KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

A Skilled and Ethical Society

PRIMARY SCHOOL CURRICULUM DESIGN

MATHEMATICAL ACTIVITIES

GRADE 1

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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 instil 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-fulfilment**
   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 instil 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.

LESSON ALLOCATION AT LOWER PRIMARY

S/No	Learning Area	Number of Lessons per week
1.	Indigenous Language Activities	2
2.	Kiswahili Language Activities / Kenya Sign Language Activities	4
3.	English Language Activities	5
4.	Mathematical Activities	5
5.	Religious Education Activities	3
6.	Environmental Activities	4
7.	Creative Activities	7
	Pastoral Instruction Programme	1
Total		**31**

GENERAL LEARNING OUTCOMES FOR PRIMARY EDUCATION

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 as 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:

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. Apply properties of geometrical shapes and spatial relationships in real life experiences.
4. Apply data handling skills to solve problems in day-to-day life.
5. Analyze information using algebraic expressions in real life situations.
6. Apply mathematical ideas and concepts to other learning areas or subjects and in real life contexts.
7. Develop confidence and interest in mathematics for further learning and enjoyment.
8. Develop values and competencies for a cohesive harmonious living in the society.
9. 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	**1.1 Pre-Number Activities** (20 lessons)	By the end of the sub strand, the learner should be able to: a) sort objects according to similar attributes in different situations, b) match objects with similar attributes in the environment, c) order objects according to given criteria in different situations, d) create patterns of different sizes and shapes using real objects, e) appreciate the use of sorting and grouping items in day-to-day activities.	The learner is guided to: ● in pairs/groups, collect different types of safe objects from the immediate environment, ● group objects according to attributes such as size, colour, use, shape and texture, ● pair objects with similar attributes such as size, colour, use, shape and texture, ● arrange objects according to size from smallest to biggest and from biggest to smallest, ● make patterns of different shapes and sizes using real objects, ● in pairs/groups, assist in arranging items like fruits, cereals, for example beans, maize and rice according to size, colour, shape and storage at home.	1. How can we group objects? 2. How can we arrange objects?

Core Competencies to be developed:

- Critical thinking and problem solving: learners complete tasks by following instructions as they sort objects according to size, colour, use, shape and texture and make patterns of different shapes and sizes using real objects.
- Self-efficacy: learners make use of opportunities to assist in arranging items according to size, colour, shape and storage at home.

Values: ● Unity: learners collaborate with others as they pair and match objects according to size, colour and shape. ● Responsibility: learners engage in assigned roles as they assist in arranging items according to size, colour, shape and storage at home.
Pertinent and Contemporary Issues (PCIs): Learners observe safety as they collect different objects from the immediate environment to enhance safety issues.
Link to other learning areas: Learners utilise creative skills acquired from Creative Activities to create patterns of different sizes and shapes using real objects.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**1.2 Whole Numbers** (25 lessons)	By the end of the sub strand, the learner should be able to: a) count numbers forward up to 50, b) count numbers backwards from 30, c) represent numbers 1 to 30 using concrete objects, d) read and write numbers 1 to 50 in symbols, e) read and write numbers 1 to 10 in words, f) identify missing numbers	The learner is guided to: ● in pairs/groups, collect concrete objects from the immediate environment to use in counting activities, ● in pairs/groups, count by 1's and 2's up to 20 starting from any point using concrete objects such as number cards, as well as body parts, ● take turns in counting numbers forward up to 50, ● in pairs/groups, count numbers backwards from 30, ● in pairs/groups, play games that involve	In what ways can we count from 1 to 20?

		in number patterns up to 20, g) appreciate number patterns by creating and extending patterns during play activities.	representing numbers 1 to 30 using concrete objects, ● in pairs/groups, read and write numbers 1 to 50 in symbols, ● practice writing numbers 1 to 10 in words, ● fill in missing numbers in number patterns up to 20, ● in pairs/groups, create patterns with numbers up to 20 and share with other groups, ● play games involving whole numbers using digital devices or other resources.	

