KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

A skilled and Ethical Society

PRIMARY SCHOOL CURRICULUM DESIGN

MATHEMATICS

GRADE 5

First Published 2017

Revised 2024

ISBN:

Published and printed by Kenya Institute of Curriculum Development

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LESSON ALLOCATION AT UPPER PRIMARY

S/No	Learning Area	Number of Lessons
1.	English	5
2.	Kiswahili / Kenya Sign Language	4
3.	Mathematics	5
4.	Religious Education	3
5.	Science & Technology	4
6.	Agriculture and Nutrition	4
7.	Social Studies	3
8.	Creative Arts	6
9.	Pastoral/Religious Instruction Programme	1
Total		**35**

NATIONAL GOALS OF EDUCATION

1. **Foster nationalism, patriotism, and promote national unity**
   Kenya's people belong to different communities, races and religions and should be able to live and interact as one people. Education should enable the learner acquire a sense of nationhood and patriotism. It should also promote peace and mutual respect for harmonious co-existence.

2. **Promote social, economic, technological and industrial needs for national development**
   Education should prepare the learner to play an effective and productive role in the nation.

   a) **Social Needs**
      Education should instill social and adaptive skills in the learner for effective participation in community and national development.

   b) **Economic Needs**
      Education should prepare a learner with requisite competences that support a modern and independent growing economy. This should translate into high standards of living for every individual.

   c) **Technological and Industrial Needs**
      Education should provide the learner with necessary competences for technological and industrial development in tandem with changing global trends.

3. Promote individual development and self-fulfillment

Education should provide opportunities for the learner to develop to the fullest potential. This includes development of one's interests, talents and character for positive contribution to the society.

4 Promote sound moral and religious values

Education should promote acquisition of national values as enshrined in the Constitution. It should be geared towards developing a self-disciplined and ethical citizen with sound moral and religious values.

5. Promote social equity and responsibility

Education should promote social equity and responsibility. It should provide inclusive and equitable access to quality and differentiated education; including learners with special educational needs and disabilities. Education should also provide the learner with opportunities for shared responsibility and accountability through service learning.

6. Promote respect for and development of Kenya's rich and varied cultures

Education should instill in the learner appreciation of Kenya's rich and diverse cultural heritage. The learner should value own and respect other people's culture as well as embrace positive cultural practices in a dynamic society.

7. Promote international consciousness and foster positive attitudes towards other nations

Kenya is part of the interdependent network of diverse peoples and nations. Education should therefore enable the learner to respect, appreciate and participate in the opportunities within the international community. Education should also

facilitate the learner to operate within the international community with full knowledge of the obligations, responsibilities, rights and benefits that this membership entails.

8. Good health and environmental protection

Education should inculcate in the learner the value of physical and psychological well-being for self and others. It should promote environmental preservation and conservation, including animal welfare for sustainable development.

LEVEL LEARNING OUTCOMES

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

a) Communicate appropriately using verbal and or non-verbal modes in a variety of contexts.
b) Demonstrate mastery of number concepts to solve problems in day to day life
c) Demonstrate social skills, moral and religious values for positive contribution to society
d) Develop one's interests and talents for personal fulfilment
e) Make informed decisions as local and global citizens of a diverse, democratic society in an interdependent world.
f) Explore, manipulate, manage and conserve the environment effectively for learning and sustainable development
g) Acquire digital literacy skills for learning and enjoyment.
h) Appreciate the country's rich, diverse cultural heritage for harmonious living

ESSENCE STATEMENT

Mathematics is a learning area that involves computation in numbers and arithmetic, shapes, spatial relations and information processing in the form of data. It is a vehicle of development and improvement of a country's economic development. By learning mathematics, learners develop a 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 competencies acquired by the learner in the early years of education. Learning mathematics will also enhance the learner' competencies in numeracy as a foundation of STEM at the higher levels of Education cycle. Mathematics is also a subject of enjoyment and excitement a it gives learners opportunities for creative work and fun.

SUBJECT GENERAL LEARNING OUTCOMES

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

a) Demonstrate mastery of number concepts by working out problems in day-to-day life.
b) Apply measurement skills to find solutions to problems in a variety of contexts.
c) Apply properties of geometrical shapes and spatial relationships in real life experiences.
d) Apply data handling skills to solve problems in day-to-day life.
e) Analyze information using algebraic expressions in real life situations.
f) Apply mathematical ideas and concepts to other learning areas or subjects and in real life contexts.
g) Develop confidence and interest in mathematics for further learning and enjoyment.
h) Develop values and competencies for a cohesive harmonious living in the society.
i) Manage pertinent and contemporary issues for enhanced inter-personal relationships.

STRAND 1.0: NUMBERS

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested 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	The learner is guided to: • identify place value of digits up to hundreds of thousands using place value apparatus, • identify total value of digits up to hundreds of thousands using place value apparatus, • read numbers up to hundreds of thousands in symbols from number charts or cards, • read and write numbers up to tens of thousands in words from number charts or cards, • arrange numbers up to tens of thousands in increasing and decreasing order using number cards and share with other groups, • discuss and round off numbers up to tens of thousands to the	1. Where is ordering of numbers used in real life? 2. Why do we round off numbers?

