



REPUBLIC OF KENYA

LOWER PRIMARY LEVEL DESIGNS

MATHEMATICAL ACTIVITIES

FOR

LEARNERS WITH PHYSICAL IMPAIRMENT



KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

First Published in 2017

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ISBN: 978-9966-31-726-1

Published and printed by Kenya Institute of Curriculum Development

FOREWORD

The Basic Education Curriculum Framework (BECF) outlines the vision and mission for the curriculum reforms. The Vision of the curriculum reforms is to develop “An engaged, an empowered and ethical citizen “while the mission is to “To nurture the potential of every learner”.

The framework adopts a Competency Based Curriculum and has identified seven core competences, namely; communication and collaboration, critical thinking and problem solving, creativity and imagination, citizenship, digital literacy, learning to learn, and self-efficacy. It provides a variety of opportunities for identification and nurturing of learner’s potentials and talents in preparation for life and the world of work. It is geared towards making learning enjoyable.

The curriculum designs are developed to enable implementation of the Basic Education Curriculum Framework. The design contain the National Goals of Education and outline the Early Years Education (EYE), subject general and specific learning outcomes. It also suggests a variety of learning experiences, assessment and links the topics to values, Pertinent and Contemporary Issues (PCI) and to other activity areas.

It is my hope that all educators in Early Years Education level will anchor their delivery to these Curriculum Designs.

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INTRODUCTION

The Lower Primary designs are meant for learners in Grade 1 to 3. They have taken cognizance of the various aspects of development of learners of that age cohort. The designs are comprehensive enough to guide the teachers to effectively deliver the curriculum.

The teacher must understand the learning outcomes and be able to use the suggested learning experiences to achieve the outcomes. The teacher can also design own learning experiences as long as they achieve the designed learning outcomes. A variety of learning experiences will ensure that learners are engaged in the learning experience. Practical experiences will allow learners to retain more in the learning process. The designs allow the teachers to use a variety of assessment methods but in the end they must evaluate the achievement of the learning outcomes.

The curriculum designs are very critical and teachers must make reference to them consistently.

The Curriculum Designs for Lower Primary are in four volumes:

Volume One

- Kiswahili Activities
- Literacy
- English Activities

Volume Two

- Mathematics Activities
- Environmental Activities
- Hygiene and Nutrition Activities

Volume Three

- Christian Religious Education
- Hindu Religious Education
- Islamic Religious Education

Volume Four

- Movement and Creative Activities

LEARNING AREAS TIME ALLOCATION

	Learning Area	Lessons Per Week
1	Literacy Activities	5
2	Kiswahili Language Activities/Kenya Sign Language	3
3	English Language Activities	3
4	Mathematical Activities	5
5	Environmental Activities	5
6	Hygiene and Nutrition Activities	2
7	Religious Activities	3
8	Movement and Creative Activities	8(*** 5 for PE)
9	Pastoral Programme of Instruction	1
	Total Lesson Per Week	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.

GENERAL LEARNING OUTCOMES FOR EARLY YEARS EDUCATION

By the end of early years' education, the learner should be able to:

1. Demonstrate basic literacy and numeracy skills for learning.
2. Communicate appropriately using verbal and/or non-verbal modes in a variety of contexts.
3. Demonstrate appropriate etiquette in social relationships.
4. Apply creativity and critical thinking skills in problem solving.
5. Explore the immediate environment for learning and enjoyment.
6. Practice hygiene, nutrition, sanitation, safety skills to promote health and wellbeing.
7. Demonstrate the acquisition of emotional, physical, spiritual, aesthetic and moral development for balanced living.
8. Demonstrate appreciation of the country's rich and diverse cultural heritage for harmonious co-existence.
9. Apply digital literacy skills for learning and enjoyment.

Preamble

This syllabus has been adapted to suit the needs of a learner with physical impairments. Learners with physical impairments are heterogeneous in terms of the type and degree of disability which calls for consideration of their inter and /or intra individual differences. The adaptation targets learners with:

- Neurological impairments such as; cerebral palsy, spinal injuries, spina bifida, epilepsy.
- Muscular-skeletal impairments such as; Muscular Dystrophy, Amputation, poliomyelitis, Oteogenesis imperfect condition.
- Other health impairments such as; asthma, sickle-cell anemia and multiple disabilities..

Unlike learners without disabilities, learners with physical impairment experience motor difficulties that affect their posture, balance, Speech, ability to move, sit, write and manipulate learning materials. Therefore, adaptations have been made to enable the learner access curriculum for meaningful learning.

These learners require special services, training, equipment, materials, tools and facilities to achieve their educational and life. In addition, they will require assistance in the learning process especially in the practical oriented activities. The suggested physical assistance, relevant adaptations and more time will be required in actual learning experiences and in examinations where applicable and should be individualized. Physical assistance may include performing an activity with the learner's instructions, manipulation of various learning equipment, tools materials, and facilitating mobility, grasping, and stabilizing the learners' body or parts of the body. Relevant adaptations means making of resources usable to the learner, for example, adapting drawing and writing equipment, page turners and head pointers for easier use. It also means changing the environment to suit the needs of the learner such as provision of modified tables and chairs, spacious classroom for easy of mobility, particularly for those on wheelchairs, provision of ramps for easier access to rooms and fitting of wide doors to allow for entry wheel chair users and those with mobility difficulties

This curriculum is intended for use in special and inclusive schools. The suggested activities in this adapted curriculum are intended to guide the teacher. The adaptation focuses on: Specific learning outcomes, suggested learning experiences, suggested community service, suggested resources, time, suggested learning resources and Assessment rubric.

The instructions should be adapted to facilitate effective performance and mastery of the intended skill. Learners with physical impairment being a diverse group, the teacher will be expected to ensure that specialized assessment is done on each learner in every class before deciding on the desired skill and competence levels to be achieved.

Learners with conditions such brittle bones, muscular dystrophy, heart conditions, spinal cord injuries among others could be exempted from certain activities such as gymnastics.

The teacher is however expected to come up with appropriate and relevant activities for such learners when teaching the whole class.

MATHEMATICS ACTIVITIES

ESSENCE STATEMENT

Numeracy is a foundational skill that prepares the learner for number work, Mathematics in higher levels of schooling and mathematical approaches in all aspects of life. Numeracy activities involve identification and value placement of mathematical numerals, basic mathematical operations as well as measuring and describing shapes.

GENERAL LEARNING OUTCOMES

By the end of Early Years 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) Describe properties of geometrical shapes and spatial relationships in real life experiences.

GRADE 1

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
1.0 Numbers	1.1 Number Concept (20 lessons)	By the end of the sub-strand, the learner should be able to: a) sort and group objects according to different attributes within the classroom; b) pair and match objects in the environment; c) order and sequence objects in ascending and descending order; d) make patterns using real objects; e) recite number names in order up to 50; f) represent numbers 1-30 using concrete objects; g) demonstrate through counting that a group in all situations has only one count; h) Appreciate the use of sorting and grouping items in day to day activities.	<ul style="list-style-type: none"> • Learners in purposive pairs/groups to collect different types of safe objects. Learners with mobility and manipulation challenges could be encouraged to perform ability level tasks or be assisted by peers, teacher, and teacher aide. • Learners in pairs/groups to sort objects with same attribute and group them together (Adaptations in bullet 1 above apply here). Learners to play digital games involving sorting and grouping according to different attributes (Adaptations in bullet 1 above apply here). Learners in purposive pairs/groups to pair and match the objects to establish “equal to”, “more than” and “less than” (Adaptations in bullet 1 above apply here). • Learners to order objects according to size from smallest to biggest and vice versa (Adaptations in bullet 1 above apply here). • Learners to make patterns using real objects (Adaptations in bullet 1 above apply here). • Learners to recite number names up to 50. Learners with speech difficulties could point, mime, hum, gesture or use communication board. • Learners to represent numbers 1-30 using concrete objects as well as their body parts. 	<ol style="list-style-type: none"> 1) How can we find out which group has more objects than another? 2) How can we group items?

			<p>Learners with manipulative difficulties could be encouraged to use alternative functional body parts or be assisted by peers, teacher aide, and teacher or use assistive devices.</p> <ul style="list-style-type: none"> • Learners to demonstrate that any given group has only one count. • Learner in pairs/groups to collect and sort litter in the environment and put it in various groups according to an attribute of their choice and give reasons for the grouping (Adaptations in bullet 6 above apply here). • Learners in purposive pairs/groups could assist in arranging, edible items like fruits, cabbages according to size and colour in the school store(Adaptations in bullet 6 above apply here). • Learners could visit a market to observe the sorting and grouping of fruits and vegetables. (Adaptations in bullet 1 above apply here). Observe safety precaution for learners with brittle bones 	
<p>Core Competences to be developed: Learning to learn – As learners play digital games, get assistance from peers they are learning. Communication and collaboration–As learners work in groups . Imagination and creativity – As learners arrange edible items according to size and colour. Digital literacy – As they play digital games. Critical thinking and problem solving – As learners sort and arrange edible items in colour and size</p>				
<p>Link to PCI's: Learners support programme Life skills: self-awareness and self-esteem when using body parts in counting. ESD: DRR; safety when collecting items and litter in the environment, environmental awareness- don't litter the environment.</p>			<p>Link to Values:</p> <ul style="list-style-type: none"> • Responsibility - As learners collect objects • Unity – As learners work together in groups • Co-operation – As learners work in groups • Love – As they assist each other 	

	<ul style="list-style-type: none"> • Respect – As learners do group work
Link to other learning areas: <ul style="list-style-type: none"> • Environmental activities – Care for self and others • Language activities – As they communicate 	Suggested Community Service Learning Activities: learners to assist in collecting and sorting litter in their locality and observe how it is disposed.
Suggested non-formal activity to support learning: learners to count trees in the school compound.	Suggested assessment: oral questions, written exercise, observation.
Suggested Resources: Counters, objects like bottles, bottle tops, pictures, wood cubes, matching boxes, multipurpose stamp	

ASSESSMENT RUBRIC

Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Learner correctly: sorts and groups, pairs and matches, orders and sequences <ul style="list-style-type: none"> • Recites numbers 1-50 • Represents numbers 1-30 using concrete objects and beyond. 	Learner correctly: sorts and groups, pairs and matches, orders and sequences, <ul style="list-style-type: none"> • Recites numbers 1-50 • Represents numbers 1-30 using concrete objects. 	Learner inconsistently: sorts and groups, pairs and matches, orders and sequences, <ul style="list-style-type: none"> • Recites numbers 1-50, • Represents numbers 1-30 using concrete objects. 	Learner is assisted: sorting and grouping, pairing and matching, ordering and sequencing <ul style="list-style-type: none"> • Reciting numbers 1-50 • Representing numbers 1-30 using concrete objects.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.2 Whole Numbers (25 lessons)	By the end of the sub-strand, the learner should be able to: a) count numbers forward and backward up to 100, b) represent numbers 1-50 using concrete objects, c) identify place value of ones and tens, d) read and write numbers 1-50 in symbols, e) write numbers 1-10 in words, f) identify missing numbers in number patterns up to 20, g) appreciate number patterns by creating and extending patterns during play activities.	<ul style="list-style-type: none"> • Learners in pairs/groups to count by 1's and 2's up to 20 starting from any point using concrete objects as well as body parts (Apply purposive grouping). Learners with speech difficulties could write or point on number table or use multipurpose communication board • Learners to take turns in counting by: -5's up to 50 starting from zero -10's up to 100 starting from zero (Adaptations in bullet 1 apply here). • Learners in pairs/groups to count by 1's and 2 are using a number line (Apply purposive grouping) • Learners in pairs/groups to play games that involve representing numbers 1-50 using concrete objects (Apply purposive grouping) • Learners to identify place value of ones and tens (Adaptations in bullet 1 apply here). • Learners in pairs to recite/point/mime/type and write numbers 1-50 in symbols (Adaptations in bullet 1 apply here). • Learners to practice writing numbers 1-10 in words. Learners with fine motor challenges and those could use with 	How many ways can we count from 1-20?

			<p>missing limbs assistive devices like mouth held pointer to point numbers or say numbers orally</p> <ul style="list-style-type: none"> • Learners to identify missing numbers in number patterns up to 20 by pointing or typing or saying orally. • Learners in pairs to create patterns with numbers up to 20 and share with other groups (Purposeful pairing) write or type the numbers (Adaptations in bullet 1 apply here). • Learners to play digital games involving whole numbers. Learners with manipulative challenges could be encouraged to perform ability level tasks or be assisted by peers teacher aide, teacher or use assistive devices. • Learners to role play a cashier in day to day life activities such as a cashier counting 5 shilling coins. Learners with motor difficulties could be encouraged to perform ability level task with assistance from peers, teacher aide or teacher. 	
<p>Core Competences to be developed: Learning to learn – as learners count, recite and write numbers. Communication and collaboration – as learners work in groups. Critical thinking and problem solving – as learners count using number lines (counting ones and twos).</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Life skills: self-awareness and self-esteem- when using body parts in counting. 			<p>Link to values:</p> <ul style="list-style-type: none"> • Responsibility – when learners represent number using concrete objects • Unity – when learners work in groups 	

<ul style="list-style-type: none"> • ESD: DRR; safety -when collecting items and litter in the environment, environmental awareness- don't litter the environment. 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Environmental activities – as learners use concrete objects from the environment. • Religious activities – concrete objects are God's creation • Language activities – as learner communicate during group work. 	<p>Suggested Community Service Learning Activities: Learners to assist in putting objects in groups of 2's, 5's and 10's together in community activities.</p>
<p>Suggested non-formal activity to support learning: Learners to count different types of flowers in the school compound.</p>	<p>Suggested assessment: oral questions, written exercises, observation.</p>
<p>Suggested Resources: Head/mouth pointers, multipurpose stamp, number table, counters, number chart, computer, number cut-outs, number blocks</p>	

ASSESSMENT RUBRIC

Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
<p>Learner correctly: counts up to 100, represents numbers 1-50 using concrete objects, identifies place value of ones and tens, reads, writes numbers in symbols and words, works out missing numbers in number patterns and beyond.</p>	<p>Learner correctly: counts up to 100, represents numbers 1-50 using concrete objects, identifies place value of ones and tens, reads, writes numbers in symbols and words, works out missing numbers in number patterns.</p>	<p>Learner inconsistently: counts up to 100, represents numbers 1-50 using concrete objects, identifies place value of ones and tens, reads, writes numbers in symbols and words, works out missing numbers in number patterns.</p>	<p>Learner is assisted in:</p> <ul style="list-style-type: none"> • counting up to 100, representing numbers 1-50 using concrete objects • Identifying place value of ones and tens, reading and writing numbers in symbols and words.

