the governments correctly	Inconsistently identifies importance of tax to the governments	Little evidence in identifying importance of tax to the governments

5.	Identify services provided by banks	Identifies services provided by banks correctly and with ease	Identifies services provided by banks correctly	Inconsistently identifies services provided by banks	Little evidence in identifying services provided by banks
6.	Identify factors to consider in order to save wisely	Identifies factors to consider in order to save wisely correctly and with ease	Identifies factors to consider in order to save wisely correctly	Inconsistently identifies factors to consider in order to save wisely	Little evidence in identifying factors to consider in order to save wisely
7.	Use IT devices to learn more about budgeting and bank services	Uses IT devices to learn more about budgeting and bank services efficiently and with ease	Uses IT devices to learn more about budgeting and bank services efficiently	Inconsistently uses IT devices to learn more about budgeting and bank services	Little evidence in using IT devices to learn more about budgeting and bank services

Strand	**Sub strand**	**Specific Learning Outcomes**	**Suggested Learning Experiences**	**Key Inquiry Question(s)**

3.0 GEOMETRY	**3.1 Lines** (4 Lessons)	By the end of the sub strand, the learner should be able to; a) identify horizontal and vertical lines in different situations, b) draw horizontal and vertical lines in different salutations, c) identify perpendicular lines in different situations, d) draw perpendicular lines different salutations, e) identify parallel lines different situations, f) draw parallel lines in different salutations, g) use IT devices to learn more about lines and leisure, h) appreciate use of various types of lines in real life.	• In pairs or groups identify lines in the classroom and within the environment. • In pairs or groups describe lines in the environment and identify them as horizontal and vertical lines, parallel and perpendicular lines. • In pairs, groups or as individuals draw horizontal and vertical lines, parallel and perpendicular lines to represent real life situations. • In pairs or groups use IT devices to learn more about lines.	1. Where are perpendicular lines used?
Core Competences to be developed: • Communication and collaboration; as learner discuss and share. • Learning to learn; as learners identify different lines and their differences. • Digital literacy as learners play digital games involving various types of lines.				
PCIs: • Safety; as learners in pairs or groups or as individual identify uses of different lines. • Social cohesion; as learners work in pairs or groups.			**Values:** • Unit, peace, social justice, respect; as learners work in groups.	
Links to other subjects:			**Suggested Community Services Learning Activities:**	

• Languages; as learners discuss and share. • Agriculture; as learners prepare rows on the ground for planting.	• Learners to assist in the home and community using the knowledge of lines in various activities like planting, arranging seats for say meetings.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Identify horizontal and vertical lines	Identifies horizontal and vertical lines correctly and with ease	Identifies horizontal and vertical lines correctly	Inconsistently identifies horizontal and vertical lines	Little evidence in identifying horizontal and vertical lines
2.	Draw horizontal and vertical lines	Draws horizontal and vertical lines correctly and with ease	Draws horizontal and vertical lines correctly	Inconsistently draws horizontal and vertical lines	Little evidence in drawing horizontal and vertical lines
3.	Identify perpendicular lines	Identifies perpendicular lines correctly and with ease	Identifies perpendicular lines correctly	Inconsistently identifies perpendicular lines	Little evidence in identifying perpendicular lines
4.	Draw perpendicular lines	Draws perpendicular lines correctly and with ease	Draws perpendicular lines correctly	Inconsistently draws perpendicular lines	Little evidence in drawing perpendicular lines
5.	Identify parallel lines	Identifies parallel lines correctly and with ease	Identifies parallel lines correctly	Inconsistently identifies parallel lines	Little evidence in identifying parallel lines
6.	Draw parallel lines	Draws parallel lines correctly and with ease	Draws parallel lines correctly and with ease	Inconsistently draws parallel lines	Little evidence in drawing parallel lines

7.	Use IT devices to learn more about lines	Uses IT devices to learn more about lines efficiently and with ease	Uses IT devices to learn more about lines efficiently	Inconsistently uses IT devices to learn more about lines	Little evidence in using IT devices to learn more about lines

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	3.2 Angles (6 Lessons)	By the end of the sub strand, the learner should be able to; a) relate a turn to angles in real life, b) identify the use of angles in the environment, c) measure angles using a unit angle, d) identify the degree as a unit of measuring angle, e) Measure angles in degrees in different situations, f) use IT devices to create and learn more about angles, g) appreciate the use of angles in our day to day life.	• In pairs, groups or as individuals make clockwise, quarter and half turn, and relate them to angles in the environment. • In pairs, groups or as individuals discuss the use of angles in the environment. • In pairs,groups or as individuals make a unit angle and use it to measure angles in the environment. • In pairs, groups or as individuals divide a 10^{o}angle into 10 equal parts and identify each part as equal to 1 degree. • In pairs, groups or as individuals measure angles in degrees using a protractor. • In pairs, groups or as individuals measure angles in degrees using a protractor and share results with others. • Learners in pairs or groups use IT devices to create and learn more about angles.	1. Where are angles used in the environment?
Core Competences to be developed: • Communication and collaboration; as learner work in pairs or groups. • Learning to learn; as learners identify the degree as a unit of measuring angles.				