		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, i) appreciate use of whole numbers in real life situations.	nearest hundred and thousand using number cards and share with other groups, • use number cards to divide different numbers by 2, 5 and 10 and come up with divisibility rules. • use number charts to identify factors and divisors of given numbers, • discuss and identify the common factors and divisors and share with others. determine the highest or greatest common factor or divisor, • discuss identify multiples of given numbers. And identify the common multiples as well as the least common multiple, • play games involving numbers using digital devices or other resources.	

Core Competences to be developed: ● Critical thinking and problem solving: learner orders and rounds off numbers. Learning to learn: learner reads, writes and relates numbers computing total values of numbers.
Values: Learners work together in pairs/groups in identifying factors, divisors and multiples of numbers to enhance unity.
Pertinent and Contemporary Issues (PCIs): Learner observes safety precautions while handling apparatus for carrying out operations on numbers to enhance safety.
Link to other subjects: Learners' language skills are enhanced as they learn and relate numbers symbols and words.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**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 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) appreciate use of addition of whole numbers in real life situations.	The learner is guided to: • work out the sum of three 6 - digit numbers without regrouping up to 1,000 000 using place value apparatus, • work out up to two 6 - digit numbers with double regrouping up to 1,000 000 using place value apparatus, • estimate sums by rounding off the addends to the nearest hundred and thousand using a number line, • create patterns involving addition of numbers up to a sum of 1,000 000 using number cards and other resources, • play games involving addition of numbers	1. How do you estimate the sum of given numbers? 2. How do you create patterns in addition?

			using digital devices and other resources.	

Core Competences to be developed:

- Creativity and imagination: learners make number patterns involving addition.
- Digital literacy: learners use digital devices and other resources to learn and play games in addition concept development.

Values:

Learners enhance responsibility by taking their roles individually to achieve common solutions in addition of numbers.

Pertinent and Contemporary Issues (PCIs):

Learners enhance social cohesion by working in groups using digital resources for learning addition of numbers.

Link to other subjects:

Learners discuss in groups and build up their vocabulary in Languages as they encounter new words in math concepts.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**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) appreciate subtraction of	The learner is guided to: ● work out subtract of up to 6-digit numbers without regrouping using place value apparatus, ● discuss and work out subtraction of up to 6-digit numbers with regrouping using place value apparatus, ● estimate difference by rounding off the minuend and subtrahend to the nearest hundred and thousand using a number line, ● work out questions involving addition and subtraction, ● create patterns involving subtraction of whole numbers from up to 1,000 000 using number charts, ● play games involving subtraction of numbers	1. How do you estimate difference to the nearest hundred? 2. How can you create number patterns involving subtraction?

		numbers in real life situations.	using digital devices and other resources.	
Core Competences to be developed: ● Creativity and imagination: learners create number patterns involving subtraction. ● Self-efficacy: learners report the group's discussion to others in carrying out the various subtraction skills.				
Values: Learners enhance unity by collectively owning their work in the subtraction concept tasks processes.				
Pertinent and Contemporary Issues (PCIs): Learners enhance social cohesion as they do group work in estimation of differences.				
Link to other subjects Learners enhance Language skills from the terms acquired from concepts of subtraction.				

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**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 numbers to the nearest ten in different situations, c) make patterns involving multiplication of numbers with product not exceeding 100 in in different situations, d) appreciate use of multiplication in real life.	The learner is guided to: ● work out multiplication of up to a 3 - digit number by up to a 2 - digit number using different methods, ● estimate product by; - rounding off factors - using compatibility of numbers - own strategies, ● create patterns involving multiplication of numbers with products not exceeding 100, ● play games involving multiplication of whole numbers using digital devices and other resources.	1. Where is multiplication used in real life? 2. How can you form patterns involving multiplication?

Core Competences to be developed: ● Communication and collaboration: learners work in groups to make patterns involving multiplication. ● Learning to learn: learners explore other methods of working out products of numbers.
Values: Learners show unity as they work in groups to make patterns involving multiplication.
Pertinent and Contemporary Issues (PCIs): Learners enhance self-esteem as they discover own strategies in multiplication and estimation of products of numbers.
Link to other subjects Learners enhance Mathematics Language skills from the terms acquired from concepts of multiplication.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**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, e) appreciate use of division of whole numbers in real life situations.	The learner is guided to: ● work out division of 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, ● discuss and demonstrate that multiplication is the opposite of division, ● estimate quotients by rounding off the dividend and divisor to the nearest ten, ● work out questions involving addition, subtraction, multiplication and division, ● create number games and puzzles involving division, ● play games involving division of whole numbers using digital devices and	1) Where is division used in real life? 2) How can we estimate quotients?

			other resources.	
Core Competences to be developed: ● Creativity and Imagination: learners create number games and puzzles involving division. ● Digital Literacy: learners play digital games involving divisions.				
Values: Learners enhance social justice as they ensure equal sharing of resources among themselves and wider society.				
Pertinent and Contemporary Issues (PCIs): Learners enhance self-esteem as they discover strategies of working out division and as they create number games and puzzles.				
Link to other subjects Learners enhance Mathematics Language skills from the terms acquired from concepts of division.				