			<ul style="list-style-type: none"> Working out missing numbers in number patterns. 	
Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.3 Addition (25 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ol style="list-style-type: none"> model addition as putting objects together; use '+' and '=' in writing addition sentences; add 2- single digit numbers up to a sum of 10; add 3- single digit numbers up to a sum of 10 in different contexts; add a 2- digit number to a 1-digit number without regrouping, horizontally and vertically with a sum not exceeding 100; add multiples of 10 up to 100 vertically; work out missing numbers in patterns involving addition of whole numbers up to 100; Learners enjoy working with numbers. 	<ul style="list-style-type: none"> Learners in purposive pairing/grouping to put two groups of objects together and count to get the total. Learners to use '+' and '=' signs in writing addition sentences. Learners with manipulative difficulties could use multipurpose stamp or communication board Learners to add 2- single digit-numbers by skipping on a number line. Learners with motor challenges could use alternative functional parts of the body. Learners to add 2- single digit numbers using the family of 10. Learners with manipulative challenges could be assisted to use tens frame. Learners to add 2- single digit number by counting on (Adaptations in bullet 4 apply here). Learners to add 3- single digit numbers using a number line (Adaptations in bullet 3 apply here). Learners to add 3- single digit numbers by counting on. (Adaptations in bullet 3 apply here). 	How can you add a 2 digit number to a 1 digit number?

			<ul style="list-style-type: none"> • Learners to add 3- single digit numbers using the family of 10 (Adaptations in bullet 4 apply here). • Learners to add a 2- digit number to a 1- digit number without regrouping horizontally and vertically with sum not exceeding 100. Learners with motor challenges could be assisted by peers, teacher aide, teacher or use abaci, tens frame and computer with computational software. • Learners to add multiples of 10 up to a 100 vertically. Learners with motor challenges could be assisted by peers or teacher to use abaci, tens frame and computer with computational software • Learners to play digital games involving addition. Learners with manipulative challenges could be assisted by peers, teacher aide and teacher. • Learners to make patterns involving addition with numbers up to 100 (Adaptations in the above bullet 11 apply here) 	
<p>Core competences to be developed :Communication and collaboration – As learners work in groups. Critical thinking and problem solving – As learner add different digits.Digital literacy – As learners play digital games</p>				
<p>Link to PCI's:</p> <p>ESD: DRR; safety- when handling objects.</p>			<p>Link to values:</p> <ul style="list-style-type: none"> • Responsibility – As learners add different digits • Unity–As learners work in groups 	

	<ul style="list-style-type: none"> Integrity – As learners do individual work.
Link to other learning areas: <ul style="list-style-type: none"> Environmental activities – As learner use locally available objects Language activities – As learners communicate in group work 	Suggested Community Service Learning Activities: learners to work out totals of items at home.
Suggested non-formal Activity to support learning: Learners to plant flowers in patterns at school during their free time and count them.	Suggested assessment: oral questions, written exercise, observation.
Suggested Resources: Number lines, tens frame, abacus, computer with computational software, counters, number cubes/cards, communication board	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaching Expectation	Below Expectation
Learner correctly: models addition, uses '+' and '=' signs, adds more than 2- digit numbers to 1- digit numbers using different strategies, add 3- single digit numbers up to a sum of 10, adds multiples of 10 up to 100, works out missing numbers in patterns beyond 100.	Learner correctly: models addition, uses '+' and '=' signs, adds up to 2- digit numbers to 1- digit numbers using different strategies, add 3- single digit numbers up to a sum of 10, adds multiples of 10 up to 100, works out missing numbers in patterns up to 100.	Inconsistently: models addition, uses '+' and '=' signs, adds up to 2- digit numbers to 1- digit numbers using different strategies, add 3- single digit numbers up to a sum of 10, adds multiples of 10 up to 100, works out missing numbers in patterns up to 100.	Learner is assisted in: modeling addition; using '+' and '=' signs, adding up to 2- digit numbers to 1- digit numbers using different strategies, adding 3- single digit numbers up to a sum of 10, adding multiples of 10 up to 100, working out missing numbers in patterns up to 100.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.4 Subtraction (20 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> a) model subtraction as 'taking away' using concrete objects, b) use the '-' and '=' sign in writing subtraction sentences; c) subtract single digit numbers, d) subtract a 1- digit number from a 2- digit number based on basic addition facts; e) use the relationship between addition and subtraction involving basic addition facts to work out problems; f) subtract multiples of 10 up to 90; g) work out missing numbers in patterns involving subtraction of whole numbers up to 100. h) Learners enjoy subtracting objects as they are involved in a take away game. 	<ul style="list-style-type: none"> • Learners in purposive pairing/grouping to model subtraction using concrete objects. Learners to use '-' and '=' signs in writing subtraction sentences. Learners with manipulative difficulties could use multi-purpose stamp or communication board with assistance • Learners in purposive pairing/grouping to subtract by counting backwards. • Learners in pairing/grouping to subtract using the number line. • Learners to solve routine and non- routine problems involving subtraction of a 1- digit number from a 2- digit number based on basic addition facts (Adaptations in bullet 1 apply here). • Learners to create subtraction sentences related to basic addition facts. Learners with speech difficulties could use Multipurpose communication board. 	How do you subtract a single digit number from a 2-digit number?

			<ul style="list-style-type: none"> • Learners to use tablets to workout subtraction of multiples of 10 up to 90. Learners with missing limbs and manipulative challenges could use alternative functional parts of the body or use devices head pointers. • Learners in purposive pairing /grouping to create patterns involving subtraction (Adaptations in bullet 1 apply here). 	
<p>Core Competences to be developed: Communication and collaboration - A learners work in groups. Critical thinking and problem solving –As learners subtract from different digits. Digital literacy– as learners use tablets. Creativity and imagination – As learners create patterns involving subtraction. Citizenship – Social cohesion as learners. Self-efficacy– As learner successfully completes an activity.</p>				
<p>Link to PCI's: ESD: DRR; safety- as learners handle objects.</p>			<p>Link to Values:</p> <ul style="list-style-type: none"> • Responsibility – as learners carry out given activities • Unity – As learners work in groups 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Environmental Activities: as learners use concrete objects from the environment. • Language Activities: as learners take given instructions communicate in group work 			<p>Suggested Community Service Learning Activities: Learners to collect litter from the environment.</p>	

Suggested non- formal activity to support learning: Learners to plant trees in patterns in the school compound during their free time.	Suggested Assessment: Written exercise, observation, oral questions.
Suggested Resource: Multipurpose stamps, communication board, tens frame, counters, number lines	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaching Expectation	Below Expectation
Learner correctly: models subtraction as taking away, uses '-' and '=' signs to write subtraction sentences, subtracts single digit numbers, subtracts 1- digit numbers from 2- digit numbers based on basic addition facts, relates addition and subtraction in working out problems involving basic addition facts, subtracts multiples of 10 from more than 90 and works out missing numbers in patterns up to 100 and beyond.	Learner correctly: models subtraction as taking away, uses '-' and '=' signs to write subtraction sentences, subtracts single digit numbers, subtracts 1- digit numbers from 2-digit numbers based on basic addition facts, relates addition and subtraction in working out problems involving basic addition facts, subtracts multiples of 10 from up to 90 and works out missing numbers in patterns up to 100.	Learner inconsistently: models subtraction as taking away, uses, uses '-' and '=' signs to write subtraction sentences, subtracts single digit numbers, subtracts 1- digit numbers from 2- digit numbers based on basic addition facts, relates addition and subtraction in working out problems involving basic addition facts, subtracts multiples of 10 from up to 90 and works out missing numbers in patterns up to 100.	Learner is assisted in: modeling subtraction as taking away, using '-' and '=' signs to write subtraction sentences; subtracting single digit numbers, subtracting 1- digit numbers from 2- digit numbers based on basic addition facts, relating addition and subtraction in working out problems involving basic addition facts, subtracting multiples of 10 from up to 90 and working out missing numbers in patterns up to 100.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
2.0 Measurement	2.1 Length (10 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> a) compare length of objects directly; b) conserve length through manipulation; c) measure length using arbitrary units; d) appreciate use of arbitrary units in measurement. 	<ul style="list-style-type: none"> • Learners in purposive pairing/grouping to compare objects directly to identify objects which are longer than, shorter than or same as. Learners with manipulation challenges could be assisted by peers, teacher aide, teacher or use assistive devices. • Learners to place objects of equal length in different orientations and describe them using words such as longer than, shorter than and same as. Learners with manipulation challenges could be assisted by peers, teacher aide, teacher or use assistive devices. Learners with speech difficulties could mime, write ,gesture or use communication board. • Learners in purposive pairing /grouping to measure lengths using different objects as arbitrary units and discuss the measurements from the various groups (Adaptations in bullet 2 above apply). 	<ol style="list-style-type: none"> 1) How do you compare the length of two objects? 2) Which objects can be used to measure the length of the teacher's table?

<p>Core competencies to be developed: Communication and collaboration– As learners work in groups. Imagination and creativity – As learners place objects of equal length in different orientations. Critical thinking and problem solving–As learners describe objects of equal length in different orientations. Self-efficacy – As learners carry out a task to completion.</p>	
<p>Link to PCI's: ESD: DRR; safety- as learners handle objects.</p>	<p>Link to values:</p> <ul style="list-style-type: none"> • Responsibility – As learners measure length • Integrity – As learners follow given instructions • Unity–As learners work in groups
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Environmental Activities: As learners measure different objects in the environment. • Language activities: As learners communicate and follow instructions. 	<p>Suggested Community Service Learning Activities: Learners to plant trees /flowers using a stick to determine the distance between seedlings in religious institutions/ dispensaries.</p>
<p>Suggested non-formal Activity to support learning: Learners to plant flowers in school spacing them equally.</p>	<p>Suggested assessment: written exercises, observation, oral questions.</p>
<p>Suggested Resources: Sticks, ropes/strings, objects of different lengths</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly: compares length directly, conserves length and measures length using arbitrary units and beyond.	Learner correctly: compares length directly, conserves length and measures length using arbitrary units.	Learner inconsistently: compares length directly, conserves length and measures length using arbitrary units.	Learner is assisted in: comparing length directly, conserving length and measuring length using arbitrary units.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested learning experiences	Key Inquiry Question(s)
Measurements	2.2Mass (10 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> a) compare mass of objects directly, b) conserve mass through manipulation, c) measure mass using arbitrary units. d) Enjoy measuring mass using arbitrary units 	<ul style="list-style-type: none"> • Learners in pairs/groups use safe objects to identify those ‘heavier than’, ‘lighter than’ or same. Learners with brittle bones and those with muscular dystrophy could observe a demonstration using a beam balance to show masses of different objects. Learners with manipulation difficulties could point items which are heavier/lighter objects • Learners to use two objects of equal mass and a beam balance to demonstrate that change of shape does not change the mass of an object. Care should be observed for learners with brittle bones by giving them lighter, weights. Learners with motor difficulties could be assisted by peers, teacher aide or teacher. • Learners in purposive pairs/groups to use an identified mass to compare the mass of other objects using the 	<ol style="list-style-type: none"> 1) How can you compare the mass of two or more objects? 2) What would you do to show that shape does not change mass? 3) How can you show that an object is heavier than, lighter than or same as your mathematics textbook?

			words heavier than, lighter than or same as (Adaptations in bullet 2 above apply). Learners with speech difficulties could use theme based communication boards point , write or type.	
<p>Core Competencies to be developed: Communication and collaboration in group work .Critical thinking and problem solving–As the learner use two objects of equal mass and a beam balance to demonstrate change of shape does not change the mass of an object. Self-efficacy – As learners compare mass of objects correctly.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • ESD: DRR; safety - in handling materials, animal welfare - feeding animals. • Citizenship: Social cohesion 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Responsibility – As learners compare mass of objects. • Integrity – As learners follow given instructions • Unity–As learners work in groups • Respect – As learner work in group 	
<p>Links to other learning areas:</p> <ul style="list-style-type: none"> • Environmental activities – As learners measure masses of objects from the environment. • Language activities – As learners work in groups and follow instructions. • Movement activities – As learners move around to balance masses. 			<p>Suggested Community Service Learning Activities: Learners to assist neighbours in feeding animals by measuring quantities.</p>	
<p>Suggested non-formal Activity to support learning: learners to compare mass of objects in the classroom.</p>			<p>Suggested assessment: written exercises, oral questions, observation.</p>	
<p>Suggested Resources: Beam balance, safe objects of different weights, theme based flash cares, communication boards</p>				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly: compares mass directly using the words heavier than, lighter than, and same as, conserves mass through manipulation, measures mass using arbitrary units and beyond.	Learner correctly: compares mass using the words heavier than, lighter than and same as, conserves mass through manipulation, measures mass using arbitrary units.	Learner inconsistently: compares mass using the words heavier than, lighter than and same as, conserves mass through manipulation, measures mass using arbitrary units.	Learner is assisted in: comparing mass using the words heavier than, lighter than and same as conserving mass through manipulation and measuring mass using arbitrary units.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.3 Capacity (12 lessons)	By the end of the sub-strand, the learner should be able to: a) compare capacity of containers directly; b) conserve capacity through manipulation; c) measure capacity using arbitrary units. d) Enjoy measuring capacity using arbitrary units	<ul style="list-style-type: none"> Learners to empty and fill water in different containers to establish which holds more, which holds less and which holds the same. Learners with brittle bones, muscular dystrophy could be encouraged to perform according to their ability while observing safety precautions. They could also be assisted by peers, teacher or teacher aide. Learners to identify and compare containers which holds more, less or same as 	How can we find out which of two containers hold more, less or same as?