Core Competencies to be developed:

- Digital literacy: learners use digital devices to play games involving numbers 1 to 50.
- Creativity and imagination: learners generate new ideas to create patterns with numbers up to 20.

Values:

- Respect: learners understand and appreciate peers as they take turns in counting numbers forward up to 50.
- Unity: learners take turns in activities as they take turns in counting numbers forward up to 50.

Pertinent and Contemporary Issues (PCIs):

- Learners count by 1's and 2's up to 20 starting from any point using concrete objects such as number cards, in groups to enhance social cohesion.
- Learners observe safety when collecting concrete objects from the immediate environment to enhance environmental safety.

Link to other learning areas:

- Learners apply environmental safety rules learned from Environmental Activities to safely collect concrete objects from the immediate environment to use in counting activities.
- Learners apply creative skills acquired from Creative Activities to create patterns with numbers up to 20.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**1.3 Addition** (25 lessons)	By the end of the sub strand, the learner should be able to: a) model addition as putting objects together, b) use ' +' and ' =' signs in writing addition statements, c) add 2 single digit numbers in different situations, d) add 3 single digit numbers in different contexts, e) add a 2 digit number to a 1 digit number without regrouping with sum not exceeding 50, f) work out missing numbers in patterns involving addition of whole numbers up to 50, g) play games involving addition using digital devices or other resources.	The learner is guided to: ● in pairs/groups, safely put two groups of objects together and count to get the total, ● use ' + ' and ' = ' signs in writing addition statements, ● add 2 single digit numbers by counting on, ● add 3 single digit numbers using concrete objects, ● add 3 single digit numbers by counting on, ● add a 2 digit number to a 1 digit number without regrouping horizontally and vertically with sum not exceeding 50, ● in pairs/groups, make number patterns involving addition with numbers up to 50, ● play games involving addition using digital devices and other resources.	How can you add a 2 digit number to a 1 digit number?
Core competencies to be developed: ● Creativity and imagination: learners generate different ideas to make number patterns involving addition.				

● Communication and collaboration: learners use appropriate language and behave appropriately as they play games involving addition with peers.
Values: Responsibility**:** learners engage in assigned roles and duties as they in pairs/groups, make number patterns involving addition with numbers up to 50.
Pertinent and Contemporary Issues (PCIs): ● Learners safely put two groups of objects together and count to get the total to enhance safety in the learning environment. ● Learners creatively make number patterns involving addition with numbers up to 50 to enhance creative thinking.
Link to other learning areas: Learners apply speaking and listening skills from Language Activities to effectively communicate to peers as they play games involving addition.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**1.4 Subtraction** (20 lessons)	By the end of the sub strand, the learner should be able to: a) model subtraction as 'taking away' using concrete objects, b) use the ' - ' and '='signs in writing subtraction sentences, c) subtract single digit numbers, d) subtract a 1 digit number from a 2 digit number without regrouping, e) work out missing numbers in patterns involving subtraction of whole numbers up to 50, f) play games involving subtraction using digital devices and other resources.	The learner is guided to: ● in pairs/groups, model subtraction using concrete objects, ● use ' - ' and '=' signs in writing subtraction sentences, ● in pairs/groups, subtract by counting backwards, ● in pairs/groups, subtract using concrete objects, ● create subtraction sentences related to basic addition facts, ● use number cards or charts safely to workout subtraction of a 1 digit number from a 2 digit number, ● in pairs /groups, create patterns involving subtraction.	How do you subtract a one digit number from a two digit number?

Core Competencies to be developed:

- Learning to learn: learners learn different ways of doing subtraction as they subtract numbers by counting backwards and use number cards or charts to work out subtraction.
- Creativity and imagination: learners imagine and create patterns involving subtraction.

Values:

- Responsibility**:** learners take care of concrete objects used in subtraction.