• Creativity and imagination; as learners compare angles using the unit angle. • Environmental awareness; as learners appreciates use of angles in the environment.	
PCIs: • Social cohesion; as learners work in groups. • Safety; as learners handle pair of scissors, razor blades. • Career link; architect and construction.	**Values:** • Unity, peace, social justice, respect, responsibility; as learners share tasks or roles in their groups.
Links to other subjects: • Languages; as learners discuss in groups and share findings. • Creative Arts; as learners draw angles. • Physical and Health Education; as learners mark the field.	**Suggested Community Services Learning Activities:** • Learners to learn more about angles as used at homes and in the community.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Relate a turn to angles	Relates a turn to angles accuracy and with ease	Relates a turn to angles correctly	Inconsistently relates a turn to angles	Little evidence relating a turn to angles
2.	Identify the use of angles	Identifies the use of angles accurately and with ease	Identifies the use of angles correctly	Inconsistently identifies the use of angles	Little evidence in identifying the use of angles
3.	Measure angles using a unit angle	Measures angles using a unit angle accurately and with ease	Measures angles using a unit angle accurately and with ease	Inconsistently measures angles using a unit angle	Little evidence in measuring angles using a unit angle
4.	Identify the degree as a unit of measuring angles	Identifies the degree as a unit of measuring angles accurately and with ease	Identifies the degree as a unit of measuring angles accurately	Inconsistently identifies the degree as a unit of measuring angles	Little evidence in identifying the

					degree as a unit of measuring angles
5.	Measure angles in degrees	Measures angles in degrees accurately and with ease	Measures angles in degrees correctly	Inconsistently measures angles in degrees	Little evidence in measuring angles in degrees
6.	Use IT devices to create and learn more about angles	Uses IT devices to create and learn more about angles efficiently and with ease	Uses IT devices to create and learn more about angles efficiently	Inconsistently uses IT devices to create and learn more about angles	Little evidence in using IT devices to create and learn more about angles

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	3.3 3-D Objects (6 Lessons)	By the end of the sub strand, the learner should be able to; a) describe 3-D objects in the environment, b) describe 2-D shapes in 3-D objects in the environment , c) use IT devices to learn more about 3-D objects and for leisure d) appreciate the use of 3-D objects in the environment.	• In pairs, groups or as individuals identify and discuss cubes, cuboids, cylinders, spheres and pyramids as 3-D objects in the environment and share with other groups. • Learners to watch a video on 3-D objects. • In pairs or as individuals describe 2-D shapes found in 3-D objects and share with other groups. • In pairs or individuals use IT devices to learn more about 3-D objects.	Where are 3-D objects used in the environment?
Core Competences to be developed: • Communication and collaboration; as learners discuss in groups. • Learning to learn; as learners are prepared for further learning in 3-D objects. • Critically and imagination; as learners identify 2-D in 3-D objects.				
PCIs: • Safety; as learners handle different objects. • Environmental awareness; as learners identify 3-D objects in their environment. • Career link; movie making, TV and media.			**Values:** • Unity, responsibility, peace, integrity, social justice; as learners share and handle objects in pairs or groups.	
Links to other subjects: • Languages; as learners in discuss.			**Suggested Community Services Learning Activities:**	

• Creative Arts; as learners draw 3-D objects.	• Learners may assist in identifying 2-D shapes in construction of 3-D objects in the environment e.g. animals cages.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Describe 3-D objects	Describes 3-D objects accurately and with ease	Describes 3-D objects accurately	Inconsistently describes 3-D objects	Little evidence in describing 3-D objects
2.	Describe 2-D shapes in 3-D objects	Describes 2-D shapes in 3-D objects accurately and with ease	Describes 2-D shapes in 3-D objects accurately	Inconsistently describes 2-D shapes in 3-D objects	Little evidence in describing 2-D shapes in 3-D objects
3.	Use IT devices to learn more about 3-D objects	Uses IT devices to learn more about 3-D objects efficiently and with ease	Uses IT devices to learn more about 3-D objects efficiently	Inconsistently uses IT devices to learn more about 3-D objects	Little evidence in using IT devices to learn more about 3-D objects