			<p>(Adaptations in bullet 1 above apply here).</p> <ul style="list-style-type: none"> • Learners to fill containers of different shapes and sizes with water then empty into others so as to establish that some containers can hold the same amount although their shapes are different (Adaptations in bullet 1 above apply here). • Learners to be given water, same size basins and different small containers. The learners to count the number of small containers they use to fill the basin (Adaptations in bullet 1 above apply here). Learners with speech difficulties could write/points/pick number cubes representing number of times a smaller container fills a large container. 	
<p>Core Competencies to be developed: Critical thinking and problem solving– As learners compare capacities of different containers. Communication and collaboration – as learners work in groups. Citizenship – Social cohesion as learners work together. Self-efficacy – As learners complete the activity successfully</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • ESD: DRR; Safety in handling materials, Health education – appropriate size of materials and, environmental conservation as learners re- use 			<p>Link to values:</p> <ul style="list-style-type: none"> • Responsibility: As learners perform tasks given • Integrity: As learners follow instructions given • Unity: As learners work together • Respect: As learners work together 	

<p>containers they used in measuring capacity; animal welfare – watering animals.</p> <ul style="list-style-type: none"> • Citizenship: honesty. • Health education: safety- as learners collect safe and appropriate containers. • Life skills: self-awareness- as learners work in groups. 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Environmental Activities: Learners use water • Language Activities: As learners communicate with each other 	<p>Suggested Community Service Learning Activities: Learners to water trees and flowers around religious institutions, health centres and at home.</p>
<p>Suggested non-formal activity to support learning: Learners to water school / class flowers.</p>	<p>Suggested assessment: written exercises, observation, oral questions</p>
<p>Suggested Resources: Safe containers of different sizes, number cards, water, basins/pails</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
<p>Learner correctly: compares capacity of different containers using the terms holds more, less or same as, conserves capacity using containers of different shapes and sizes, measures capacity using arbitrary units and beyond.</p>	<p>Learner correctly: compares capacity of different containers using the terms holds more, less or same as, conserves capacity using containers of different shapes and sizes, measures capacity using arbitrary units.</p>	<p>Learner inconsistently: compares capacity of different containers using the terms holds more, less or same as, conserves capacity using containers of different shapes and sizes, measures capacity using arbitrary units.</p>	<p>Learner is assisted in: comparing capacity of different containers using the terms holds more, less or same as, conserving capacity using containers of different shapes and sizes, measuring capacity using arbitrary units.</p>

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.4 Time (8 lessons)	By the end of the sub-strand, the learner should be able to: a) relate daily activities to time; b) relate days of the week with various activities; c) Appreciate days of the week by singing songs related to days of the week.	<ul style="list-style-type: none"> • Learners in pairs/groups to identify activities they do in the morning, afternoon and evening both at home and school. Learners with speech difficulties could use multipurpose communication board or bliss symbols to communicate (Apply purposive grouping/pairing of learners). • Learners to sing songs/ rhymes related to days of the week. Learners with speech difficulties could be encouraged to mime, hum, tap or gesture or be assisted by peers or teacher aides. • Learners in purposive pairing/grouping to identify activities that take place during the days of the week. Learners with speech difficulties could use charts, communication boards, pictures showing various activities at the week. 	<ol style="list-style-type: none"> 1) Which day of the week do you raise the school flag? 2) Which day of the week do you worship?
<p>Core competence to be developed: Communication and collaboration: As learners work in groups. Self-efficacy: As learners sing. Citizenship: Social cohesion as they work in groups.</p>				
Link to PCI's:			Link to values:	

<ul style="list-style-type: none"> • Citizenship: patriotism – the Kenyan flag. • Health Education: time to brush teeth, wash face, sleep, take meals time to plant, harvest, among other activities. 	<ul style="list-style-type: none"> • Responsibility: As learners carry out activities given. • Respect: As learners work together • Patriotism: As learners sing and work together
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Environmental Activities: As learners perform given activities in the environment. • Language Activities: As learners communicate in group work. 	<p>Suggested Community Service Learning Activities: Learners to visit/help the needy during school holidays.</p>
<p>Suggested non-formal activity to support learning : Learners write school daily activities and recite during assembly.</p>	<p>Suggested assessment: Oral questions, written exercises, observation.</p>
<p>Suggested Resources: Bliss symbols, communication board, charts, pictures, photographs or video clips, computer</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly: relates daily activities to time, relates days of the week with various activities, recites days of the week and demonstrates more aspects of time.	Learner correctly: relates daily activities to time, relates days of the week with various activities, recites days of the week.	Learner inconsistently: relates daily activities to time, relates days of the week with various activities, recites days of the week.	Learner is assisted in: relating daily activities to time, relating days of the week with various activities, reciting days of the week.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.5 Money (8 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) identify Kenyan currency coins and notes up to sh.100,</p> <p>b) relate money to goods and services up to sh.100 in shopping activities,</p> <p>c) differentiate between needs and wants in real life context,</p> <p>d) appreciate spending and saving in real life situations.</p>	<ul style="list-style-type: none"> • Learners in pairs/groups to sort out different Kenyan currency coins and notes according to their value up to sh.100 (Apply purposive grouping/pairing). Learners with manipulative, difficulties could be assisted by peers, teacher aide or teacher • Learners to put together coins and notes up to sh.100 according to their value and features (Apply purposive grouping/pairing). Adaptations in bullet 1 above apply here. • Learners in pairs/groups to give their own experiences in relation to shopping activities. Learners with speech difficulties could use be assisted by peers to report their views ,teacher aide, teacher or use theme based communication boards • Learners to discuss the value of items in the classroom shop up to sh.100 (Adaptations in bullet 3 above apply here). • Learners in pairs/groups to discuss items they cannot do without and those that are necessary but they can do without (Apply purposive grouping).Adaptations in bullet 3 above apply here. 	How can you identify Kenya currency coins and notes?

			<ul style="list-style-type: none"> • Learners in pairs/groups to identify needs and wants (Apply purposive grouping) • Learners to play digital games involving needs and wants. Learners with motor difficulties could be encouraged to perform ability level tasks or be assisted by peers , teacher aide, teacher or use assistive devices • Learners to give their own experiences on saving and spending of money. • Learners to role play buying and selling from the classroom shop (Adaptations in bullet 3 and 7 above apply here). 	
<p>Core competence to be developed: Communication and collaboration – As learners work in groups. Self-efficacy – as learners identify Kenyan currency. Citizenship – Social cohesion as learners work in groups. Digital literacy – As learners play digital games</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • ESD: DRR; Safety- as learners handle money. • Citizenship: patriotism- features on Kenya currency. 			<p>Link to values:</p> <ul style="list-style-type: none"> • Integrity: As Learners carry out activities on money. • Responsibility: As learners carry out given activities. 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Language activities: As learners follow instructions and talk with each other • Religious activities: As learners observe honesty • Environmental activities: As learners organize the working environment. 			<p>Suggested Community Service Learning Activities: Learners to sort money in places of worship and other functions</p>	

Suggested non-formal Activity to support learning: learners to help sort money into various denominations with school cashier or in a school function.	Suggested assessment: written exercises, oral questions, observation.
Suggested Resources: Kenyan currency:- coins and notes up to 100, classroom shop, items in the classroom shop; charts showing different currency e.g. notes.	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly: identifies Kenyan currency coins and notes up to sh.100, relates money to goods and services and differentiates between needs and wants, and beyond.	Learner correctly: identifies Kenyan currency coins and notes up to sh100, relates money to goods and services and differentiates between needs and wants.	Learner inconsistently: identifies Kenyan currency coins and notes up to sh100, relates money to goods and services and differentiates between needs and wants.	Learner has major inconsistencies in: identifying Kenyan currency coins and notes up to sh100, relating money to goods and services and differentiating between needs and wants.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
3.0Geometry	3.1 Lines (6 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) draw straight lines for application in real life;</p> <p>b) draw curved lines for application in real life situations;</p> <p>c) Learners enjoy drawing different types of lines.</p>	<ul style="list-style-type: none"> • Learners to stand or be positioned behind one another facing the same side and identify what they have formed as a straight line. • Learners in pairs/groups to mark two points on the ground and using a stick to draw a line joining the two points to come up with a straight line (Apply purposive grouping). Learner with fine motor difficulty could use alternative means or be assisted by peers, teacher aide and teacher. Ignore marginal errors. • Learners to practice drawing straight lines on the ground and in their books (Adaptations in bullet 2 above apply here). • Learners in groups to form a semi-circle and one of them to draw a line around it and identify the semi-circle drawn as a curved line Adaptations in bullet 2 above apply here). • Learners to practice drawing curved lines on the ground and in their books (Adaptations in bullet 2 above apply here). • Learners could visit a water selling kiosk to observe how the water containers are arranged. • Learner with mobility difficulty could be assisted by peers, teacher aide or teacher . 	What types of lines are there?

Core-Competence to be developed: Communication and collaboration: As learners work in groups. Learning to learn: As learners draw straight curved lines	
Link to PCI's: <ul style="list-style-type: none"> • ESD: DRR; safety- as learners use sticks to draw. • Life Skills: self- awareness -when forming lines using their hands, inter-personal relationship. 	Link to Values: <ul style="list-style-type: none"> • Unity: As learners work in groups. • Responsibility: as learners perform given activity. • Love: As they work together and assist each other.
Link to other learning areas: Movement and creative arts: As learners draw <ul style="list-style-type: none"> • Environmental activities: As learners draw on the ground 	Suggested Community Service Learning Activities: Learners could visit a community function and assist in arranging seats in straight or curved lines.
Suggested non- formal Activity to support learning: learners to arrange seats in straight lines in class during cleaning.	Suggested assessment: Written exercises, observation, oral questions.
Suggested Resources: Sticks, Charcoal/chalk adapted writing/typing materials.	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly draws straight and curved lines, and other types of lines.	Learner correctly draws straight and curved lines.	Learner in accurately draws straight and curved lines.	Learner is assisted in drawing straight and curved lines.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Geometry	3.2 Shapes (6 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) identify rectangles, circles and triangles in the environment;</p> <p>b) make patterns involving rectangles, circles and triangles;</p> <p>c) appreciate the beauty of patterns in the environment.</p>	<ul style="list-style-type: none"> • Learners in pairs/groups to sort and group different shapes using one attribute (Apply purposive grouping/pairing).Learners with manipulative difficulties could be encouraged to use alternative functional parts of the body or be assisted by peers or teacher aide • Learners in pairs /groups discuss the types of lines that make rectangles, circles, triangles and name them. (Apply purposive grouping). Learners with speech difficulties could write/pint or use communication board • Learners work individually to make patterns of their choice using the three shapes. Learners with fine motor difficulties could use assistive technology such as copy paste shapes to make patterns or be assisted by peers or teacher aide • Learners in groups make patterns, colour them and share with other groups (Adaptations in bullet 3 above apply here). Learners with 	<p>What shapes can you identify in your school?</p>

			speech difficulties could write or use communication board.	
Core-Competence to be developed: Communication and collaboration: As learners work in groups. Imagination and creativity: as learners make patterns				
Link to PCI's : ESD: DRR; safety-as learners pick objects to trace and when colouring the patterns.		Link to Values: <ul style="list-style-type: none"> • Responsibility: As learners carry out given activities. • Unity: As learners work together. 		
Link to other learning areas: <ul style="list-style-type: none"> • Movement and creative activities: As learners make patterns • Environmental activities: As learners interact with materials in the environment 		Suggested Community Service Learning activities: Learners to visit the elderly and beautify their walls with patterns drawn on manila paper.		
Suggested non- formal activity to support learning : learners could visit pre -school and decorate the walls using patterns drawn on manila paper.		Suggested assessment: written exercises, oral questions, observation.		
Suggested Resources: Adapted computer (Ms word), objects of different shapes, cut-out shapes, chart on shapes, multipurpose stamp, crayons, coloured pencils, paint and paint brushes, communication board				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly identifies shapes and makes patterns using rectangles, circles, triangles and other shapes.	Learner correctly identifies shapes and makes patterns using rectangles, circles and triangles.	Learner inaccurately identifies shapes and makes patterns using rectangles, circles and triangles.	Learner has major inaccuracies in identifying shapes and making patterns using rectangles, circles and triangles.

SUGGESTED RESOURCES

SUB- STRANDS	RESOURCES
NUMBER CONCEPT	Sticks, stones, 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
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	One shilling coins (copper, silver, small and big coins) sh10,20,40 coins, sh50 and classroom shop
LINES	Sticks, strings
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.

GRADE 2

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
1.0Numbers	1.1Number Concept (8 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) read numbers 1-100 in symbols;</p> <p>b) represent numbers 1-100 using concrete objects in the environment;</p> <p>c) Enjoy as they play games representing numbers 1 – 100.</p>	<ul style="list-style-type: none"> • Learners to read number names from 1-100.Learner with speech difficulty could point/write or type the numbers as read by the teacher or use theme based communication board or stamp. • Learners in purposive groups of five count their fingers and toe or any other safe and age appropriate objects with assistance from peers. • Learners in pairs/groups to play games of representing numbers 1-100 using safe concrete objects. Learners with manipulative difficulties could be encouraged to perform to their ability level tasks or be assisted by peers or teacher aide • Learners to play digital games of representing groups with numbers. Learners with missing limbs or those with fine motor difficulties could use head or month held pointers or multipurpose stamp. 	How can we find the number of objects in a group?
<p>Core Competences to be developed: Communication and collaboration: As learners work in groups. Imagination and creativity: Be creative as they play in groups/pairs. Digital literacy: As they play digital games</p>				

Critical thinking and problem solving: Learners with motor difficulties may use their invented alternative.	
Link to PCI's: <ul style="list-style-type: none"> • Life skills: self-awareness and self-esteem -when using body parts. • ESD: DRR; safety- when collecting items in the environment. 	Link to Values: <ul style="list-style-type: none"> • Respect: As they work in groups • Responsibility: As one works individually.
Link to other learning areas: <ul style="list-style-type: none"> • Language activities: Terms used in number concept. • Environmental activities: Collect wastes and count i.e., papers, water bottles. 	Suggested Community Service Learning Activities: Learners to visit older citizens and listen to stories on how they used to count their animals and household items.
Suggested non- formal Activity to support learning: learners to count number of different objects in the classroom.	Suggested assessment: oral questions, observation, written exercise.
Suggested Resources: Counters, theme based communication board/charts/flash cards, head/mouth held pointers, multipurpose stamp	

ASSESSMENT RUBRIC

Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Learner reads numbers more than 100 in symbols accurately. Represents numbers more than 100 using concrete objects accurately. Play games representing numbers 1-100 accurately.	Learner reads numbers 1-100 in symbols, represents numbers 1-100 using concrete objects, play games representing numbers 1-100.	Learner inconsistently reads numbers 1-100 in symbols, represents numbers 1-100 using concrete objects, play games representing numbers 1-100.	Learner requires assistance to read numbers 1-100 in symbols, represent numbers 1-100 using concrete objects, play games representing numbers 1-100 .

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.2 Whole Numbers (20 lessons)	By the end of the sub-strand, the learner should be able to: a) count numbers forward and backward up to 100; b) identify place value up to hundreds; c) read numbers 1-100 in symbols; d) read and write numbers 1-20 in words; e) work out missing numbers in number patterns up to 100; f) appreciate number patterns as they skip on the number line.	<ul style="list-style-type: none"> • Learners in pairs/groups to count in 2's and 5's forward and backward starting from any point. Learners with speech difficulties could mime, gesture, or point using communication devices. • Learners in pairs/groups to count their fingers and toes in 2's and 10's forward and backward starting at any point (Purposive pairing/grouping be applied) . Adaptations in bullet 1 above apply here. • Learners in pairs / groups to discuss place value up to hundreds (Adaptations in bullet 1 above apply here). • Learners in pairs to read number 1-100 in symbols (Purposive pairing/grouping be applied) .Adaptations in bullet 1 above apply here. • Learners to read and write numbers 1-20 in words (Adaptations in bullet 1 above apply here). Learners with fine motor difficulties and those with 	How do we get the next number in a pattern?