● Social justice: learners share resources equitably in groups as they use number cards or charts to work out subtraction.
Pertinent and Contemporary Issues (PCIs): ● Learners work harmoniously in groups to create patterns involving subtraction to enhance social cohesion. ● Learners work out subtraction by counting backwards to enhance critical thinking.
Link to other learning areas: ● Learners utilise creative skills acquired in Creative Activities to create patterns involving subtraction. ● Learners apply speaking and listening skills from Language Activities to communicate to peers as they model subtraction using concrete objects.

Assessment Rubrics

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to sort, group and match objects according to similar attributes.	Sorts, groups and matches objects according to similar attributes correctly and consistently.	Correctly sorts, groups and matches objects according to similar attributes.	Sorts, groups or matches objects according to similar attributes.	Sorts or groups and matches objects according to similar attributes with difficulties.
Ability to create patterns by ordering objects and numbers according to different criteria.	Creates patterns by ordering objects and numbers according to different criteria correctly and creatively.	Creates patterns by ordering objects and numbers according to different criteria correctly.	Creates patterns by ordering objects or numbers according to different criteria correctly.	Creates patterns by ordering objects or numbers according to different criteria with difficulties.
Ability to count numbers forward up to 50 and backwards from 30.	Counts numbers forward up to 50 and backwards from 30, correctly and consistently.	Counts numbers forward up to 50 and backwards from 30 correctly.	Counts numbers forward up to 40 or backwards from 20 correctly.	Counts numbers forward up to 30 and backwards from 10 correctly.

Ability to read and write numbers 1 to 50 in symbols and numbers 1 to 10 in words.	Reads and writes numbers 1 to 50 in symbols and 1 to 10 in words correctly and consistently.	Reads and writes numbers 1 to 50 in symbols and 1 to 10 in words correctly.	Reads or writes numbers 1 to 40 in symbols or 1 to 10 in words correctly.	Reads or writes numbers 1 to 30 in symbols or 1 to 5 in words correctly.
Ability to identify missing numbers in number patterns up to 20.	Identifies missing numbers in number patterns up to 20 correctly and consistently.	Identifies missing numbers in number patterns up to 20 correctly.	Identifies missing numbers in number patterns up to 15 correctly.	Identifies missing numbers in number patterns up to 10 correctly.
Ability to add a 2 digit number to a 1 digit number without regrouping with sum not exceeding 50.	Adds a 2 digit number to a 1 digit number without regrouping with sum not exceeding 50 accurately and systematically.	Adds a 2 digit number to a 1 digit number without regrouping with sum not exceeding 50 accurately.	Adds a 2 digit number to a 1 digit number without regrouping with sum not exceeding 30 accurately.	Adds a 2 digit number to a 1 digit number without regrouping with sum not exceeding 20 accurately.
Ability to subtract a 1 digit number from a 2 digit number without regrouping.	Subtracts a 1 digit number from a 2 digit number without regrouping accurately and systematically.	Subtracts a 1 digit number from a 2 digit number without regrouping accurately.	Subtracts a 1 digit number from a 2 digit number without regrouping in many instances.	Subtracts a 1 digit number from a 2 digit number without regrouping in a few instances.
Ability to work out missing numbers in patterns involving addition and subtraction of whole numbers up to 50.	Works out missing numbers in patterns involving addition and subtraction of whole numbers up to 50 correctly and systematically.	Works out missing numbers in patterns involving addition and subtraction of whole numbers up to 50 correctly.	Works out missing numbers in patterns involving addition or subtraction of whole numbers up to 40 correctly.	Works out missing numbers in patterns involving addition or subtraction of whole numbers up to 30 correctly.