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
4.0 DATA HANDLING	**4.1 Data Representation** (6 Lessons)	By the end of the sub strand, the learners should be able to; a) collect and represent data using tables from real life situations, b) represent data through piling from real life situations, c) interpret data represented through piling from real life situations, d) use IT devices to learning more on how to represent data and for leisure, e) appreciate use frequency tables in real life.	• In pairs, groups or as individuals collect data and organize it in a table from real life situations. • In pairs, groups or as individuals represent data by piling similar objects like match boxes vertically. • In pairs or groups discuss information represented by objects piled vertically. • In pairs or as individuals use IT devices to learn more on representing data in tables.	1. Why is representing data in tables important?
Core Competences to be developed: • Communication and collaboration; as learners work in pairs or groups. • Creativity and imagination; as learners organize and represent data by piling. • Learning to learn; as the learners practice piling items. • Digital literacy; as learners use IT devices to learn more about frequency tables.				
PCIs:			**Values:**	

• Environment education; as learners dispose the items used appropriately. • Safety; as learners represent data through piling objects.	• Peace and unity; as learners work in groups. • Respect and responsibility; as learners share tasks/roles in group work.
Links to other subjects: • Science and Technology; as learners classify plants and animals. • Languages; as learners discuss and share in pairs/groups.	**Suggested Community Services Learning Activities;** • Learners to assist in collecting data using frequency tables in the community.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Collect and represent data using tables	Collects and represents data using tables accurately and with ease	Collects and represents data using tables accurately	Inconsistently collects and represents data using tables	Little evidence in collecting and representing data using tables
2.	Represent data through piling	Represents data through piling accurately and with ease	Represents data through piling accurately	Inconsistently represents data through piling	Little evidence in representing data through piling
3.	Interpret data represented through piling	Interprets data represented through piling accurately and with ease	Interprets data represented through piling accurately	Inconsistently interprets data represented through piling	Little evidence in interpreting data represented through piling
4.	Use of IT devices to learn more about bar graphs	Uses of IT devices to learn more about bar	Uses of IT devices to learn more about	Inconsistently use of IT devices to learn	Little evidence in using IT devices to learn more about bar graphs

		graphs efficiently and with ease	bar graphs efficiently	more about bar graphs	

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
5.0 ALGEBRA	**5.1 Simple equations** (6 Lessons)	By the end of the sub strand, the learner should be able to; a) form simple equations with one unknown involving real life situations, b) solve simple equations with one unknown involving real life situations, c) use IT devices to learn more about equations and for enjoyment, d) appreciate use of equations in solving problems in real life.	• In pairs, groups or as individuals form equations with one unknown. • In pairs or as individuals solve equations with one unknown. • In pairs or as individuals use IT devices to learn more about equations.	1. Where are equations used in real life?
Core Competences to be developed: • Communication and collaboration; as learners work in groups. • Critical thinking and problem solving; as learners solve equations. • Digital literacy; as learners learn more about equations using digital devices.				
PCIs:			**Values:**	

• Life skills; as learners form and balance equations involving decision making in real life situations.	• Honesty as learners solve problems and give answers as a pair/group or individuals. Social cohesion; as learners work in pairs/groups.
Links to other subjects: • Languages as learners discuss in groups and share. • Science and Technology; as learners use a balance in solving equations involving real life situations.	**Suggested Community Services Learning Activities:** • Learners engage in solving problems at home and in the community using equations.

Assessment Rubrics

No.	Indicators	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
1.	Form simple equations with one unknown	Forms simple equations with one unknown correctly and with ease	Forms simple equations with one unknown correctly	Inconsistently forms simple equations with one unknown	Little evidence in forming simple equations with one unknown
2.	Solve simple equations with one unknown	Solves simple equations with one unknown correctly and with ease	Solves simple equations with one unknown correctly	Inconsistently solves simple equations with one unknown	Little evidence in solving simple equations with one unknown
3.	Use of IT devices to learn more about equations	Uses of IT devices to learn more about equations efficiently and with ease	Uses of IT devices to learn more about equations efficiently	Inconsistently uses IT devices to learn more about equations	Little evidence in using IT devices to learn more about equations

Appendix : List of Learning Resources

Strand	Sub strand	Suggested assessment methods	Suggested learning resources	Suggested non-formal activities
1.0 NUMBERS	Whole Numbers	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Place Value Apparatus • Number Charts • Number Cards • Multiplication Table	1. Learners to play number games e.g. competing forming largest number from given digits. 2. Learners to play number games using IT devices.
	Addition	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Place Value Chart • Abacus	1. Learners to play games involving number patterns. 2. Learners to play number games using IT devices.
	Subtraction	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Place Value Chart • Abacus	1. Learners to work out the difference in scores for various teams during play.