			<p>missing limbs could use assistive devices such as head/ mouth pointers/stamp.</p> <ul style="list-style-type: none"> • Learners to play digital games involving whole numbers (Adaptations in bullet 5 above apply here). Learners with epilepsy could use ICT devices with low light intensity. • Learners to work out missing numbers in patterns up to 100. (Adaptations in bullet 5 above apply here). • Learners in pairs/groups to make number patterns and share with other groups (Adaptations in bullet 5 above apply here). 	
<p>Core Competences to be developed: communication and collaboration, critical thinking, problem solving, digital literacy.</p>				
<p>Link to PCI's: Citizenship: Leadership - as learners work in groups.</p>		<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: as they work in groups • Responsibility: Work individually 		
<p>Link to other learning areas :</p> <ul style="list-style-type: none"> • Language activities: Read and write numbers. • Environmental activities: Care for self and others • Movement and creative activities: As learners work out missing numbers in patterns 		<p>Suggested Community Service Learning Activities: Learners to assist in arranging chairs and tables in rows and columns during community functions.</p>		
<p>Suggested non- formal Activity to support learning: learners to plant flowers in patterns in the school.</p>		<p>Suggested assessment: oral questions, written exercise, observation.</p>		
<p>Suggested Resources: Head/mouth held pointers, multipurpose stamp, multipurpose communication board, large number cards, number charts, computer (adapted)</p>				

ASSESSMENT RUBRIC

Exceeds expectation		Meets expectation	Approaches expectation	Below expectation
Learner correctly counts to more than 100, identifies place value up to more than hundreds, reads numbers more than 100 in symbols, reads and writes numbers more than 20 in words, works out missing numbers in patterns. Enjoy making patterns correctly.		Learner correctly counts from 1-100, identifies place value up to hundreds, reads numbers 1-100 in symbols, reads and writes numbers 1-20 in words, works out missing numbers in patterns. Enjoy making patterns	Learner in consistently: counts from 1-100, identifies place value up to hundreds, reads numbers 1-100 in symbols, reads and writes numbers 1-20 in words, works out missing numbers in patterns. Enjoy making patterns at own ability.	Learner requires assistance to count from 1-100, identifying place value up to hundreds, reading numbers 1-100 in symbols; reading and writing numbers 1-20 in words, work out missing numbers in patterns. Enjoy making patterns with prompts.
Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.3 Fractions (12 lessons)	By the end of the sub-strand, the learner should be able to: a) identify a $\frac{1}{2}$ as part of a whole; b) identify a $\frac{1}{4}$ as part of a whole; c) enjoy sharing a part of a fruit.	<ul style="list-style-type: none"> Learners in purposive pairs to make circular paper cut- outs. Learners with manipulative difficulties could be encouraged to perform ability level tasks or be assisted by peers or teacher aide Learners in purposive pairs to fold the circular paper cut – outs into two equal parts and identify one of the parts as a half of the whole written as $\frac{1}{2}$ (Adaptations in bullet 1 above apply here). 	What fraction do you get when you fold a circular paper cut- out into 4 equal parts?

			<ul style="list-style-type: none"> • Learners in purposive pairs to make rectangular paper cut – outs and fold them into two equal parts to get a half of a whole written as $\frac{1}{2}$ (Adaptations in bullet 1 above apply here). • Learners in purposive pairs to fold circular paper cut – outs to get 4 equal parts and identify one of the parts as a $\frac{1}{4}$ of a whole (Adaptations in bullet 1 above apply here). • Learners to play digital games involving fractions (Adaptations in bullet 1 above apply here). • Learners in purposive pairs to practice making halves and quarters of a whole (Adaptations in bullet 1 above apply here). 	
<p>Core Competences to be developed: Imagination and creativity: As they share part of a fruit. Communication and collaboration: As they work in groups. Critical thinking and problem solving: As they share part of a fruit equally. Digital literacy: As they play digital games .Self-efficiency: As they manipulate objects.</p>				
<p>Link to PCI's: Life skills and Value education: Interpersonal relationship - making friends. Citizenship: As they share and cooperate with others.</p>			<p>Link to Values:</p> <ul style="list-style-type: none"> • Unity: Working together • Integrity: Respecting others in group activities. • Responsibility: Care for others and materials used. 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Language activities: Terms used in fractions and as they communicate in group work. 			<p>Suggested Community Service Learning Activities: Learners to share whole edible items in $\frac{1}{2}$'s and $\frac{1}{4}$'s during community functions.</p>	

<ul style="list-style-type: none"> Environmental Activities: Care for self and others. 	
Suggested non- formal Activity to support learning: learners to share whole edible items in halves and quarters in school.	Suggested assessment: oral questions, written exercise, observation.
Suggested Resources: Cutting materials like scissors, manila paper, shape cut-outs, chart on shapes, theme based communication board and ICT gadgets.	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly identifies $\frac{1}{2}$ and $\frac{1}{4}$ and more fractions as part of a whole. Enjoy sharing equally any part of a whole.	Learner identifies $\frac{1}{2}$ and $\frac{1}{4}$ as part of a whole. Enjoy sharing equally.	Learner inconsistently identifies $\frac{1}{2}$ and $\frac{1}{4}$ as part of a whole. Enjoys sharing with prompts.	Learner identifies $\frac{1}{2}$ and $\frac{1}{4}$ as part of a whole with assistance. Enjoy sharing with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested learning experiences	Key Inquiry Question(s)
Numbers	1.4 Addition (20 lessons)	By the end of the sub-strand, the learner should be able to: a) add a 2- digit number to a 1- digit number without and with regrouping with sum not exceeding 100; b) add 3-single digit numbers up to a sum of 20; c) add a 2-digit number to a 2- digit number without and with regrouping, with sums not exceeding 100;	<ul style="list-style-type: none"> Learners in pairs to write addition sentences given in horizontal form vertically according to place value. Learners with fine motor difficulties could say orally or use multipurpose stamp/communication board Learners to add a 2- digit number to a 1- digit number without and with regrouping. 	1) How can we align a 2-digit number and a 1-digit number vertically in order to add? 2) When do we regroup?

		<p>d) work out missing numbers in patterns involving addition of whole numbers up to 100;</p> <p>e) enjoy breaking numbers a part to make patterns.</p>	<p>Learners with fine motor challenges may use adapted computer with appropriate computation software</p> <ul style="list-style-type: none"> • Learners to practice addition by skipping on the number line. Learners with mobility and manipulative difficulties could use alternative functional parts of the body with assistance from peers or teacher aide. • Learners in pairs/groups to collect different safe objects and use them in addition of 3-single digit numbers. Learners with fine and gross motor difficulties could be assisted by peers or teacher aide • Learners in purposive pairs/groups to practice breaking numbers apart to make a 10 (Apply purposive grouping). • Learners in purposive pairs to come up with different ways of adding two 2-digit numbers without and with regrouping. Learners with speech difficulties could write or use communication board. • Learners to play digital games involving addition. Learners 	
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			<p>with fine motor difficulties and those with missing limbs could use mouth/ head pointers /universal cuff to operate digital device. Learner with epilepsy could use low light intensity device.</p> <ul style="list-style-type: none"> Learners in purposive groups to make patterns using numbers up to 100. Learners with motor challenges could use number stamps or adapted computer 	
<p>Core Competences to be developed: Communication and collaboration: Working in groups. Critical thinking and problem solving: Coming up with different way of adding 2 digit numbers. Digital literacy: Playing games involving addition.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> ESD: DRR; safety – As learners collect objects. Citizenship: social cohesion - when working in groups. 			<p>Link to Values:</p> <ul style="list-style-type: none"> Respect: As they work together Responsibility: Taking care of the material and devices Unity: Working in harmony 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> Language activities: Terms used in addition Environmental activities: Care for self and others. 			<p>Suggested Community Service Learning Activities: learners to visit older citizen homes and assist them in getting the total number of different items in their homes.</p>	
<p>Suggested non- formal Activity to support learning: learners to plant flowers in patterns in school.</p>			<p>Suggested assessment: oral questions, written exercises, observation.</p>	
<p>Suggested Resources: Head pointers, mouth held pointers, universal cuff, multipurpose stamp, counters, communication board, adapted computer with appropriate software (Ms point and Ms word)</p>				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly: adds more than two 2-digit numbers with sums not exceeding 100 using different strategies, works out missing numbers in patterns up to 100. Enjoy breaking numbers apart to make patterns.	Learner adds up to two 2-digit numbers with sums not exceeding 100 using different strategies, works out missing numbers in patterns up to 100. Enjoy breaking numbers apart.	Learner inconsistently: adds up to two 2-digit numbers with sums not exceeding 100 using different strategies, works out missing numbers in patterns up to 100. Enjoy breaking numbers apart with prompts.	Learner adds up to two 2-digit numbers with sums not exceeding 100 using different strategies, working out missing numbers in patterns up to 100 with assistance. Enjoy breaking apart with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.5 Subtraction (20 lessons)	By the end of the sub-strand, the learner should be able to: a) subtract up to 2- digit numbers without regrouping; b) use the relationship between addition and subtraction in working out problems; c) work out missing numbers in subtraction	<ul style="list-style-type: none"> Learners in purposive pairs /groups to subtract single digit numbers by comparing groups of objects. Learners with missing limbs and those with fine motor difficulties could use assistive devices or be assisted by peers or teacher aide. Learners to subtract up to 2-digit numbers without regrouping in horizontal and 	How do you work out missing numbers in patterns involving subtraction?

		<p>of up to 2- digit numbers;</p> <p>d) work out missing numbers in patterns involving subtraction up to 100;</p> <p>e) Enjoy playing games with digital gadgets on subtraction.</p>	<p>vertical forms (Adaptations in bullet 1 above apply here).</p> <ul style="list-style-type: none"> • Learners to discuss the relationship between addition and subtraction using number families .Learners with speech difficulties could write/point or be assisted by peers to report their views, teacher aide or use communication board • Learners to work out missing numbers in subtraction of up to 2- digit numbers (Adaptations in bullet 1 above apply here). • Learners to play digital games involving subtraction. (Adaptations in bullet 1 above apply).Learners with epilepsy should use ICT gadgets with less light intensity. <p>Learners to work out missing numbers in number patterns involving subtraction (Adaptations in bullet 1 above apply).</p>	
<p>Core Competences to be developed: Communication and collaboration: As working in groups. Critical thinking and problem solving: As they work out missing numbers. Self –efficacy: As they play digital games. Digital literacy: As they play digital games.</p>				
<p>Link to PCI's:</p>			<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As they work in groups. • Unity: Working in groups. 	

<ul style="list-style-type: none"> • Life skills: interpersonal relationship, effective communication, friendship formation - as learners work in groups. • Citizenship: social cohesion – as learners work in groups. 	<ul style="list-style-type: none"> • Responsibility: Taking care of digital gadgets.
Link to other learning areas: <ul style="list-style-type: none"> • Language activities: Terms used in subtraction • Environmental activities: Care for self and others 	Suggested Community Service Learning Activities: Learners to participate in cleaning environment activities organized by community members.
Suggested non- formal Activity to support learning: learners to collect litter during school cleaning activities.	Suggested assessment: oral questions, written exercise, observation.
Suggested Resources: Multi-purpose stamp, communication board, mouth/head pointer, adapted computer with appropriate software	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaching Expectation	Below Expectation
Learner correctly subtracts up to more than 2- digit numbers without regrouping, works out missing numbers in number patterns up to 100. Enjoy playing games with digital gadgets correctly.	Learner subtracts up to 2- digit numbers without regrouping, works out missing numbers in number patterns up to 100. Enjoy playing games with digital gadgets.	Learner inconsistently: subtracts up to 2- digit numbers without regrouping, works out missing numbers in number patterns up to 100. Enjoy playing games with digital gadgets with prompts.	Learner subtracting up to 2- digit numbers without regrouping, work out missing numbers in number patterns up to 100 with assistance. Enjoy playing games with digital gadgets with assistance.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.6 Multiplication (12 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) represent multiplication as repeated addition using numbers 1, 2, 3, 4 and 5 up to five times;</p> <p>b) write repeated addition sentences as multiplication, using '×' sign;</p> <p>c) multiply single digit numbers by 1, 2, 3, 4, 5 and 10;</p> <p>d) Enjoy playing digital games on multiplication.</p>	<ul style="list-style-type: none"> • Learners in purposive pairs/groups to use counters to represent multiplication as repeated addition. Learner with missing limbs or fine motor difficulties could be encouraged to use alternative functional parts of the body, be assisted by peers, teacher aide, teacher or use assistive devices. • Learners in pairs/groups to use number lines to represent multiplication as repeated addition (Adaptations in bullet 1 apply here). • Learners to use '×' sign in writing repeated addition sentences as multiplication (Adaptations in bullet 1 apply here). • Learners to multiply single digit numbers by 1, 2, 3, 4, 5 and 10. • Learners to play digital games involving multiplication. Learners with motor difficulties and those with missing limbs could use assistive devices like mouth/head pointers to play. 	How do you represent multiplication as repeated addition?
<p>Core Competences to be developed: Communication and collaboration: As they work in groups. Critical thinking and problem solving: As they multiply numbers. Digital literacy: As they play digital games.</p>				
Link to PCI's:			Link to Values:	

<ul style="list-style-type: none"> • Life skills and value education: self- awareness- when learners use their fingers. • ESD:DRR: re- use of materials collected 	<ul style="list-style-type: none"> • Respect: Respect others opinion in group work • Unity: Cooperation and collaboration. • Responsibility: Taking care of resources.
Link to other learning areas: <ul style="list-style-type: none"> • Language activities: Terms used in multiplication • Environmental activities: Care for self and others. 	Suggested Community Service Learning Activities: Learners to visit older citizens and assist them in arranging items in groups of equal numbers.
Suggested non- formal Activity to support learning: Learners to count number of desks in their classroom through repeated addition.	Suggested assessment: oral questions, written exercises, observation.
Suggested Resources: Resource persons, head printers/mouth pointers, universal cuffs, multipurpose stamp, adapted computer with appropriate software, counters number cards, multipurpose communication board	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly represents multiplication as repeated addition, uses multiplication sign, multiplies single digit numbers by 1, 2, 3, 4, 5 and 10 and goes beyond. Enjoy playing digital games on multiplication correctly.	Learner represents multiplication as repeated addition, uses multiplication sign, multiplies single digit numbers by 1, 2, 3, 4, 5 and 10. Enjoy playing digital games on multiplication.	Learner inconsistently: represents multiplication as repeated addition, uses multiplication sign, multiplies single digit numbers by 1, 2, 3, 4, 5 and 10. Enjoy playing digital games on multiplication with prompts	Learner makes major inaccuracies in performing multiplication as repeated addition, using multiplication sign, multiplying single digit numbers by 1, 2, 3, 4, 5 and 10 with support. Enjoy playing digital games on multiplication with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.7 Division (8 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> a) represent division as equal sharing; b) represent division as equal grouping; c) use ' ÷ 'sign in writing division sentences; d) divide numbers up to 25 by 2, 3, 4 and 5 without a remainder in real life situations; e) enjoy playing digital games on division. 	<ul style="list-style-type: none"> • Learners in purposive pairs/groups to share a given number of objects equally by each picking an object at a time until all are finished and then count how many each got. Learner fine motor difficulties could be assisted by peers, teacher aide, teacher or use assistive devices. • Learners in purposive pairs/groups to pick an equal number of objects at a time from the main group and count the number of small equal groups formed. • Learners to use ' ÷ 'sign in writing division sentences. Learners with motor difficulties and those with missing limbs could use multipurpose stamp or communication board or stamp • Learners to play digital games involving division. Learners with fine motor difficulties and those with missing limbs could use head/mouth pointers to play. Learners with epilepsy should use ICT gadgets with low intensity light. • Learners to divide numbers up to 25 by 2,3,4,5 without a remainder (Adaptations in bullet 3 above apply here). 	How can you share a given number of objects equally?