STRAND 2.0 MEASUREMENT

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**2.1 Length** (10 lessons)	By the end of the sub strand, the learner should be able to: a) collect objects of different lengths from the immediate environment, b) compare length of objects using longer than, shorter than and same as, c) measure length using arbitrary units, d) appreciate measuring length using arbitrary units.	The learner is guided to: ● in pairs/ groups, collect objects of different lengths from the immediate environment, ● in pairs/ groups, compare objects directly to identify objects which are longer than, shorter than or same as other objects, ● in pairs/ groups, measure lengths using arbitrary units such as hand spans or walking steps and discuss the measurements from the various groups, ● in pairs/ groups, use arbitrary units to measure lengths of different objects in their immediate environment.	1. How do you compare the length of two objects? 2. What can be used to measure the length of the teacher's table?
Core competencies to be developed: • Self-efficacy: learners portray self-confidence as they use arbitrary units to measure lengths of different objects in their immediate environment. • Communication and collaboration: learners speak clearly, listen keenly and support peers as they measure and discuss lengths using arbitrary units.				
Values: ● Responsibility: learners take care of objects collected from the environment for use in measuring length. ● Peace: learners display tolerance as they measure lengths using arbitrary units such as hand spans or walking steps in groups.				

Pertinent and Contemporary Issues (PCIs): ● Learners display tolerance as they measure lengths using arbitrary units such as hand spans or walking steps in groups to enhance positive discipline. ● Learners work harmoniously in groups as they measure lengths using arbitrary units to enhance social cohesion.
Link to other learning areas: Learners utilise speaking and listening skills acquired from Language Activities to effectively communicate to peers as they discuss lengths using arbitrary units.

Strand	Sub strand	Specific Learning Outcomes	Suggested learning experiences	Suggested Key Inquiry Question(s)
2.0 Measurements	**2.2 Mass** (10 lessons)	By the end of the sub strand, the learner should be able to: a) collect objects with different mass from the immediate environment, b) compare mass of two objects using heavier than, lighter than or same as, c) measure mass using arbitrary units, d) appreciate measuring mass using arbitrary units in the environment.	The learner is guided to: ● collect safe objects of different mass from their immediate environment, ● in groups, discuss and use safe objects to identify those heavier than, lighter than or same as, ● in groups, use an identified empty container of known mass to measure the mass of other objects such as mass of beans, maize or flour as accurately as possible, ● play games involving mass using digital devices.	1. How can you compare the mass of two or more objects? 2. How can you show that an object is heavier than, lighter than or same as your mathematics textbook?

Core Competencies to be developed: • Communication and collaboration**:** learners listen and contribute in discussing how to identify objects that are heavier, lighter or have the same mass. • Digital literacy: learners use digital devices to play games involving mass.
Values: • Unity: learners appreciate the effort of others as they work in groups to measure the mass of different items. • Respect: learner is open minded as they discuss and use safe objects to identify those heavier than, lighter than or same as.
Pertinent and Contemporary Issues (PCIs): • Learners observe safety as they collect objects of different mass from their immediate environment to enhance safety in the environment. • Learners listen and contribute in discussing how to identify objects that are heavier, lighter or have the same mass to enhance effective communication.
Links to other learning areas: • Learners apply environmental safety skills from Environmental Activities to safely collect objects from their immediate environment. • Learners apply listening and speaking skills from Language Activities to discuss how to identify objects that are heavier, lighter or have the same mass.

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

2.0 Measurement	**2.3 Capacity** (12 lessons)	By the end of the sub strand, the learner should be able to: a) collect containers of different capacities from the immediate environment, b) compare capacity of two containers using more than, less than and same as, c) measure capacity using arbitrary units, d) re-use empty containers of different capacities to keep items.	The learner is guided to: ● in pairs/groups, collect safe containers of different sizes from the environment, ● in pairs/groups, empty and fill water in different containers to establish which holds more, which holds less and which holds the same, ● in pairs/groups, fill basins with water using different small containers. The learners to count the number of small containers they use to fill the basin, ● in pairs/groups, discuss and re-use containers of different capacity at home and school to keep items.	How can we find out which of two containers hold more, less or same as?

Core Competencies to be developed:

- Learning to learn: learners discover ways of determining capacity of containers as they fill basins with water using different small containers.
- Critical thinking and problem solving: learners explore solutions as they reuse containers of different capacities at home and at school.