				2. Learners to work out the difference of any two numbers during play.
	Multiplication	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Multiplication Tables	1. Learners to work out the number of seedlings in a seedbed by considering the number of rows and columns. 2. Learners to work out the total number of learners in a class by counting rows and columns.
	Division	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Multiplication Tables	1. Learners to create number games during play activities e.g. what is 15 divided by 4? 2. Learners to divide numbers during play.
	Fractions	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Equivalent Fraction Board • Circular Cut outs • Rectangular Cut outs Counters	1. Learners to play games on creating equivalent fractions. 2. Learners to represent equivalent fractions

				using circular cut outs during play.
	Decimals	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Place Value Charts • Number Cards	1. Learners to represent decimals using paper cut outs during play. 2. Learners to represent decimals on place value charts during play.
2. 0 MEASUREMENT	Length	a) Written exercises b) Oral questions c) Observation d) Group discussion e) Project	• Metre Rule • 1metre Sticks • Tape Measure	1. Learners to mark distances of 400m, 200m during play. 2. Learners to compete running 100 metres during play.
	Area	a) Written exercises b) Oral questions c) Observation d) Group discussion e) Project	• Square Cut Outs • 1cm Squares • 1m Squares	1. Learners to determine area of playing fields e.g. netball pitch, football 2. Learners to determine area of their desks during play.
	Volume	a) Written exercises b) Oral questions c) Observation	• Cubes • Cuboids • Videos	1. Learners to stack up same items during play.

		d) Group discussion e) Project		2. Learners to stack up cubes and cuboids during play.
	Capacity	a) Written exercises b) Oral questions c) Observation d) Group discussion e) Project	• Tea Spoons • Videos • Containers of different sizes • Water, Sand ,Soil	1. Learners to fill big containers using small containers during play. 2. Learners to empty big containers using small containers during play.
	Mass	a) Written exercises b) Oral questions c) Observation d) Group discussion e) Project	• Tea Spoons • Soil Or Sand • Manual/Electronic Weighing Machine • Videos • Beam Balance	1. Learners to play games using a sea saw. 2. Learners to play games using a beam balance.
	Time	a) Written exercise b) Oral questions c) Observation d) Group discussion	• Analogue • Digital Clocks • Digital Watches • Stop Watch	1. Learners to observe shadows and relate them to different times of the day. 2. Learners to discuss activities done at different times of the day during play.

	Money	a) Written exercises b) Oral questions c) Observation d) Group discussion e) Project	• Price List • Classroom shop • Electronic Money Tariffs Chart	1. Learners to role play shopping activities. 2. Learners to role play banking activities e.g. depositing money.
3.0 GEOMETRY	Lines	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Chalk Board Ruler • 30cm Ruler • Straight Edges	1. Learners to make lines using items like strings, number them and skip on them during play. 2. Learners to identify different lines during play.
	Angles	a) Written exercises b) Oral questions c) Observation d) Group discussion e) Project	• Unit Angles • Protractor • Rulers	1. Learners to demonstrate angles during play. 2. Learners to identify angles in the environment during play.
	3-D Objects	a) Written exercises b) Oral questions c) Observation d) Group discussion e) Project	• Cubes • Cuboids • Cylinders, Spheres • Rectangles • Circle and Triangle Cut outs of different sizes	1. Learners to model toys of cars or dolls during play. 2. Learners to model cubes, cuboids, cylinders during play.

4.0 DATA HANDLING	Data Representation	a) Written exercises b) Oral questions c) Observation d) Group discussion e) Project	• Data from different sources	1. Learners to represent different number of items using sticks as tallies practically. 2. Learners to represent different numbers on the ground using tally marks.
5.0 ALGEBRA	Simple Equations	a) Written exercises b) Oral questions c) Observation d) Group discussion	• Information from different sources	1. Learners to play balancing games using a sea saw. 2. Learners to play weighing games using a beam balance.

NOTE

The following ICT devices may be used in the teaching/learning of mathematics at this level;

Learner digital devices (LDD),Teacher digital devices(TDD),Mobile phones, Digital clocks, Television sets, Videos, Cameras, Projectors, Radios, DVD players, CD's, Scanners, Internet among others.