<p>Core Competences to be developed: Communication and collaboration: As learners work in groups/pairs. Critical thinking and problem solving: As learners solve subtraction problems. Digital literacy: As learners play with ICT gadgets.</p>	
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Citizenship: social cohesion- as learners work in groups. • ESD: DRR; safety - of materials that learners use. 	<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As learners work in groups. • Responsibility: As learner care for resources. • Love: As learners work in pairs/groups.
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Languages activities: Terms used in subtraction and talk with each other in group work • Environmental activities: Use objects found within the environment 	<p>Suggested Community Service Learning Activities: learners to visit children's homes and share fruits as a way of giving back to the community</p>
<p>Suggested non- formal activity to support learning: learners to plant seedlings in rows in school.</p>	<p>Suggested assessment: oral questions, written exercises, observation.</p>
<p>Suggested Resources: Counters, head/mouth pointers, multipurpose stamp, multi-purpose communication board, adapted digital gadgets.</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly represents division as equal sharing and equal grouping, uses division sign, divides numbers up to 25 by 2, 3, 4, and 5 without a remainder and goes beyond. Enjoy playing digital games on division correctly.	Learner represents division as equal sharing and equal grouping, uses division sign, divides numbers up to 25 by 2, 3, 4 and 5 without a remainder. Enjoy playing digital games on division.	Learner inconsistently represents division as equal sharing and equal grouping, uses division sign, divides numbers up to 25 by 2, 3, 4 and 5 without a remainder. Enjoy playing digital games on division with prompts.	Learner has major inaccuracies in representing division as equal sharing and equal grouping, using division sign, dividing numbers up to 25 by 2, 3, 4, and 5 without a remainder . Enjoy playing digital games on division with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
2.0 Measurement	2.1 Length (6 lessons)	By the end of the sub-strand, the learner should be able to: a) measure length using fixed units, b) identify the metre as a unit of measuring length, c) measure length in metres.	<ul style="list-style-type: none"> Learners in purposive pairs/groups to use sticks of equal length to measure different lengths record and discuss the results. Learners with manipulative and mobility difficulties could be encouraged to perform tasks to their ability level or be assisted by peers or teacher aide. Learners with speech difficulties could point or write/use communication board. 	What can you use to measure different lengths?

		<p>d) enjoy playing digital games on measurement.</p>	<ul style="list-style-type: none"> • Learners in purposive pairs/groups to measure length using sticks of different lengths, including 1- metre sticks and identify the 1- metre sticks (Adaptations in bullet 1 above apply here). • Learners to make 1-metre sticks and use them in measuring various lengths within the classroom, record and discuss the results. (Adaptations in bullet 1 above apply here). • Learners to play digital games involving length in metres. Learners with fine motor difficulties and those with missing limbs could be assisted by peers, teacher aide, teacher or use assistive devices like head/mouth pointers to play. Learners with epilepsy should use ICT gadgets with low light intensity. 	
<p>Core Competences to be developed: communication and collaboration, critical thinking and problem solving, imagination and creativity, digital literacy, learning to learn.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Citizenship: social cohesion- as workers work in groups. • ESD:DRR; safety- of materials learners use . 		<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: Respect others opinion as they work in groups and pairs. • Responsibility: Care for self and others, resources and materials. 		
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Languages activities: Talk with each other in group work 		<p>Suggested Community Service Learning Activities: Learners to assist their neighbours to measure length during building of chicken / rabbit cages among others.</p>		

<ul style="list-style-type: none"> Environmental activities: Use sticks from environment 	
Suggested non- formal activity to support learning: learners to measure length of their school fields in metres during games.	Suggested assessment: oral questions, written exercises, observation.
Suggested Resources: Head/mouth pointers, sticks of different lengths but not exceeding one metre, multipurpose communication board, ICT gadgets (adapted).	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly measures length using fixed units, identifies the metre as a unit of measuring length and measures length in metres with ease. Enjoy playing digital games in measurement correctly.	Learner measures length using fixed units, identifies the metre as a unit of measuring length and measures length in metres. Enjoy playing digital games in measurement.	Learner in consistently measures length using fixed units identifies the metre as a unit of measuring length and measures length in metres. Enjoy playing digital games in measurement with prompts.	Learner measures length using fixed units; identifies the metre as a unit of measuring length and measures length in metres with assistance. Enjoy playing digital games in measurement cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.2 Mass (6 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> a) measure mass using fixed units; b) identify the kilogram as a unit of measuring mass; c) measure mass in kilograms; d) enjoy playing digital games involving mass in kilograms. 	<ul style="list-style-type: none"> • Learners in purposive pairs/groups to use items of same mass and a beam balance to measure different masses record and discuss the results Learners with fine motor difficulties and those with missing limbs could be assisted by peers, teacher aide, teacher or use assistive devices such as prostheses and universal cuff. While learners with speech difficulties could write or use communication board. Learners with brittle bone should handle objects with less weight while observing care. • Learners in purposive pairs/groups to use an item equivalent to a 1-kilogram mass and a beam balance to make other 1-kilogram masses and use them to compare other masses. Learners with fine motor difficulties and those with missing limbs could be assisted by teacher aide, teacher or use assistive devices 	What can we use to measure mass?

			<p>such as prostheses, universal cuff.</p> <ul style="list-style-type: none"> • Learner to practice measuring mass in kilograms using a 1-kilogram mass (Adaptations in bullet 2 above apply here). • Learners to play digital games involving mass in kilograms. Learners with fine motor difficulties and those with missing limbs could use mouth/head pointers to play digital games. 	
<p>Core Competences to be developed: Communication and collaboration: As they work in groups. Critical thinking and problem solving: As they do the measurements. Digital literacy: As they use ICT gadgets.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Citizenship: social cohesion- as learners work in groups. w • ESD: DRR; safety -of materials learners use. 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As they work in groups • Responsibility: As they care for the resources. 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Language activities: Terms used in measurement. • Environmental activities: Care for self and others. 			<p>Suggested Community Service Learning Activities: Learners to assist their neighbours to measure mass of items in their homes in kilograms.</p>	
<p>Suggested non- formal activity to support learning: Learners to measure mass of items in their classroom in kilograms during their free time.</p>			<p>Suggested assessment: oral questions, written exercise, observation.</p>	
<p>Suggested Resources: Head/mouth pointers, beam balance, objects of different masses not exceeding 1kg, communication boards, adapted computer, prostheses</p>				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly measures mass using fixed units, identifies and uses the kilogram as a unit measuring mass with ease. Enjoy playing digital games involving mass in kilograms correctly.	Learner measures mass using fixed units identifies and uses the kilogram as a unit of measuring mass. Enjoy playing digital games involving mass in kilograms.	Learner inconsistently measures mass using fixed units identifies and uses the kilogram as a unit of measuring mass. Enjoy playing digital games involving mass in kilograms with prompts.	Learner has major inconsistencies in measuring mass using fixed units, identifying and using the kilogram as a unit measuring mass with assistance. Enjoy playing digital games involving mass in kilograms with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.3 Capacity (8 lessons)	By the end of the sub-strand, the learner should be able to: a) measure capacity using fixed units; b) identify the litre as a unit of measuring capacity; c) measure capacity in litres; d) enjoy digital games involving capacity.	<ul style="list-style-type: none"> Learners in purposive pairs /groups to use small containers of equal capacity to fill bigger containers of same capacity but different shapes with water and count the number of small containers used to fill them. Learners with fine motor difficulties could be encouraged to perform ability level tasks or be assisted by peers, teacher aide, teacher or use assistive devices. 	What can you use to measure capacity of different containers?

			<p>Learners with speech difficulties could write or use communication board.</p> <ul style="list-style-type: none"> • Learners in purposive pairs/groups to use 1 litre containers to fill big containers with water and count the number of litres used to fill the big containers (Adaptations in bullet 1 above apply here). • Learners in purposive groups to measure the capacity of different containers in litres. Learners with fine motor difficulties could be encouraged to perform ability level tasks or be assisted by peers, teacher aide, teacher or use assistive devices. • Learners to play digital games involving capacity. Learners with manipulative difficulties and those with missing limbs could use head/mouth pointers to play digital games. Learners with epilepsy should use ICT digital gadgets with low light intensity. 	
<p>Core Competences to be developed: Communication and collaboration: As they work in groups. critical thinking and problem solving: As they fill containers. Citizenship: Social cohesion as they work in groups. Digital literacy: As they play games.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Life Skills: interpersonal relationships; group work • Citizenship: social cohesion- as learners work in groups. • ESD: DRR; safety- of materials learners use. 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As they work in groups • Responsibility: As they take care of resources 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Language activities: Terms used in capacity. 			<p>Suggested Community Service Learning Activities:</p>	

<ul style="list-style-type: none"> Environmental activities: Care for self and others. 	Learners to assist their neighbours to measure capacity of containers used in storing liquids.
<p>Suggested non- formal activity to support learning: Learners to measure capacity of containers in their classroom in litres during their free time.</p>	<p>Suggested assessment: oral questions, written exercise, observation.</p>
<p>Suggested Learning Resources: Safe bottles and containers of different capacity but not exceeding 1 litre, water, communication board, head/mouth pointers and adapted computer,</p>	

ASSESSMENT RUBRICS

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly measures capacity using fixed units, uses the litre as a unit of measuring capacity and measures capacity in litres with ease. Enjoy digital games involving capacity accurately.	Learner measures capacity using fixed units identifies the litre as a unit of measuring capacity and measures capacity in litres. Enjoy digital games involving capacity.	Learner inconsistently measures capacity using fixed units, identifies the litre as a unit of measuring capacity and measures capacity in litres. Enjoy digital games involving capacity with prompts.	Learner measures capacity using fixed units, identifying the litre as a unit of measuring capacity and measuring capacity in litres with assistance. Enjoy digital games involving capacity with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2. 4 Time (10 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> a) relate the months of the year with various activities; b) recite the number of days in each month of the year; c) measure time using arbitrary units; d) measure time using fixed units, e) identify the clock face,; f) read, tell and write time by the hour; g) enjoy writing time with digital and analogue clock. 	<ul style="list-style-type: none"> • Learners in purposive pairs/groups to discuss activities that take place in the months of the year. Learners with speech difficulties could write or typeset or use communication board or be assisted by peers, teacher aid or teacher . • Learners in purposive pairs/groups to sing songs, rhymes related to number of days in the months of the year. Learner with speech difficulty could mime, hum , tap clap or gesture as others sing. • Learners in purposive pairs/groups to measure time taken to perform an activity using arbitrary units. Learners with motor difficulties could be encouraged to perform ability level tasks. • Learners to discuss places where they have seen clocks displayed as well as how they look like. Learners with speech difficulties could be assisted by peers to report their responses, write, typeset or use communication board. • Learners to observe a clock face and discuss the minute hand and the hour hand (Adaptations in bullet 4 above apply here). • Learners to discuss how to read tell and write time by the hour using both the analogue and digital clock (Adaptations in bullet 4 above apply here). 	<ol style="list-style-type: none"> 1) In which month do you celebrate your birth day? 2) Which month has the least number of days?

Core Competences to be developed: Communication and collaboration: As they work in groups. Critical thinking and problem solving: As they discuss the minute and hour hand. Self- efficacy: As they measure time using fixed units. Digital literacy: As they compare digital clock with analogue.	
Link to PCI's: <ul style="list-style-type: none"> • Health Education: personal hygiene; brushing teeth, washing face. • Citizenship: social cohesion- as learners work in groups. • ESD:DRR; safety- of materials learners use. 	Link to Values: <ul style="list-style-type: none"> • Respect: As they work in groups • Responsibility: As they compare and contrast the clock faces.
Link to other learning areas: <ul style="list-style-type: none"> • Language activities: Terms used in time. • Environmental activities: As they discuss activities in the months of the year. 	Suggested Community Service Learning Activities: Learners to assist their neighbours in keeping their compounds clean during school holidays.
Suggested non- formal activity to support learning: learners to clean their classroom during free time.	Suggested assessment: oral questions, written exercise, observation.
Suggested Resources: Wall clocks, wrist watches, digital clock, communication board, computers	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaching Expectation	Below Expectation
Learner correctly relates months of the year to various activities, identifies number of days in each month, measures time using arbitrary and fixed units, identifies the minute and the hour hand in a clock face and reads, tells and writes time by the hour with ease. Enjoy	Learner relates months of the year to various activities, identifies number of days in each month, measures time using arbitrary and fixed units, identifies the minute and the hour hand in a clock face and reads, tells and writes time by the hour. Enjoy writing time	Learner inconsistently relates months of the year to various activities, identifies number of days in each month, measures time using arbitrary and fixed units, identifies the minute and the hour hand in a clock face and reads, tells and writes time by the hour. Enjoy writing time	Learner requires assistance to relate months of the year to various activities, identifying number of days in each month; measuring time using arbitrary and fixed units, identifying the minute and the hour hand in a clock face and reading, telling and writing time by

writing time with digital and analogue clocks correctly.	with digital and analogue clocks.	with digital and analogue clocks with prompts.	the hour. Enjoy writing time with digital and analogue clocks with cues.
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Strand	Sub-Strand	Specific Learning Outcomes	Suggested learning experiences	Key Inquiry Question(s)
Measurement	2.5Money (10 lessons)	By the end of the sub-strand, the learner should be able to: a) identify Kenyan currency coins and notes up to sh.100; b) count money in sh.1, sh.5, sh.10, sh.20, sh.40, sh.50 up to sh.100; c) represent same amount of money in different denominations; d) relate money to goods and services up to sh.100; e) differentiate between needs and wants in real life context; f) appreciate spending and saving of money in real life situations.	<ul style="list-style-type: none"> Learners in purposive pairs/groups to sort out Kenyan currency coins and notes according to their features up to sh.100. Learners with manipulative difficulties could be encouraged to perform task to their ability level or be assisted by peers, teacher aide, teacher or use assistive devices. Learners in purposive groups to put different coins and notes together and separate them according to their values and features ((Adaptations in bullet 1 above apply here). Learners in purposive pairs/groups to count money in sh.1, sh.5, sh.10, sh.20, sh.40, sh.50 up to sh.100 ((Adaptations in bullet 1 above apply here). Learners with speech difficulties could use communication board or write or type or use universal stamp. Learners in purposive pairs/groups to model same amount of money using 	How can you identify different Kenyan currencies?