Values:

Responsibility: learners take care of containers they use to measure capacity and re-use containers to keep items at home and school.

Pertinent and Contemporary Issues (PCIs):

- Learners reuse containers of different capacity at home and school to keep items to enhance environmental safety.

● Learners discuss reusing of containers of different capacity at home and school to enhance sustainable consumption.
Link to other learning areas: Learners relate environmental safety in Environmental Activities to reuse of containers of different capacity at home and school.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**2.4 Time** (8 lessons)	By the end of the sub strand, the learner should be able to: a) identify days of the week, b) relate days of the week to various activities, c) identify months of the year, d) appreciate activities that are done on different days of the week.	The learner is guided to: ● sing songs/ rhymes related to days of the week, ● tell and write days of the week the way they follow each other, ● in pairs/groups, identify activities that take place during the days of the week such as raising flag on Monday and Friday, ● in groups, sing songs/rhymes related to the months of the year, ● discuss and tell their birth month.	1. Which day of the week do you raise the school flag? 2. Which day of the week do you worship?
Core competencies to be developed: ● Self-efficacy: learners persist and show interest in singing songs/ rhymes related to days of the week. ● Communication and collaboration: learners speak clearly, listens and understand peers as they discuss and tell their birth month				
Values: ● Peace: learners harmoniously sing songs/ rhymes related to days of the week together. ● Patriotism: learners are aware of their own culture as they identify activities that take place during the days of the week.				

Pertinent and Contemporary Issues (PCIs): ● Learners identify activities that take place during the days of the week such as raising flags on Monday and Friday to enhance citizenship. ● Learners harmoniously sing songs/ rhymes related to days of the week together to enhance social cohesion.
Link to other learning areas: Learners relate singing songs/rhymes related to days of the week and months of the year to performance in Creative Activities.

Strand	**Sub strand**	**Specific Learning Outcomes**	**Suggested Learning Experiences**	**Suggested Key Inquiry Question(s)**
2.0 Measurement	**2.5 Money** (8 lessons)	By the end of the sub strand, the learner should be able to: a) identify Kenyan currency coins, b) identify Kenyan currency note up to sh.50, c) count Kenyan currency coins one at a time, d) use money in buying up to 2 items without balance, e) appreciate the use of money in buying items from shops.	The learner is guided to: ● in pairs/groups, recognise and sort out different Kenyan currency coins sh.1, sh.5, sh.10, sh.20 and sh.40 according to their value, ● in pairs/groups, recognise a sh.50 note and tell its value, ● in pairs/groups, tell how many coins of sh.1, sh.5, sh.10, sh.20, sh. 40 by counting, ● discuss the price of items in the model classroom shop up to sh.50, ● in groups to role play buying up to 2 items from the model classroom shop without balance.	How can you identify Kenyan currency coins and notes?

Core competencies to be developed: ● Citizenship: learners recognize and sort out different Kenyan currency coins and notes according to their value. ● Self-efficacy: learners look for opportunities to learn as they role play buying up to 2 items from the model classroom shop.
Values: ● Integrity: learners display honesty as they role play buying up to 2 items from the model classroom shop and pay the correct money. ● Patriotism: learners aware of own culture as they recognise different Kenyan currency coins and notes.
Pertinent and Contemporary Issues (PCIs): Learners recognize and sort out different Kenyan currency coins sh.1, sh.5, sh.10, sh.20 and sh.40 according to their value to enhance financial literacy.
Link to other learning areas: ● Learners relate the value of honesty as they role play buying up to 2 items from the model classroom shop and pay the correct money to the virtues taught in Religious Activities. ● Learners apply speaking and listening skills acquired in Language Activities to discuss the price of items in the model classroom.

Assessment Rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to compare lengths of objects using longer than, shorter than and same as.	Compares lengths of objects using longer than, shorter than and same as accurately and comprehensively.	Compares lengths of objects using longer than, shorter than and same as accurately.	Compares lengths of objects using any two of; longer than, shorter than or same as accurately.	Compares lengths of objects using any one of; longer than, shorter than or same as accurately.