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**1.6 Fractions** (8 Lessons)	By the end of the sub strand, the learner should be able to; a) simplify fractions in different situations, b) compare fractions in order to make decisions in real life, c) order fractions with denominators not exceeding 12 in different situations, d) add fractions with same denominator in different situations, e) subtract fractions with same denominator in different situations, f) add fractions with one renaming in different situations, g) subtract fractions with one renaming in different	The learner is guided to: ● identify equivalent fractions using a fraction board or chart, ● represent equivalent fractions using real objects, ● simplify given fractions using a fraction chart, ● compare given fractions using paper cut outs and concrete objects, ● order given fractions in increasing and decreasing order using a number line, paper cut outs, real objects, ● add two fractions with the same denominator using paper cut outs, number line, real objects, ● subtract two fractions with the same denominator using	1. Why do we order fractions in real life? 2. Where are fractions used in real life?

		situations, h) appreciate the use of fractions in real life.	paper cut- outs, number line, real objects, ● Carry out addition and subtraction of two fractions by renaming one fraction using equivalent fractions.	
Core Competences to be developed: ● Learning to learn: learners order, compare and simply fractions. ● Digital Literacy: learners play digital games involving fractions.				
Values: Learners show integrity as they report fractions accurately.				
Pertinent and Contemporary issues (PCIS): Learners observe safety precautions while using learning resources to enhance safety.				
Link to other subjects: Learners enhance their skills in fractions from using paper cut- outs, number lines or real objects that is learnt from Creative Arts.				

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**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) appreciate use of decimals in real life situations.	The learner is guided to: ● work out place value of decimals up to thousandths using a place value chart, ● order decimals up to thousandths from smallest to largest and from largest to smallest using number cards or number line, ● work out addition of decimals up to thousandths using place value apparatus, ● subtract decimals situations up to thousandths using place value apparatus, ● identify and share information on where decimals are used in real life, ● play games involving decimals using digital and other resources.	1. Where do you use decimals in real life? 2. What is the importance of ordering decimals?

Core Competences to be developed ● Creativity and Imagination: learners order decimals. ● Self-efficacy: learners explore further operations with decimals.
Values: Learners show social justice as they take turns in playing digital games involving decimals.
Pertinent and Contemporary Issues (PCIs): Learners show social cohesion as they identify and share information on where decimals are used in real life.
Link to other subjects: Learners enhance reading of decimal numbers from reading quantities of ingredients in Agriculture and Nutrition.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**1.8 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) appreciate use of equations in solving problems in real life.	The learner is guided to: ● discuss and form equations with one unknown from daily experiences, ● solve equations with one unknown, ● use digital devices or other resources to learn more about equations.	Where are equations used in real life?
Core Competences to be developed: ● Critical thinking and problem solving: learners solve equations with one unknown. ● Digital literacy: learners learn more about equations using digital devices.				
Values: Learners shows honesty as they solve problems and give answers as a pair/group or individuals. Learners show social cohesion as they work in pairs/groups discussing simple equations.				
Pertinent and Contemporary Issues (PCIs): Learners observe safety precautions as they manipulate the learning resources to enhance safety**.**				
Link to other subjects:				

Learners discuss and solve simple equations while developing their vocabulary from Languages.

Assessment Rubrics

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to use place value and total value of digits up to hundreds of thousands	Uses place value and total value of digits up to hundreds of thousands correctly and systematically	Uses place value and total value of digits up to hundreds of thousands correctly	Uses place value or total value of digits up to hundreds of thousands correctly	Uses place value or total value less than hundreds of thousands correctly
Ability to read, write and relate numbers up to tens of thousands in symbols and in words	Reads, writes and relates numbers up to tens of thousands in symbols and in words correctly and proficiently	Reads, writes and relates numbers up to tens of thousands in symbols and in words accurately	Reads, writes or relates numbers up to tens of thousands in symbols and in words accurately	Reads or writes numbers up to tens of thousands in symbols or in words accurately
Ability to order and round off numbers up to tens of thousands	Orders and rounds off numbers up to 10, 000 systematically and correctly	Orders and rounds off numbers up to 10, 000 correctly	Orders or rounds off numbers up to less than 10, 000 correctly	Orders or rounds off numbers up to less than 5, 000 correctly
Ability to use Least Common Multiple (LCM), highest Common Factor (HCF), Greatest	Uses LCM, HCF, GCD and divisibility tests of 2, 5 and 10 correctly and systematically	Uses LCM, HCF, GCD and divisibility tests of 2, 5 and 10 correctly	Uses at least three of the following: LCM, HCF, GCD or divisibility tests of 2, 5 and 10 correctly	Uses one of the following: LCM, HCF, GCD or divisibility tests of 2,