			<p>different denominations ((Adaptations in bullet 1 above apply here).</p> <ul style="list-style-type: none"> • Learners in purposive pairs/groups to discuss items they cannot do without and those that are necessary but they can do without up to a value of sh.100.Learners with speech difficulties could type/write or use communication board or flash cards to give opinion. • Learners in purposive pairs/groups to classify needs and wants. Learners with speech difficulties could type/write or use communication board or flash cards to give opinion. • Learners to discuss the importance of saving. Learners with speech difficulties could type/write or use communication board or flash cards to give opinion. • Learners to play digital games involving money. Learners with fine motor difficulties or those with missing limbs could use head/mouth pointers to play digital games. • Learners could record a video during a role play of classroom shopping activities for replay and discussion later. Learners with fine motor difficulties or those with missing limbs could be encouraged to perform 	
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			according to their ability or be assisted by peers, teacher aide or teacher.	
Core Competences to be developed: Communication and collaboration: As they carry out group activity. Citizenship: Social cohesion in group work. Digital literacy: As they play digital games and record videos.				
Link to PCI's:		Link to Values:		
<ul style="list-style-type: none"> • Life Skills: interpersonal relationship, effective communication – during shopping activities. • Citizenship: patriotism – money is a symbol of national unity. • ESD: DRR; safety of materials in classroom shop, financial literacy. 		<ul style="list-style-type: none"> • Respect: As they work in group. • Responsibility: Care for the gadgets and money 		
Link to other learning areas:		Suggested Community Service Learning Activities:		
<ul style="list-style-type: none"> • Language activities: Terms used in money • Environmental activities: Money as a medium of exchange. 		Learners to assist in counting money offered in religious and non-religious functions.		
Suggested non- formal activity to support learning:		Suggested assessment: oral questions, written exercise, observation.		
learners to assist the school clerk in sorting coins and notes according to their value.				
Suggested Resources: Realia (Kenyan currency notes and coins up to 100), pieces of manila paper, scissors, adapted writing materials, adapted computer with appropriate software, theme based communication boards, flash cards, mouth/head pointers				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner identifies Kenyan currency notes and coins beyond sh.100, counts money in different denominations, works out equivalence of different	Learner identifies Kenyan currency notes and coins up to sh.100, counts money in different denominations, works out equivalence of different denominations and relates	Learner inconsistently: identifies Kenyan currency notes and coins up to sh.100, counts money in different denominations, works out equivalence of different	Learner identifies Kenyan currency notes and coins up to sh.100, counting money in different denominations, working out equivalence of different denominations,

denominations, relates money to goods and services and differentiates needs and wants accurately.	money to goods and services, and differentiates needs and wants.	denominations, relates money to goods and services and differentiates needs and wants with prompts.	relating money to goods and services and differentiating needs and wants with assistance.
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Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
3.0 Geometry	3.1 Lines (5 lessons)	By the end of the sub-strand, the learner should be able to: a) draw straight lines; b) model straight lines; c) draw curved lines; d) model curved lines; e) enjoy drawing straight and curved lines using digital devices.	<ul style="list-style-type: none"> • Learners in purposive pairs /groups to model straight and curved lines using sticks plasticine /clay/ papier mache .Learners with manipulative difficulties could be encouraged to perform tasks according to their ability, be assisted by peers, teacher aide, teacher or use assistive devices. • Learners in purposive groups to model straight and curved lines using strings (Adaptations in bullet 1 above apply here). • Learners in purposive groups to model straight and curved lines by holding their hands (Adaptations in bullet 1 above apply here). • Learners to draw straight and curved lines (Adaptations in bullet 1 above apply here). 	What types of lines do you know?

			<ul style="list-style-type: none"> Learners to model straight and curved lines using digital devices. Learners with fine motor difficulties and those without limbs could use head/mouth pointers to operate adapted computers. 	
<p>Core Competences to be developed: Communication and collaboration: As they carry perform group work. Self- efficacy: Motivated as they operate digital devices. Digital literacy: Operating digital devices.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> Life Skills: self- awareness - as learners use their body parts. ESD: DRR; safety- of materials in modeling lines. 		<p>Link to Values:</p> <ul style="list-style-type: none"> Respect: As they work in groups. Responsibility: Care for the ICT gadgets. 		
<p>Links to other learning areas:</p> <ul style="list-style-type: none"> Movement and creative activities: Make lines as they work in groups. Environmental activities: Care for self and others. 		<p>Suggested Community Service Learning Activities: Learners to assist in arranging seats in straight lines in community functions.</p>		
<p>Suggested non- formal activity to support learning: learners to arrange seats in straight lines in the classroom.</p>		<p>Suggested assessment: oral questions, written exercise, observation.</p>		
<p>Suggested Resources: Sticks, clay/papiermache, plasticine, strings, sticks, adapted computer and head/mouth pointers</p>				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly draws and models straight and curved lines with ease. Enjoy drawing straight and curved lines using digital devices correctly.	Learner correctly draws and models straight and curved lines. Enjoy drawing straight and curved lines using digital devices.	Learners in accurately draws and models straight and curved lines. Enjoy drawing straight and curved lines using digital device with prompts.	Learner has major inaccuracies in drawing and modeling straight and curved lines. Enjoy drawing straight and curved lines using digital devices with cues.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Geometry	3.2 Shapes (5 lessons)	By the end of the sub-strand, the learner should be able to: a) identify rectangles, circles, triangles, ovals and squares, b) Sort items of different shapes. c) appreciate making patterns involving rectangles, circles, triangles, ovals and squares.	<ul style="list-style-type: none"> Learners in purposive pairs/groups to sort and group items of different shapes .Learners with manipulative difficulties could be encouraged to perform tasks to their best ability, be assisted by peers, teacher aide, teacher or use assistive devices. Learners in purposive pairs/groups to discuss types of lines making different shapes. Learners with speech difficulties could write type 	<ol style="list-style-type: none"> 1) What shapes can you identify in your environment ? 2) What shapes are made by straight lines? 3) What shapes are made by

			<p>or draw lines making different shapes.</p> <ul style="list-style-type: none"> • Learners to identify and name the different shapes found in their classroom. Learners with speech difficulty could write or point or draw shapes in the classroom • Learners to make patterns of their choice using the five shapes. Learners with manipulative difficulties could be encouraged to perform tasks to their best ability. • Learners in groups to make patterns, colour them and share with other groups (Adaptations in bullet 1 above apply here) . • Learners to make patterns using digital devices. Learners with motor difficulties and those without limbs could use head/mouth pointers to operate adapted computers. 	<p>curved lines?</p>
<p>Core Competences to be developed: Communication and collaboration: As they work in groups. Imagination and creativity: As they make patterns of their choice using the five shapes. Self- efficacy: As they sort and group items of different shapes. Digital literacy: As they use digital devices.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Life Skills: self- awareness - use of their hands in making patterns. 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As they work in group • Unity: Cooperation and collaboration. 	

<ul style="list-style-type: none"> • ESD: DRR; safety- of materials in making patterns. 	<ul style="list-style-type: none"> • Responsibility: Carrying out given activities and taking care of the resources.
<p>Link to other learning areas :</p> <ul style="list-style-type: none"> • Movement and creative activities: As they group and sort. • Environmental activities: Care for self and others. 	<p>Suggested Community Service Learning Activities: Learners to visit the children homes and beautify their walls with patterns drawn on paper.</p>
<p>Suggested non- formal activity to support learning: learners to make patterns and stick them on classroom walls for beauty.</p>	<p>Suggested assessment: oral questions, written exercise, observation.</p>
<p>Suggested Resources: Adapted computer with appropriate software, head/mouth pointers objects different shapes found in the classroom, chart on shape, different colours and adapted paint brushes</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
<p>Learner correctly identifies shapes and makes patterns involving rectangles, circles, ovals, squares with ease. Appreciate making patterns using different shapes consistently.</p>	<p>Learner identifies shapes and makes patterns involving rectangles, circles, ovals, squares. Appreciate making patterns using different shapes.</p>	<p>Learner I inconsistently identifies shapes and makes patterns involving rectangles, circles, ovals, squares. Appreciate making patterns using different shapes with prompts.</p>	<p>Learner has major inaccuracies in identifying shapes and making patterns involving rectangles, circles, ovals, and squares without assistance. Appreciate making patterns using different shapes with cues.</p>

SUGGESTED RESOURCES

SUB -STRANDS	RESOURCES
NUMBER CONCEPT	Bottle tops , marbles ,sticks, stones, grains
WHOLE NUMBERS	Bottle tops, marbles , sticks, stones, grains, a number line drawn on the ground/floor
FRACTIONS	Circular and rectangular cut outs
ADDITION	Bottle tops, marbles, stones, sticks, grains, place value chart, abacus, basic addition facts table, a number line drawn on the ground/floor
SUBTRACTION	Bottle tops, marbles, sticks, stones, grains,basic addition facts table, a number line drawn on the ground/floor
MULTIPLICATION	Bottle tops, marbles, stones, grains, number line drawn on the ground/floor, multiplication table
DIVISION	Bottle tops, marbles, sticks, stones, grains, multiplication tables
LENGTH	Pencils, sticks, rulers, strings, ropes
MASS	Items of different masses such as books ,stones, pieces of wood, items of same mass, beam balance
CAPACITY	Containers of different sizes, 1-litre containers, water, soil, sand
TIME	Charts with number of days in each month and months of the year in order, clock face both analogue and digital
MONEY	Money in coins and notes sh.1,5,10, 20,40,50, 100, classroom shop
LINES	Sticks, clay, plasticine, strings, ropes
SHAPES	Cut- outs of rectangles, circles, triangles , ovals and squares 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.

GRADE 3

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
1.0 Numbers	1.1 Number Concept (8 lessons)	By the end of the sub-strand, the learner should be able to: a) use ordinal numbers to identify position from 1 - 20.	<ul style="list-style-type: none"> • Learners in pairs purposive/groups to arrange different items in order of size starting with the smallest. Learners with motor difficulties could be encouraged to arrange items according to their ability or assisted be by peers, teacher aide, teacher or use assistive devices. • Learners to identify the position of an object from a reference point using first, second up to 20th. Learner with speech difficulty to point at the position of an object. • Learners in groups to run for a distance and each to identify their position using the words first, second up to 20th position. Learners with mobility difficulties to be assisted by peers and those with speech use flash cards or communication board to identify their position. • Learners in purposive pairs/groups to relate numbers 1 – 20 to positions first, second up to 20th using concrete objects. 	In which position were you when you came to class in the morning?

			<ul style="list-style-type: none"> Learners to play digital games involving position 1st - 20th. Learners with missing limbs and those with fine motor difficulties may use head /mouth held pointers or be assisted by peers, teacher aide or teacher. 	
<p>Core-Competences to be developed: Communication and collaboration as they talk amongst themselves. Learning to learn: Identify the position of an object from a reference point Critical thinking and problem solving: Arrange different items in order of size. Digital literacy:</p>				
<p>Link to PCI's: Life Skills: self – awareness- as they use their body parts.</p>			<p>Link to Values:</p> <ul style="list-style-type: none"> Cooperation: As they work in groups. Social justice: As they identify their position honestly. positive competition: As they run for competition. 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> Language activities: As they communicate. 			<p>Suggested Community Service Learning Activities: learners may assist in giving patients cards in health facilities according to their arrival time.</p>	
<p>Suggested non-formal activity to support learning: learners to take turns in playing games.</p>			<p>Suggested assessment: written exercises, oral questions , observation.</p>	
<p>Suggested Resources: Head/mouth pointers, flash cards, items of different sizes</p>				

ASSESSMENT RUBRIC

Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Learner correctly uses ordinal numbers in identifying positions from 1 st -20 th and beyond with ease.	Learner correctly uses ordinal numbers in identifying positions from 1 st -20 th .	Learner inconsistently uses ordinal numbers in identifying positions from 1 st -20 th .	Learner requires assistance in using ordinal numbers in identifying positions from 1 st -20 th .

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.2 Whole Numbers (20 lessons)	By the end of the sub-strand, the learner should be able to: a) count numbers forward and backward from 1-1000; b) identify place value up to thousands; c) read numbers 1-1000 in symbols; d) read and write numbers 1-100 in words; e) identify missing numbers in number patterns up to 1000; f) appreciate number patterns as they skip on a number line.	<ul style="list-style-type: none"> Learners in purposive pairs/groups to count in 2's and 5's forward and backward starting from any point. Learners with speech difficulties could point numbers in ascending and descending order on the number table. Learners in purposive pairs/groups to count their fingers and toes in 2's and 10's forward and backward starting from any point. Learner with speech difficulties could point at fingers and toes in ascending and descending order on the number table ,while those with 	How would you get the total number of people in a group?

			<p>missing limbs could be provided with models , sticks, bottle tops.</p> <ul style="list-style-type: none"> • Learners in purposive pairs / groups to discuss place value up to thousands. Learners with speech difficulties to point on the number table. • Learners in purposive pairs / groups to compete reading numbers 1-1000 in symbols (Adaptations in bullet 3 above apply here). • Learners to read and write numbers 1-1000 in words. Learner with speech difficulty could write or point given number. • Learners to play digital games involving whole numbers. Learners with manipulative difficulty could be assisted by peers, teacher aide, teacher or use assistive devices. • Learners in purposive pairs/groups to make number patterns up to 1000 and share with other groups. Learners with motor difficulties could arrange or sort large number patterns with assistance from peers or teacher aide or teacher. 	
<p>Core-Competence to be developed: Communication and collaboration: As learners work in groups. Critically thinking and problem solving: As learners make number pattern. Digital literacy: As they play digital games involving whole numbers.</p>				
<p>Link to PCI's:</p>			<p>Link to Values:</p>	

<ul style="list-style-type: none"> • Life skills: self- awareness -as learners count their fingers and toes. • Citizenship: social cohesion -as learners work in groups. 	<ul style="list-style-type: none"> • Integrity: As they follow instructions given • Cooperation: As they work in groups • Unity: As they work together • Responsibility Carrying out activities given.
Link to other learning areas: <ul style="list-style-type: none"> • Language activities: As they communicate with each other. 	Suggested Community Service Learning Activities: Learners may assist in counting the number of chairs in a community function.
Suggested non-formal activity to support learning: Learners to count trees in the school compound.	Suggested assessment: written exercise, oral questions, observation.
<ul style="list-style-type: none"> • Suggested Resource: Flash cards, number tables, hand /foot models, sticks, bottle tops. 	