Ability to compare mass of two objects using heavier than, lighter than and same as.	Compares mass of two objects using heavier than, lighter than and same as accurately and consistently.	Compares mass of two objects using heavier than, lighter than and same as accurately.	Compares mass of two objects using any two of; heavier than, lighter than or same as accurately.	Compares mass of two objects using any one of; heavier than, lighter than or same as accurately.
Ability to compare capacity of two containers using more than, less than and same as.	Compares capacity of two containers using more than, less than and same as accurately and consistently.	Compares capacity of two containers using more than, less than and same as accurately.	Compares capacity of two containers using any of two; more than, less than and same as accurately.	Compares capacity of two containers using any one of; more than, less than and same as.
Ability to identify and relate days of the week to various activities.	Identifies and relates days of the week to various activities accurately and comprehensively.	Identifies and relates days of the week to various activities accurately.	Identifies or relates days of the week to various activities accurately.	Identifies some days of the week accurately.
Ability to identify months of the year.	Identifies months of the year correctly and in sequence.	Identifies months of the year accurately.	Identifies at most 7 months of the year accurately.	Identifies at most 5 months of the year accurately.
Ability to identify Kenyan currency coins sh.1, sh. 5, sh.10, sh. 20 and sh. 40 and sh. 50 note.	Identifies Kenyan currency coins sh.1, sh.5, sh.10, sh.20 and sh.40 and sh.50 note accurately and consistently.	Identifies Kenyan currency coins sh.1, sh.5, sh.10, sh.20 and sh.40 and sh.50 note accurately.	Identifies at least 4 of Kenyan currency coins sh.1, sh.5, sh.10, sh.20 or sh.40 or sh.50 note accurately.	Identifies at least 2 of Kenyan currency coins sh.1, sh.5, sh.10, sh.20 or sh.40.
Ability to count currency coins of sh.1, sh.5, sh.10, sh.20, sh.40 one at a time.	Counts currency coins of sh.1, sh.5, sh.10, sh.20, sh.40 one at a time accurately and fluently.	Counts currency coins of sh.1, sh.5, sh.10, sh.20, sh.40 one at a time correctly.	Counts at least 4 currency coins of sh.1, sh.5, sh.10, sh.20, sh.40 one at a time correctly.	Counts at least 2 currency coins of sh.1, sh.5, sh.10, sh.20, sh.40 one at a time.

STRAND 3.0 GEOMETRY

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Geometry	**3.1 Lines** (6 lessons)	By the end of the sub strand, the learner should be able to: a) identify straight lines in different situations, b) draw straight lines on different surfaces, c) identify curved lines in different situations, d) draw curved lines on different surfaces, e) recognise straight and curved lines from real objects in the environment.	The learner is guided to: ● stand behind one another facing the same side and identify what they have formed as a straight line, ● in pairs/groups, mark two points on the ground and use a stick to join the two points to make a straight line, ● practise drawing straight lines on the ground and in their books, ● in groups, form a semicircle, draw a line around it and identify the line drawn as a curved line, ● practise drawing curved lines on the ground and in their books, ● in groups, observe and identify lines from different objects in the environment.	How do you make a line?
Core-Competencies to be developed: Learning to learn: learners discover ways of identifying straight lines as they mark two points on the ground and using a stick to join the two points to make a straight line.				
Values: ● Unity: learners appreciate the effort of peers as they in groups, observe and identify lines from different objects in the environment. ● Peace: learners follow instructions as they stand behind one another facing the same side to form a straight line.				

Pertinent and Contemporary Issues (PCIs): Learners work harmoniously in groups as they **mark** two points on the ground and use a stick to join the two points to make a straight line to enhance social cohesion.
Link to other learning areas: Learners apply drawing skills from Creative Activities to draw straight and curved lines.