Common Divisor (GCD) and divisibility tests of 2, 5 and 10 in different situations				5 and 10 correctly
Ability to add up to 6 - digit numbers without regrouping and with double regrouping up to a sum of 1,000 000	Adds up to 6 - digit numbers without regrouping and with double regrouping up to a sum of 1,000 000 correctly and systematically	Adds up to 6 - digit numbers without regrouping and with double regrouping up to a sum of 1,000 000 correctly.	Adds up to 6 - digit numbers without regrouping or with double regrouping up to a sum of 1,000 000 correctly.	Adds up to 6 - digit numbers without regrouping or with double regrouping up to a sum less than 1,000 000 correctly
Ability to create patterns involving addition, subtraction and multiplication	Makes patterns involving addition, subtraction and multiplication accurately and creatively	Makes patterns involving addition, subtraction and multiplication accurately	Makes patterns involving any two of the following: addition, subtraction or multiplication accurately	Makes patterns involving any one of the following: addition, subtraction or multiplication accurately
Ability to subtract up to 6 - digit numbers without regrouping and with regrouping	Subtracts up to 6 - digit numbers without regrouping and with regrouping correctly and systematically.	Subtracts up to 6 - digit numbers without regrouping and with regrouping correctly.	Subtracts up to 6 - digit numbers without regrouping or with regrouping correctly.	Subtracts up to 6 - digit numbers without regrouping correctly.

Ability to Multiply up to a 3-digit number by a 2-digit number	Multiplies a 3-digit number by a 2-digit number and a single digit; 2 - digit by 2 - digit and a single digit number correctly and systematically.	Multiplies a 3-digit number by a 2-digit number and a single digit; 2 - digit by 2 - digit and a single digit number correctly.	Multiplies a 3-digit number by a 2-digit number or a single digit; 2-digit by 2-digit or a single digit number correctly.	Multiplies a 3-digit number by a 2-digit number or a single digit number correctly.
Ability to 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	Divides a 3-digit number by a 2-digit number and a single digit; 2-digit by 2-digit and a single digit number where the dividend is greater than the divisor correctly and systematically	Divides a 3-digit number by a 2-digit number and a single digit; 2-digit by 2-digit and a single digit number where the dividend is greater than the divisor correctly	Divides a 3-digit number by a 2-digit number or a single digit; 2-digit by 2-digit or a single digit number where the dividend is greater than the divisor correctly.	Divides a 3-digit number by a 2-digit number or a single digit number where the dividend is greater than the divisor correctly.
Ability to 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 systematically	Performs combined operations involving addition, subtraction, multiplication and division of whole numbers correctly	Performs combined operations involving addition, subtraction, multiplication or division of whole numbers correctly.	Performs combined operations involving one of the following: addition, subtraction, multiplication and division of whole numbers correctly.

Ability to use and compare fractions to make decisions	Uses and compares fractions to make decisions accurately and systematically	Uses and compares fractions to make decisions accurately	Uses or compares fractions to make decisions accurately	Uses fractions accurately
Ability to simplify and order fractions with denominators not exceeding 12 in different situations	Simplifies and orders fractions with denominators not exceeding 12 accurately and systematically	Simplifies and orders fractions with denominators not exceeding 12 accurately	Simplifies or orders fractions with denominators not exceeding 12 accurately	Simplifies fractions with denominators not exceeding 12 accurately
Ability to add and subtract fractions in different situations	Adds and subtracts fractions systematically and correctly	Adds and subtracts fractions correctly	Adds or subtracts fractions correctly	Adds fractions correctly
Ability to identify and order decimals up to thousandths in different situations	Identifies and orders decimals up to thousandths systematically and accurately	Identifies and orders decimals up to thousandths accurately	Identifies and orders decimals up to hundredths accurately	Identifies and orders decimals up to tenths accurately
Ability to add and subtract decimals up to thousandths in real life situations	Adds and subtracts decimals up to thousandths systematically and correctly	Adds and subtracts decimals up to thousandths correctly	Adds and subtracts decimals up to hundredths correctly	Adds and subtracts decimals up to tenths correctly

Ability to form and solve simple equations with one unknown involving real life situations	Forms and solves simple equations with one unknown systematically and accurately	Forms and solves simple equations with one unknown accurately	Forms or solves simple equations with one unknown accurately	Forms simple equations with one unknown accurately

STRAND 2.0: MEASUREMENT

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested 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) identify the kilometre (km) as a unit of measuring length in real life, b) estimate 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	The learner is guided to: ● discuss the kilometre as a unit of measuring length real life, ● discuss in groups and estimate distance in kilometres practically using play play materials such as ropes and share their estimates, ● measure distance estimated and compare findings with others, ● establish the relationship between the kilometre and metre practically, ● convert kilometres to metres and metres to kilometres, ● determine distance in	1. How do you measure distance? 2. Why do you measure distance?

		numbers in real life situations, h) divide metres and kilometres by whole numbers in real life situations, i) appreciate the use of kilometres and metres in measuring length in real life.	kilometres and metres involving addition, subtraction multiplication and division, ● play digital games involving length in kilometres and metres or use other resources such as games in athletics.	
Core Competences to be developed: ● Creativity and Imagination: in measuring or estimating distance. ● Critical thinking and problem solving: in establishing the relationship between the kilometre and metre practically				
Values: ● Learners show integrity as they record measurements. ● Learners show respect as they take turn in measuring distance in kilometres practically using ropes.				
Pertinent and Contemporary Issues (PCIs): Learners observe safety precautions while handling measuring instruments to enhance safety.				
Link to other subjects: Leaners use new terms in length during group work and sharing estimates as learnt from Languages.				