ASSESSMENT RUBRIC

Exceeds expectation	Meets expectation	Approaches expectation	Approaches expectation
Learner correctly counts numbers from 1 -1000,reads and writes numbers 1-100 in words, reads and writes number symbols from 1 – 1000, identifies place value up to thousands, works out missing numbers in patterns up to 1000 with ease.	Learner correctly counts numbers from 1 - 1000,reads and writes numbers 1-100 in words, reads and writes number symbols from 1 – 1000, identifies place value up to thousands, works out missing numbers in patterns up to 1000.	Learner inconsistently counts numbers from 1 - 1000, reads and writes numbers 1-100 in words, reads and writes number symbols from 1 -1000, identifies place value up to thousands, works out missing numbers in patterns up to 1000.	Learner requires assistance to count numbers from 1 - 1000, reads and writes numbers 1-100 in words, reads and writes number symbols from 1 -1000, identifies place value up to thousands, works out missing numbers in patterns up to 1000.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.3 Fractions (10 lessons)	<p>By the end of the sub-strand the learner should be able to:</p> <p>a) identify $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$ as part of a whole;</p> <p>b) identify $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$ as part of a group.</p>	<ul style="list-style-type: none"> • Learners in purposive pairs /groups to make circular cut-outs Learners with motor difficulties could be encouraged to perform activities according to their ability or be assisted by peers, teacher aide or teacher. • Learners in purposive pairs /groups to fold circular cut-outs into 2 equal parts and identify one part as $\frac{1}{2}$ of the whole (Adaptations in bullet 1 above apply). • Learners in purposive pairs /groups to make rectangular cut-outs and fold them into 4 equal parts to get a quarter of a whole and identify each part as $\frac{1}{4}$ of the whole (Adaptations in bullet 1 above apply). • Learners in purposive pairs /groups to make rectangular cut-outs and fold to get 8 equal parts and identify one part as $\frac{1}{8}$ of the whole. (Adaptations in bullet 1 above apply). • Learners in purposive pairs /groups to divide a number of objects into 2 equal groups and identify each of the small groups as $\frac{1}{2}$ of the whole group 	<p>How can you represent a half, a quarter or an eighth of a group?</p>

			<p>(Adaptations in bullet 1 above apply).</p> <ul style="list-style-type: none"> • Learners in purposive pairs /groups to divide a number of objects into 4 equal groups and identify each of the small groups as $\frac{1}{4}$ of the whole group (Adaptations in bullet 1 above apply). • Learners in purposive pairs /groups to divide a number of objects into 8 equal groups and identify each of the small groups $\frac{1}{8}$ of the whole group (Adaptations in bullet 1 above apply). • Learners to play digital games involving $\frac{1}{2}$ $\frac{1}{4}$ and $\frac{1}{8}$. Learners with missing limbs or those with fine motor difficulties could be assisted by peers, teacher aide, teacher or use assistive devices such as head or mouth/head pointers 	
<p>Core-Competence to be developed: Communication and collaboration: As learners communicate in groups. Critical thinking and problem solving: As learners make cut outs and fold to get equal parts. Digital literacy: As learners play digital games.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Life skills: interpersonal relationships- friendship formation and decision making. 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Integrity: As learners follow instructions given • Unity: As learners work in groups 	

<ul style="list-style-type: none"> • Citizenship: integrity-sharing, social cohesion -as they work in groups. • ESD: environmental awareness- As learners collect objects like sticks. • Safety and security: using cutting tools 	<ul style="list-style-type: none"> • Responsibility: As they perform given activities.
<p>Link to other learning areas: Environmental activities: As learners work with materials in the environment.</p> <ul style="list-style-type: none"> • Language activities: As learners communicate as they work in groups. 	<p>Suggested Community Service Learning Activities: Learners can share responsibilities during community activities.</p>
<p>Suggested non- formal Activity to support learning: learners to share library books during free time.</p>	<p>Suggested assessment: written exercise, observation, oral questions.</p>
<p>Suggested Resources: Computer, paper cut-outs, scissors, head/mouth pointers</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly identifies 1/2, 1/4, 1/8 and more as part of a whole and as part of a group.	Learner correctly identifies 1/2, 1/4 and 1/8 as part of a whole and as part of a group.	Learner inconsistently identifies 1/2, 1/4 and 1/8 as part of a whole and as part of a group.	Learner is assisted in identifying 1/2, 1/4 and 1/8 as part of a whole and as part of a group.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.4 Addition (25 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) add a 3- digit number to up to a 2 - digit number without regrouping with sum not exceeding 1000;</p> <p>b) add a 3- digit number to up to a 2- digit number with single regrouping with sum not exceeding 1000;</p> <p>c) add three single digit numbers with sum up to 27;</p> <p>d) add two 3- digit numbers without regrouping;</p> <p>e) add two 3- digit numbers with single regrouping with sum not exceeding 1000;</p> <p>f) work out missing numbers in patterns involving addition up to 1000;</p> <p>g) create number pattern involving addition up to 1000.</p>	<ul style="list-style-type: none"> • Learners to add up to two 3- digit numbers without and with regrouping with sum not exceeding 1000. Learners with motor difficulties could be assisted by peers, teacher aide, teacher or use assistive devices (This adaptation applies to all other bullets below). • Learners to practice adding horizontally and vertically • Learners in pairs to come up with different ways of adding 3- single digit numbers. • Learners to play digital games involving addition. • Learners to create and work out missing numbers in patterns involving addition up to 1000. 	<ol style="list-style-type: none"> 1) How do you arrange numbers when adding vertically 2) How do you identify the first two numbers to add when adding three single digit numbers? 3) How can you get the next number in a given pattern?
<p>Core Competences to be developed: Communication and collaboration: As learners work in pairs and play digital games. Critical thinking and problem solving: As learners create and work out missing numbers in patterns. Digital literacy: As learners play digital games.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • ESD: DRR; safety-environmental awareness. • Life skills: self- awareness-as they use body parts in counting. 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Integrity: As learners follow given instructions • Responsibility: As learners perform given activities. 	

<p>Link to other learning areas:</p> <ul style="list-style-type: none"> Language activities: As learners work in groups. 	<p>Suggested Community Service Learning Activities: Learners may assist in working out the total number of different trees in their locality in order to find out which type should be planted.</p>
<p>Suggested non-formal activity to support learning: Learners to work out total number of learners in the school.</p>	<p>Suggested assessment: written exercise, observation, oral questions.</p>
<p>Suggested Resources: Computer, flash cards, charts showing addition, addition table sum not exceeding 1000</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaching Expectation	Below Expectation
<p>Learner correctly adds a 3-digit number to up to 3- digit numbers with double regrouping with sum not exceeding 1000, works out missing numbers in number patterns up to 1000, creates patterns involving addition up to 1000.</p>	<p>Learner correctly adds a 3-digit number to up to 3- digit numbers with single regrouping with sum not exceeding 1000, works out missing numbers in number patterns up to 1000, creates patterns involving addition up to 1000.</p>	<p>Learner inconsistently adds a 3-digit number to up to 3- digit numbers with single regrouping with sum not exceeding 1000 works out missing numbers in number patterns up to 1000, creates patterns involving addition up to 1000.</p>	<p>Learners assisted in adding a 3- digit number to up to 3- digit numbers with single regrouping with sum not exceeding 1000, working out missing numbers in number patterns up to 1000, creating patterns involving addition up to 1000.</p>

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.5 Subtraction (20 lessons)	By the end of the sub-strand, the learner should be able to: a) subtract up to 3- digit numbers without regrouping; b) subtract up to 3- digit numbers involving missing numbers with single regrouping; c) work out missing numbers in number patterns involving subtraction up to 1000.	<ul style="list-style-type: none"> • Learners to work out subtraction of up to 3-digit numbers without regrouping in real life situations. Learners with motor difficulties could be assisted by peers, teacher aide, teacher or use assistive devices. • Learners to work out missing numbers in subtraction of up to 3-digit numbers with single regrouping using a variety of strategies such as number families (Adaptations in bullet 1 above apply here). • Learners to play digital games involving subtraction. Learners with fine motor difficulties and those with missing limbs could be assisted by peers, teacher aide, teacher or use assistive devices. Learners with epilepsy need reduced light on their computers to avoid seizures. • Learners to discuss how to work out missing numbers in patterns involving subtraction up to 1000. Learners speech difficulties could be assisted by peers to express their views, teacher aide, teacher or use communication devices. 	<ol style="list-style-type: none"> 1) When do you regroup during subtraction? 2) How do you identify the missing number in a number pattern?

Core Competences to be developed: Communication and collaboration: As learners work in groups. Critical thinking and problem solving: As learners work out on missing numbers in patterns. Digital literacy: As learners play digital games.	
Link to PCI's: Safety and security: Observing core and precaution. Citizenship: Social cohesion as learners work in groups.	Link to Values: <ul style="list-style-type: none"> • Respect: As learners work in groups. • Responsibility: As learners perform activities given. • Integrity: As learners follow instructions.
Link to other learning areas: <ul style="list-style-type: none"> • Language activities: As learners work in group 	Suggested Community Service Learning Activities: learners to participate in community environmental cleaning activities.
Suggested non- formal activity to support learning: learners to clean up their school.	Suggested assessment: Oral questions, written exercise, observation.
Suggested Resource: Number stamps, computer, head/mouth pointers	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaching Expectation	Below Expectation
Learner correctly subtracts up to 3- digit numbers without regrouping, subtracts up to 3- digit numbers involving missing numbers with single regrouping, works out missing numbers in patterns up to 1000 with ease.	Learner correctly subtracts up to 3- digit numbers without regrouping, subtracts up to 3- digit numbers involving missing numbers with single regrouping, works out missing numbers in patterns up to 1000.	Learner inconsistently subtracts up to 3- digit numbers without regrouping, subtracts up to 3- digit numbers involving missing numbers with single regrouping, works out missing numbers in patterns up to 1000.	Learner is assisted in subtracting up to 3- digit numbers without regrouping, subtracting up to 3- digit numbers involving missing numbers with single regrouping, working out missing numbers in patterns up to 1000.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.6 Multiplication (10 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> a) multiply single digit numbers by numbers 1-10 in different contexts; b) write repeated addition as multiplication using 'x' signs; c) enjoy playing digital games involving multiplication. 	<ul style="list-style-type: none"> • Learners in purposive pairs/groups to multiply single digit numbers by numbers 1-10 using: <ul style="list-style-type: none"> -groups of objects -repeated addition -multiplication table. Learners with missing limbs could use alternative functioning parts of the body parts, and those with fine motor difficulties could use assistive devices or be assisted by peers, teacher aide or teacher. • Learners to write repeated addition as multiplication using 'x' sign (Adaptations in bullet 1 above apply here). • Learners to play digital games involving multiplication. Learners with missing limbs could use assistive devices such as head/mouth pointers to play. 	<ol style="list-style-type: none"> 1) How can you work out multiplication using repeated addition? 2) How can we get the answer to a multiplication question using the multiplication table?
<p>Core competences to be developed: Communication and collaboration: As they work in groups. Self-efficacy: As they succeed in playing digital games. Digital literacy: Playing digital games.</p>				

<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Life skills: self –awareness -learners use body parts in grouping objects. • ESD: DRR; Environmental conservation-learners re-use materials and objects; animal welfare-feeding animals in small portions at a time. 	<p>Link to values :</p> <ul style="list-style-type: none"> • Unity: Working in harmony • Cooperation: As they work in groups
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Language activities: As they communicate in groups • Environmental activities: Use objects within the environment 	<p>Suggested Community Service Learning Activities: learners to assist farmers in finding out how many seedlings planted in rows are in a seed bed.</p>
<p>Suggested non-formal activities to support learning: Learners to play games involving multiplication in school.</p>	<p>Suggested assessment: written exercise, observation, oral questions.</p>
<p>Suggested Resources: Head/mouth pointers, computer, realia, multiplication tables and ICT gadgets.</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
<p>Learner correctly multiplies single digit numbers by numbers 1-10 and beyond. Enjoy plying digital games involving multiplication correctly.</p>	<p>Learner multiplies single digit numbers by numbers 1-10. Enjoy plying digital games involving multiplication.</p>	<p>Learner inconsistently multiplies single digit numbers by numbers 1-10. Enjoy plying digital games involving multiplication with prompts.</p>	<p>Learner has difficulties multiplying single digit numbers by numbers 1-10. Enjoy plying digital games involving multiplication with cues.</p>

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Numbers	1.7 Division (8 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) represent division as repeated subtraction up to 5 times;</p> <p>b) show relationship between multiplication and division using mathematical sentences up to $9 \times 10 = 90$;</p> <p>c) enjoy playing games involving division.</p>	<ul style="list-style-type: none"> • Learners to take away from a group of specific number of objects at a time until all are finished and then count the number of small groups formed. Learners with motor difficulties could be encouraged to perform the activity to their individual ability or be assisted by peers, teacher aide or teacher. Learners with speech difficulties could be encouraged to use residual speech, peer, assistance to relate division and multiplication • Learners to represent division as repeated subtraction up to 5 times. Learners with motor difficulties could be encouraged to perform the activity at their ability or be assisted by peers, teacher aides. • Learners to discuss the relationship between division and multiplication using the multiplication table. Learners with speech difficulties could be assisted by peers, teacher aide , teacher or use communication board • Learners in purposive pairs/ groups to practice how to divide numbers related to multiplication of up to 	<ol style="list-style-type: none"> 1) How can we divide numbers using subtraction? 2) How can we use the multiplication table to work out division questions?