Strand	Sub strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Geometry	**3.2 Shapes** (6 lessons)	By the end of the sub strand, the learner should be able to: a) identify rectangles, triangles and circles in objects from the environment, b) make patterns involving rectangles, triangles, and circles, c) appreciate the beauty of patterns in different fabrics.	The learners are guided to: ● in pairs/groups, use safe objects from the environment to recognize different shapes such as rectangles, triangles and circles, ● work individually to make patterns of their choice using the three shapes, ● in groups make patterns, colour them and share with other groups.	What shapes can you identify in your class?
Core-Competencies to be developed: ● Creativity and imagination: learners generate pattern making ideas as they independently make patterns of their choice using rectangles, triangles and circles. ● Critical thinking and problem solving: learners complete tasks by following instructions as they use safe objects from the environment to recognize different shapes such as rectangles, triangles and circles.				

Values: ● Peace: learners display tolerance as they work in groups to make and colour patterns. ● Integrity: learners are committed to duty as they work individually to make patterns of their choice using the three shapes.
Pertinent and Contemporary Issues (PCIs): ● Learners observe safety as they use objects from the environment to recognize different shapes such as rectangles, triangles and circles to enhance safety. ● Learners work harmoniously in groups to make and colour patterns to enhance social cohesion.
Link to other learning areas: ● Learners apply drawing and colouring skills from Creative Activities to draw and colour patterns ● Learners apply environmental safety rules from Environmental Activities to safely use objects from the environment to recognize different shapes such as rectangles, triangles and circles.

Assessment Rubrics

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to identify rectangles, triangles and circles in objects.	Accurately and consistently identifies rectangles, triangles and circles in objects.	Accurately identifies rectangles, triangles and circles in objects.	Accurately identifies rectangles or triangles or circles in objects.	Partly identifies rectangles or triangles or circles in objects.
Ability to make patterns involving rectangles, triangles, and circles.	Accurately and consistently makes patterns involving rectangles, triangles, and circles.	Accurately makes patterns involving rectangles, triangles, and circles.	Accurately makes patterns involving rectangles or triangles or circles.	Partly makes patterns involving rectangles or triangles or circles.

APPENDICES

Appendix 1: Suggested Learning Resources

STRANDS	SUB-STRANDS	RESOURCES
NUMBERS	NUMBER CONCEPT	Counters such as sticks, stones and grains
	WHOLE NUMBERS	Sticks, marbles, stones, grains, a number line drawn on the ground/floor
	ADDITION	Place value chart, abacus basic addition facts, number line drawn on the ground/floor, table, sticks, marbles, stones, grains and many more
	SUBTRACTION	Sticks, marbles, stones, grains, basic addition facts table, number line drawn on the ground/floor
MEASUREMENTS	LENGTH	Books, pencils, sticks, bottles, rulers and others
	MASS	Items of different mass such as books, stones, pieces of wood, items of same mass
	CAPACITY	Containers of different sizes, water, sand, soil and others

	TIME	Charts with days of the week and months of the year in order
	MONEY	Kenya currency coins (sh. 1, sh. 5, sh.10, sh.20, sh.40), notes (sh.50) and classroom shop
	CAPACITY	Containers of different sizes, water, sand, soil and others
GEOMETRY	LINES	Sticks, strings and objects in the classroom
	SHAPES	Cut- outs of rectangles, circles, and triangles of different sizes

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 2: Suggested Assessment Methods and Tools

1. Written tests and quizzes
2. Rating scales
3. Projects
4. Observation Schedules
5. Portfolio
6. Assessment Rubric

Appendix 3: CSL Guidelines for Early Years Education (PP1&2 and Grade 1-3)

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 Environmental Activities learning area. The class teacher is expected to identify and guide learners to undertake age-appropriate whole-class integrated CSL activity within the school. 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 ● Determine the activity for the learners ● 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 of 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. The 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 developed and values nurtured. 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, rating scale or any other appropriate assessment tool.