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**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) appreciate the use of cm^2 in working out area in real life.	The learner is guided to: ● measure, trace and cut out 1 cm by 1cm units, and refer the area of each as one square centimetre ($1cm^2$), ● cover a given surface using 1-centimetre square cut outs and count the number of cut outs to get the area in cm^2, ● 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, ● play games involving area using multiplication charts.	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.				

Values: Learners show unity as they measure, trace and cut out objects and measure the area.
Pertinent and Contemporary Issues (PCIs): Learners observe safety precautions as they cut out 1 cm squares to enhance safety.
Link to other subjects: Learners discuss measurement of area and apply skills from area of planting fields in Agriculture and Nutrition.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**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) derive the formula for the volume of cuboid as v= l x w x h practically, c) work out volume of cuboids in cubic centimetres (cm^3) using the formula, d) derive the formula for the volume of cube as v= s x s x s	The learner is guided to: • measure the sides of a 1cm cube and identify it as a unit of measuring volume, • arrange a number of cubes along the length, width and vary the number of layers, • count the number of cubes used in activity above and record, • establish that the total number of cubes represents the volume of the cube or cuboid formed, • 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 cuboid as	Where is Volume applicable in real life?

		practically, e) work out volume of cubes in cubic centimetres ($cm^{3)}$ using the formula f) appreciate use of cubic centimetres in measuring volume in real life.	v = l x w x h, ● discuss the formula for volume of a cube v= s x s x s where, **s** is the side of a cube, ● manipulate cubes and cuboids by flipping around using digital devices or other resources, ● draw cubes and cuboids using digital devices and other resources, ● watch a video on working out volume of a cube/cuboid, ● measure the dimensions of a 1cm cube to establish its volume as 1cm x 1cm x 1cm = $1cm^3$ and share with other groups, ● work out the volume of cubes and cuboids in cubic centimetres, ● use digital devices and other resources to play games involving volumes.	

Core Competences to be developed: ● Learning to learn: leaners explore volumes in real life situations. ● Creativity and imagination: learners use cubes to make cuboids and calculate volume.
Values: Learners show responsibility and respect as they handle the various objects in the environment.
Pertinent and Contemporary Issues (PCIs): Learners observe safety while handling the various objects in the environment to enhance safety.
Link to other subjects: Learners discuss and measure of volume of different ingredients that are used in cooking food as learnt from Agriculture and nutrition.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**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, f) add litres and millilitres in real life situations, g) subtract litres and in real life situations,	The learner is guided to: ● fill a teaspoon or cylindrical container graduated in millilitres with water and identify that the spoon or cylinder holds 5 millilitres, ● divide the water in the spoon or cylinder into 5 equal parts and identify each part as 1 millilitre, ● fill small containers with water and measure the capacity in millilitres using a container graduated in millilitres, ● watch a video on	Where are litres and millilitres used in day-to-day life?

		h) multiply litres and millilitres by whole numbers in real life situations, i) divide litres and millilitres by whole numbers in different situations, j) appreciate use of litres and millilitres in measuring capacity in real life.	measuring capacity in millilitres, ● estimate and measure capacity of different containers using a container graduated in millilitres.	
Core Competences to be developed: ● Critical thinking and problem solving: learners convert unit of capacity, relate unit of capacity and work questions involving capacity. ● Digital literacy: learner draws containers of different capacities using digital devices.				
Values: ● Learners show responsibility as they take roles when working in pairs/groups in converting litres to millilitres.				
Pertinent and Contemporary Issues (PCIs): ● Learners enhance social cohesion as they work in pairs/groups in measuring capacity. ● Learners observe safety as they use containers and water during measuring activities				
Link to other subjects: Learners count the number of 100 millilitre containers used to fill the 1-litre container as learnt from Agriculture and Nutrition in watering plants in containers				

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**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 f) life situations, g) add grams and kilograms in real life situations, h) subtract grams and kilograms in real life situations, i) multiply grams and kilogram by whole numbers	The learner is guided to: ● discuss in groups, scoop sand or soil using a teaspoon. explain the learners the amount scooped is about 5 grams, ● divide the amount scooped into 5 equal groups. each of these small groups is about one gram, ● using an electronic or a manual weighing machine measure mass of sand or soil in grams. learners to watch a video on measuring mass in grams, ● estimate and measure mass of items in grams using a beam balance or electronic weighing machine, ● establish the relationship between the kilogram and the gram using a beam balance or electronic weighing machine (1kg = 1000g), ● Convert kilograms to grams and grams to kilogram in real life,	What is the importance of measuring mass?

		in real life situations, j) divide grams and kilograms by whole numbers in real life situations, k) appreciate use of kilograms and grams in measuring mass in real life.	• Determine mass of items in grams and kilograms using different operations in real life situations, Play games involving mass by measuring mass of different objects or substances using improvised weighing balance.	
Core Competences to be developed: • Communication and collaboration: learners measure mass in grams. • Digital literacy: learners play digital games involving mass.				
Values: • Learners show Respect as they work in groups or pairs in measuring mass.				
Pertinent and Contemporary Issues (PCIs): Learners enhance social cohesion work in pairs or groups in measuring mass.				
Link to other subjects: Learners enhance skills of using the units of measuring mass in grams as used from Science and technology.				

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**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 through second hand, b) identify the relationship between the minute and the second in real life situations, 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	The learner is guided to: ● discuss and identify second hand from a clock ● 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, ● measure time taken to do various activities in seconds, ● establish the relationship between seconds and minute using a clock or stop watch, watches,	How can we read and tell time?

		by whole numbers in real life situations, h) use digital devices and other resources to read time in seconds from a clock i) appreciate use of minutes and seconds as units of measuring time in real life situations.	• determine time durations in minutes and seconds using different operations in real life situations, • use digital devices and other resources to tell time from clocks.	
Core Competences to be developed: • Creativity and imagination: learners work out questions involving time in real life situations. • Digital literacy: learners play digital games involving time.				
Values: • Learners show responsibility as they use digital devices to determine time durations.				
Pertinent and Contemporary Issues (PCIs): • Learners enhance Social cohesion as they estimate seasons of community activities such as planting, weeding or holidays. • Learners demonstrate self-awareness as they identify changes in their body during puberty.				
Link to other subjects: Learners apply reading and writing skills from Languages to discuss, read and record time from different clocks.				

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**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, 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) appreciate use of budgeting, bank services	The learner is guided to: ● discuss meaning and importance of a budget, prepare a budget of about 5 items that can be found in the classroom model shop, ● discuss meaning and importance of taxes to the governments, and study receipts from sales to identify amount of taxes paid, ● discuss provision of loans, safe custody of items, money deposits and withdrawals, savings as services provided by banks, ● brainstorm on factors to consider when saving money and share with others, ● use digital devices to learn how to transfer money from one	1. How do you spend your money? 2. What is the importance of paying taxes?

		and payment of taxes in real life.	person to another as part of bank services.	
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.				
Values: ● Learners show patriotism as they appreciate features in the Kenyan currency.				
Pertinent and Contemporary Issues (PCIs): ● Learners enhance financial literacy as they discuss about budgeting, savings, banking.				
Link to other subjects: Learners learn about Kenyan currency and importance of paying taxes as enhanced in Social studies as part of citizenship.				

Suggested Assessment Rubrics

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to add, subtract, multiply and divide metres and kilometres by whole numbers	Adds, subtracts, multiplies and divides metres and kilometres, by whole numbers systematically and accurately	Adds, subtracts, multiplies and divides metres and kilometres by whole numbers accurately	Adds, subtracts, multiplies and divides metres or kilometres by whole numbers accurately	Adds or subtracts metres and kilometres by whole numbers accurately
Ability to work out area of rectangles and squares in square centimetres (cm2)	Works out area of rectangles and squares in square centimeters systematically and accurately	Works out area of rectangles and squares in square centimeters accurately	Works out area of rectangles or squares in square centimeters accurately	Works out area of rectangles in square centimeters accurately
Ability to work out volume of cuboids and cubes in cubic centimetres (cm^3)	Works out volume of cuboids and cubes systematically and accurately	Works out volume of cuboids and cubes accurately	Works out volume of cuboids or cubes accurately	Works out volume of cuboids accurately
Ability to estimate and measure capacity in multiples	Estimates and measures capacity in	Estimates and measures capacity in multiples of 5	Estimates or measures capacity in multiples of 5	Estimates capacity in multiples of 5

of 5 millilitres	multiples of 5 milliliters systematically and accurately	milliliters accurately	milliliters accurately	milliliters accurately
Ability to convert litres to millilitres and millilitres to litres	Converts litres to millilitres and millilitres to litres systematically and accurately	Converts litres to millilitres and millilitres to litres accurately	Converts litres to millilitres or millilitres to litres accurately	Converts litres to millilitres accurately
Ability to add, subtract, multiply and divide litres and millilitres, by whole numbers	Adds, subtracts, multiplies and divides litres and millilitres by whole numbers systematically and accurately	Adds, subtracts, multiplies and divides litres and millilitres by whole numbers accurately	Adds, subtracts, multiplies or divides litres or millilitres by whole numbers accurately	Adds or subtracts litres or millilitres accurately
Ability estimate and measure mass in grams	Estimates and measures mass in grams systematically and accurately	Estimates and measures mass in grams accurately	Estimates or measures mass in grams accurately	Estimates mass in grams accurately
Ability to add, subtract, multiply and divide grams and kilograms by whole numbers	Adds, subtracts, multiplies and divides grams and kilograms by whole numbers systematically and accurately	Adds, subtracts, multiplies and divides grams and kilograms by whole numbers accurately	Adds, subtracts, multiplies and divides grams or kilograms by whole numbers accurately	Adds or subtracts grams and kilograms accurately

Ability to Add, subtract, multiply and divide minutes and seconds by whole numbers	Adds, subtracts, multiplies and divides minutes and seconds by whole numbers systematically accurately	Adds, subtracts, multiplies and divides minutes and seconds by whole numbers accurately	Adds, subtracts, multiplies and divides minutes and seconds by whole numbers accurately	Adds minutes and seconds accurately
Ability to identify the importance of a budget and tax to the government	Identifies the importance of a budget and tax to the government accurately and systematically	Identifies the importance of a budget and tax to the government correctly	Identifies the importance of a budget or tax to the government correctly	Identifies the importance of a budget to the government correctly

STRAND 3.0: GEOMETRY

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested 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) appreciate use of various types of lines in real life.	The learner is guided to: ● identify lines in the classroom and within the environment, ● describe lines in the environment and identify them as horizontal and vertical lines, parallel and perpendicular lines, ● draw and model horizontal and vertical lines, parallel and perpendicular lines, ● use digital devices and other resources to draw more lines.	Where are perpendicular lines used?
Core Competences to be developed: ● Learning to learn: learners draw different horizontal, vertical, parallel and perpendicular lines. ● Digital literacy: learners use digital devices to learn more about lines.				

Values: Learners demonstrate unity as they work in groups to draw different horizontal, vertical, parallel and perpendicular lines.
Pertinent and Contemporary Issues (PCIs): Learners observe safety as they, in pairs or groups or as individual, identify uses of different lines.
Link to other subjects: Learners discuss, draw and model different types of lines as modelled in **Creative Arts**.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 **Geometry**	**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) read a protractor as a tool for measuring angles, c) use protractor to angles in different situations d) identify the degree as a unit of measuring angle, e) measure angles in degrees in different situations, f) identify the use of angles in the environment, g) appreciate the use of angles in our day-to-day life.	The learner is guided to: ● make clockwise, quarter and half turn, and relate them to angles in the environment, ● discuss the use of angles in the environment, ● make a unit angle and use it to measure angles in the environment, ● divide a 10^{o} angle into 10 equal parts and identify each part as equal to 1 degree, ● measure angles in degrees using a protractor, ● measure angles in degrees using a protractor and share results with others, ● use digital devices and other resources to draw plane figures and learn about angles.	Where are angles used in the environment?
Core Competences to be developed: ● Communication and collaboration: learners work in pairs or groups in making unit angles and measuring angles.				

● Learning to learn: learners identify the degree as a unit of measuring angles.
Values: ● Learners show responsibility as they share tasks or roles in their groups in making unit angles and measuring angles.
Pertinent and Contemporary Issues (PCIs): ● Learners enhance social cohesion work in groups in making unit angles and measuring angles. ● Learners observe safety while handling pair of scissors, razor blades in making unit angles and measuring angles.
Link to other subjects: Learners discuss, draw and model different types of lines and angles as modelled in **Creative Arts**.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Geometry	**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) appreciate the use of 3-D objects in the environment.	The learner is guided to: ● identify, collect objects and discuss cubes, cuboids, cylinders, spheres and pyramids as 3-D objects in the environment and share with other groups, ● watch a video on 3-D objects, ● describe 2-D shapes found in 3-D objects and share with other groups, ● use digital devices and other resources to draw and learn more about 3-D objects.	Where are 3-D objects used in the environment?

Core Competences to be developed:

- Learning to learn: learners are prepared for further learning in 3-D objects and in choice of best outcome materials.
- Critical thinking and imagination: learners identify 2-D shapes in 3-D objects.

Values:

- Responsibility: as learners share and handle objects in pairs or groups for learning and disposing them.

Pertinent and Contemporary Issues (PCIs):

Learners observe safety when handling different objects in pairs or groups.

Link to other subjects:
Learners draw 3-D objects and 2-D shapes as learnt and modelled from **Creative Arts.**

Assessment Rubrics

Level / **Indicator**	**Exceeds Expectations**	**Meets Expectations**	**Approaches Expectations**	**Below Expectations**
Ability to draw horizontal, vertical, Perpendicular and parallel lines	Draws horizontal, vertical, Perpendicular and parallel lines accurately and systematically	Draws horizontal, vertical, Perpendicular and parallel lines accurately	Draws horizontal, vertical, Perpendicular or parallel lines accurately	Draws any two of horizontal, vertical, Perpendicular and parallel lines accurately
Ability to read and use a protractor as a tool for measuring angles	Reads and uses protractor as a tool for measuring angles accurately and systematically	Reads and uses protractor as a tool for measuring angles accurately	Reads or uses protractor as a tool for measuring angles accurately	Reads a protractor as a tool for measuring angles accurately

Ability to identify the degree and measure angles in degrees	Identifies the degree and measures angles in degrees accurately and systematically	Identifies the degree and measures angles in degrees accurately	Identifies the degree or measures angles in degrees accurately	Identifies the degree or measure angles in degrees accurately with continuous support
Ability to describe 2-D shapes in 3-D objects in the environment	Describes 2-D shapes in 3-D objects accurately and systematically	Describes 2-D shapes in 3-D objects accurately	Describes 2-D shapes in 3-D objects partially accurately	Describes 2-D shapes in 3-D objects accurately with continuous support

STRAND 4.0: DATA HANDLING

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
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 data of about 30 items relating to real experiences b) draw a table to record data from real life c) draw tally marks of the collected and any data d) prepare a frequency table to represent data e) interpret data represented by frequency tables f) appreciate use frequency tables in real life.	The learner is guided to: ● collect data involving day to day experiences such as marks, shoe number, age of learners in a class etc, ● prepare data collection and recording tools and record data on books or charts, ● discuss and draw tally marks for the data, ● organize it in a table from real life situations, ● discuss information represented by objects piled vertically, ● use digital devices and other resources to learn more on representing data in tables.	Why is representing data in tables important?

Core Competences to be developed: ● Learning to learn: learners practice piling items as a form of data organization. ● Digital literacy: learners use Digital devices and other resources to learn more about frequency tables.
Values: Learners show unity as they work in groups collecting, organizing, representing data in tables and interpreting the information.
Pertinent and Contemporary Issues (PCIs): Learners observe safety while using data collection tools.
Link to other subjects: Learners collect data while classifying them as plants and animals counts as learnt from **Science and Technology**.

Assessment Rubrics

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to collect data, draw tally marks and record data on a table	Collects data, draws tally marks and records data on a table accurately and systematically	Collects data, draws tally marks and records data on a table accurately	Collects data, draws tally marks or records data on a table accurately	Collects data, draws tally marks or records data on a table accurately with continuous support
Draw frequency tables, represent and interpret data	Draws frequency tables, represents and interprets data accurately and systematically	Draws frequency tables, represents and interprets data accurately	Draws frequency tables, represents or interprets data accurately	Draws frequency tables and represents data accurately

Appendices

APPENDIX I: 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 Digital 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 Digital 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 • 1 metre 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 d) Group discussion e) Project	• Cubes • Cuboids • Videos	1. Learners to stack up same items during play. 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	• 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.

		e) Project		
	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	• Cubes • Cuboids • Cylinders, Spheres • Rectangles • Circle and	1. Learners to model toys of cars or dolls during play. 2. Learners to model cubes, cuboids,

		discussion e) Project	• Triangle • Cut outs of different sizes	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.

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.

APPENDIX II: SUGGESTED ASSESSMENT METHODS AND TOOLS

1. Written tests and quizzes
2. Rating scales

3. Projects
4. Observation Schedules
5. Portfolio
6. Assessment Rubric

APPENDIX III: CSL GUIDELINES FOR UPPER PRIMARY (GRADE 4-6)

At this level, the goal of the CSL activity is to provide linkages between concepts learnt in the various Learning Activities and the real life experiences. Learners begin to make connections between what they learn and the relevance to their daily life. CSL is hosted in the Social studies learning area. The implementation of the CSL activity is a collaborative effort where the class teacher coordinates and works with other subject teachers to design and implement the integrated CSL activity. Though they are teacher-guided, the learners should progressively be given more autonomy to identify problems and come up with solutions. The safety of the learners should also be taken into account when selecting the CSL activity. The following steps for the integrated CSL activity should be staggered across the school terms:

Steps in carrying out the integrated CSL activity
1) Preparation ● Map out the targeted core competencies, values and specific learning areas skills for the CSL activity ● Identify resources required for the activity (locally available materials) ● Stagger the activities across the term (Set dates and time for the activities) ● Communicate to learners, parents/caregivers/guardians, school administration, teachers and other relevant stakeholders in the school community ● Identify and develop assessment tools

2) Implementation CSL Activity

- Assigning roles to learners.
- Ensure every learner actively participates in the activity
- Observe learners as they carry out the CSL activity and record feedback**.**
- Use an appropriate assessment tool to assess both the process and the product (Assess learner's work from the beginning to the end product)
- Assess the targeted core competencies, values and subject skills.

3) Reflection on the CSL Activity

Conduct a self-evaluation session with learners on the integrated CSL activity undertaken by discussing the following:

- what went well and why
- what did not go well and why,
- what can be done differently next time
- what they have learnt.

There will be one integrated CSL activity that will be conducted annually**.** The thematic areas for the integrated CSL activity will be derived from the broader categories of the PCIs and concepts from the various Learning Areas. Teachers are expected to vary the themes yearly to allow learners to address different PCIs within their contexts. There should be a linkage between the skills from the learning areas and the themes.

The integrated CSL activity will take a Whole School Approach (WSA) where the entire school community is involved (learners, parents/caregivers/guardians, school administration, teachers). Parents/caregivers/guardians are key stakeholders in the

planning and execution of the CSL activity. Although the teacher takes the lead role in the planning and integration of the CSL activity, learners will be expected to participate actively in the whole process.

The CSL activity provides an opportunity for the development of core competencies and the nurturing of various values. The teacher is expected to vary the core competencies and values emphasised in the activity yearly.

ASSESSMENT OF THE CSL ACTIVITY

Assessment of the integrated CSL activity will focus on 3 components namely: skills from various learning areas applied in carrying out the activity, and core competencies and values demonstrated. Assessment should focus on both the process and end product of the CSL activity. The teacher will assess learners in groups using various tools such as an observation schedule, checklist or rating scale or any other appropriate tool.