			<p>$9 \times 10 = 90$ (Adaptations in bullet 2 above apply here).</p> <ul style="list-style-type: none"> Learners to play digital games involving division. Learners with missing limbs and motor difficulties could use assistive devices such as head/mouth pointers or be assisted by peers, teacher or teacher aide. 	
<p>Core Competences to be developed: communication and collaboration: As they talk with each other in group work. Critical thinking and problem solving: As they represent division as repeated subtraction. Digital literacy: Play digital games involving division.</p>				
<p>Link to PCI's: ESD: animal welfare- feeding animals by giving small portions at a time.</p>			<p>Link to Values:</p> <ul style="list-style-type: none"> Respect: As they co-operate in groups. Responsibility: As they care for the gadgets Love: AS they work with others. 	
<p>Link to other learning areas :</p> <ul style="list-style-type: none"> Language activities: Talk with each other in group work Environmental activities: Use objects from the immediate environment 			<p>Suggested Community Service Learning Activities: learners to assist in sharing food in functions.</p>	
<p>Suggested non- formal activity to support learning: learners to water flowers and trees in the school compound.</p>			<p>Suggested assessment: oral questions, written exercise, observation.</p>	
<p>Suggest Resources: Multiplication tables, flash cards, realia, head /mouth pointers, adapted digital gadgets, adapted.</p>				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly represents division as repeated subtraction up to more than 5 times and relates division to multiplication up to $9 \times 10 = 90$. Enjoy playing digital games involving division accurately.	Learner represents division as repeated subtraction up to 5 times and relates division to multiplication up to $9 \times 10 = 90$. Enjoy playing digital games involving division.	Learner inconsistently represents division as repeated subtraction up to 5 times, relates division to multiplication up to $9 \times 10 = 90$. Enjoy playing digital games involving division with prompts.	Learner has difficulties representing division as repeated subtraction up to 5 times and in relating division to multiplication up to $9 \times 10 = 90$. Enjoy playing digital games involving division with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
2.0 Measurement	2.1 Length (6 lessons)	By the end of the sub-strand, the learner should be able to: a) measure lengths in metres; b) add lengths in metres; c) subtract lengths in metres; d) estimate lengths up to 20 metres; e) enjoy taking videos of other measuring lengths.	<ul style="list-style-type: none"> Learners, in purposive pairs/groups to use metre sticks to measure various distances and record their results. Learners with motor difficulties could be encouraged to perform activities to their individual ability. Those with missing limbs to use alternative functioning parts of the body or be assisted by peers, teacher aide, teacher or use assistive devices (This adaptation applies to all other bullets below). 	<ol style="list-style-type: none"> How do you measure the chalkboard using a metre stick? How do you get the total length in metres of the 4 classroom walls? How do you measure the

			<ul style="list-style-type: none"> • Learners to prepare 5 metres long strings with knots at intervals of one metre to measure long distances. • Learners in groups to measure the lengths of the 4 walls in their classroom and add the lengths. • Learners to measure the length of the chalkboard and the wall it is fixed and work out the difference in length. • Learners to work out questions involving addition and subtraction of length in metres based on real life situations. • Learners in pairs/groups to estimate distances around the school up to 20 metres and measure to confirm. • Learners to take videos of others measuring length then playback and discuss. 	<p>distance between the flag post and the staffroom using a 5 metres long string?</p>
<p>Core Competencies to be developed: Communication and collaboration: As they do group work. Critical thinking and problem solving: As they prepare strings with knots. Self-efficacy: As they take measurement accurately. Digital literacy: As they take videos</p>				
<p>Link to PCI's: ESD: DRR ; environmental awareness-re-use of materials, safety- of materials learners use.</p>			<p>Link to values:</p> <ul style="list-style-type: none"> • Integrity As they work out questions involving addition and subtraction of length in metres • Unity: Cooperation as they work together • Responsibility: Taking care of the resources. 	

<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Environmental activities: As they measure various distances • Language activities: As they communicate in group work 	<p>Suggested Community Service Learning Activities:</p> <p>Learners to assist their neighbours in measuring length when building chicken and rabbit cages among others.</p>
<p>Suggested non-formal activity to support learning:</p> <p>Learners to measure lengths of buildings in school.</p>	<p>Suggested assessment: oral questions, observation' written exercise.</p>
<p>Suggested Resources: Strings, sticks, chalk board, BB ruler, realia and video tapes,</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
<p>Learner correctly measures length in metres, adds length in metres, subtracts length in metres and estimates length up to 20 metres and beyond. Enjoy taking video of others measuring length accurately.</p>	<p>Learner measures length in metres, adds length in metres, subtracts length in metres and estimates length up to 20 metres. Enjoy taking video of others measuring length.</p>	<p>Learner inconsistently measures length in metres, adds length in metres, subtracts length in metres and estimates length up to 20 metres. . Enjoy taking video of others measuring length with prompts.</p>	<p>Learner is assisted to measure length in metres, add length in metres, subtract length in metres and estimate length up to 20 metres. Enjoy taking video of others measuring length with cues.</p>

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.2 Mass (6 lessons)	By the end of the sub-strand, the learner should be able to: a) measure mass in kilograms; b) add and subtract mass in kilograms; c) estimate mass up to 5 kilograms.	<ul style="list-style-type: none"> • Learners to measure mass in kilograms using a beam balance. Learners with motor difficulties could be encouraged to perform activities to their individual ability or assisted by peers, teachers or teacher aides. This adaptations applies to all other bullets below • Learners to make masses of 1kg using sand/ soil by measuring against the kilogram standard unit. • Learners to add and subtract mass in kilograms in real life situations. • Learners to use a 5kg mass to compare other masses. • Learners to estimate mass up to 5kg and measure to confirm. • Learners to play digital games involving mass. Learners with missing limbs or those with fine motor challenges could be assisted by peers, teacher aide, teacher or use assistive devices such as head/mouth held pointers. 	How can you make a 1kg mass using a beam balance?
<p>Core competencies to be developed: Communication and collaboration: As they work in groups. Critical thinking and problem solving: As they add and subtract mass in real life situation. Self-efficacy: As they succeed in measuring mass. Digital literacy: AS they play digital games.</p>				
Link to PCI's:			Link to Values:	

<ul style="list-style-type: none"> • Citizenship: social cohesion: As learners work in groups. • ESD: DRR; safety- in selecting appropriate materials. 	<ul style="list-style-type: none"> • Unity: As they work in groups. • Responsibility: Taking care of self, and resources.
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Environmental activities: Make masses of 1kg using sand/ soil by measuring • Language activities: Talk with each other in groups • Movement and creative activities: Carrying different weights. 	<p>Suggested Community Service Learning Activities: Learners to assist neighbours in arranging light items.</p>
<p>Suggested non-formal activity to support learning: learners to measure mass of different items in kilograms.</p>	<p>Suggested assessment: written exercise, oral questions, observation.</p>
<p>Suggested Resources: Head/mouth pointers beam balance, realia (soil/sand)</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaching Expectation	Below Expectation
Learner correctly: measures mass in kilograms, adds and subtracts mass in kilograms and estimates mass up to 5kg and beyond. Enjoy playing games involving mass accurately.	Learner measures mass in kilograms adds and subtracts mass in kilograms and estimates mass up to 5kg. Enjoy playing games involving mass.	Learner inconsistently: measures mass in kilograms, adds and subtracts mass in kilograms and estimates mass up to 5kg. Enjoy playing games involving mass with prompts.	Learner is assisted in measuring mass in kilograms, adding and subtracting mass in kilograms and estimating mass up to 5kg. Enjoy playing games involving mass with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.3 Capacity (8 lessons)	By the end of the sub-strand, the learner should be able to: a) measure capacity in litres; b) add and capacity in litres; c) estimate capacity up to 5 litres; d) Subtract capacity in litres; e) enjoy digital games involving capacity.	<ul style="list-style-type: none"> • Learners in purposive pairs/groups measure capacity of different containers in litres. Learners with motor difficulties could be encouraged to the perform activities to their individual ability or be assisted by peers, teacher aide, teacher or use assistive devices. This adaptation applies to all other bullets below. <ul style="list-style-type: none"> • Learners to add and subtract capacity in litres in real life situations. • Learners to estimate capacity up to 5 litres and measure to confirm. • Learners play digital games involving capacity. 	What can we use to measure capacity?
<p>Core Competences to be developed: Communication and collaboration: As they work in groups. critical thinking and problem solving: As they measure. Digital literacy: As they play digital games. Citizenship: Respect for others as they work in groups.</p>				
<p>Link to PCI's: Citizenship: Social cohesion</p>			<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As they work in groups • Responsibility: As they take care of the resources. 	
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Language activities: Talk with each other in group work. 			<p>Suggested Community Service Learning Activities: learners to take part in watering flowers and trees around places of worship, health centres and at home.</p>	

Suggested non- formal activity to support learning: Learners to water flowers and trees in the school compound.	Suggested assessment: oral questions, observation, written exercise.
Suggested Resource: Containers, computers, water, assistive devices, video or video gadgets.	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly measures capacity in litres, adds and subtracts capacity in litres in real life experiences and estimates capacity up to 5 litres and beyond. Enjoy digital games involving capacity successfully.	Learner measures capacity in litres, adds and subtracts capacity in litres in real life experiences and estimates capacity up to 5 litres. Enjoy digital games involving capacity.	Learner inconsistently: measures capacity in litres, adds and subtracts capacity in litres in real life experiences and estimates capacity up to 5 litres. Enjoy digital games involving capacity with prompts.	Learner is assisted in measuring capacity in litres, adding and subtracting capacity in litres in real life experiences and estimating capacity up to 5 litres. Enjoy digital games involving capacity with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.4 Time (10 lessons)	By the end of the sub-strand, the learner should be able to: a) identify the minute as a unit of measuring time; b) read time using the digital clock;	<ul style="list-style-type: none"> Learners to discuss the divisions on a clock face and what each division represents. Learners with speech difficulty could use residual speech, communication board or be assisted by peers, teacher aide or teacher. This 	How do we convert hours to minutes?

		<ul style="list-style-type: none"> c) read time using ‘past’ and ‘to’ the hour using the clock face; d) tell time using digital clock; e) tell time using past and ‘to’ the hour using the clock face; f) write time using ‘past’ and ‘to’ the hour; g) estimate time in hours, h) time involving hours and minutes without conversion in real life situations. i) subtract time involving hours and minutes without conversion in real life situation; j) enjoy writing timer with digital and analogue clock. 	<p>adaptation applies to all other bullets below except the last one .</p> <ul style="list-style-type: none"> • Learners to read time on a digital clock. • Learners in purposive pairs/groups to discuss the relationship between hours and minutes using a clock face. • Learners in pairs/groups to read tell and write time using ‘past’ and ‘to’ the hour. • Learners in pairs/groups to estimate time in hours. • Learners in purposive pairs/groups to add and subtract time involving hours and minutes without conversion in real life situations. Learners with motor difficulties could be assisted by peers, teacher aide , teacher or use assistive devices. 	
<p>Core Competences to be developed: Communication and collaboration: As they work in group. Critical thinking and problem solving: As they add and subtract time involving hours.</p>				
<p>Link to PCI’s:</p> <ul style="list-style-type: none"> • Health education: HIV and AIDS- drugs time adherence. • Citizenship: governance- law and order in school in keeping time. 		<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As they work in groups • Responsibility: Care for the resources i.e. clock 		
<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Language activities: Talk as they work in groups 		<p>Suggested Community Service Learning Activities: Learners to assist in being time keepers in community activities.</p>		
<p>Suggested non- formal activity to support learning: Learners to assist in time keeping during games.</p>		<p>Suggested assessment: oral questions, observation, written exercise.</p>		
<p>Suggested Resource: Clock face, communication board, realia, chart showing time</p>				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly reads, tells, writes time using ‘past’ and ‘to’ the hour, estimates time in hours and minutes, adds and subtracts time involving hours and minutes without conversion in real life situations with ease. Enjoy writing time with digital and analogue clock accurately.	Learner reads, tells, writes time using ‘past’ and ‘to’ the hour, estimates time in hours, adds and subtracts time involving hours and minutes without conversion in real life situations. Enjoy writing time with digital and analogue clock.	Learner in consistently: reads, tells, writes time using ‘past’ and ‘to’ the hour, estimates time in hours, adds and subtracts time involving hours and minutes without conversion in real life situations. Enjoy writing time with digital and analogue clock with prompts.	Learner can only read only read, tell, write time using ‘past’ and ‘to’ the hour, estimate time in hours, add and subtract time involving hours and minutes without conversion in real life situations with assistance. Enjoy writing time with digital and analogue with cues.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Measurement	2.5 Money (10 lessons)	By the end of the sub-strand, the learner should be able to: a) identify Kenyan currency notes up to sh.1000; b) count money in different denominations up to sh.1000, c) add and subtract money involving up to sh.1000; d) subtract money involving up to Sh. 100;	<ul style="list-style-type: none"> Learners in purposive pairs/groups to sort out Kenyan currency notes according to their value and features up to sh.1000. Learners with motor difficulties could be encouraged to perform activities according to their ability or be assisted by peers, teacher aide or teacher. Learners in pairs/groups to practice addition and subtraction of money in real life situations up to sh.1000 	What is the difference between needs and wants?

		<ul style="list-style-type: none"> e) carry out shopping activities involving change and balance; f) relate money to goods and services up to sh.1000; g) differentiate between needs and wants; h) appreciate spending and saving of money in real life situations; 	<p>(Adaptations in bullet 1 above apply here).</p> <ul style="list-style-type: none"> • Learners in pairs/groups to practice giving change and balance using imitation money up to sh.1000 in shopping activities. (Adaptations in bullet 1 above apply here). • Learners in pairs/groups to share own experiences in relation to shopping activities. Learners with speech difficulties could be assisted by peers to report their views, teacher aide, and teacher or use communication board. • Learners in pairs/groups to classify needs and wants (Adaptations in bullet 4 above apply here). • Learners to play digital games involving money. Learners with missing limbs and fine motor difficulties could be supported by peers, teacher aide, teacher or use assistive devices. 	
<p>Core Competences to be developed: Communication and collaboration: As they do group work .Digital literacy: As they play digital games Citizenship: Unity and cooperation in group work.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • ESD: financial literacy- the choice of what to buy and what not to buy. • Parental Empowerment and engagement: selection of what to buy and what not to buy. 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As they work in groups. • Responsibility: Care for the resources. 	

<p>Link to other learning areas:</p> <ul style="list-style-type: none"> • Language activities: Terms used in money • Environmental activities: Money as a medium of exchange, video and digital gadgets. 	<p>Suggested Community Service Learning Activities: Learners to visit older citizens to listen to stories involving money features.</p>
<p>Suggested non- formal activity to support learning: Learners to help count money in school activities.</p>	<p>Suggested assessment: written exercise, oral questions, observation.</p>
<p>Suggested Resource: Kenyan Currency notes up to 1000, classroom shop, realia, price list paper money</p>	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
<p>Learner correctly identifies Kenyan currency notes up to sh. 1000, counts money in different denominations, adds, subtracts, carries out shopping activities above sh.1000, relates money to goods and services, differentiates needs and wants, explains meaning of spending and saving in real life situations. Appreciate spending and saving of money in real life situation.</p>	<p>Learner identifies Kenyan currency notes up to sh. 1000, counts money in different denominations, adds, subtracts, carries out shopping activities within sh.1000, relates money to goods and services, differentiates needs and wants, explains meaning of spending and saving in real life situations. Appreciate spending and saving of money.</p>	<p>Learner inconsistently: identifies Kenyan currency notes up to sh.1000, counts money in different denominations, adds, subtracts, carries out shopping activities within sh.1000, relates money to goods and services, differentiates needs and wants, explains meaning of spending and saving in real life situations. Appreciate spending and saving of money with prompts.</p>	<p>Learner requires assistance to identify Kenya currency notes up to sh.1000, count money in different denominations, adding, subtracting, carrying out shopping activities within sh.1000, relates money to goods and services, differentiating needs and wants, explaining meaning of spending and saving in real life situations . Appreciate spending and saving of money with cues.</p>

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
3.0 Geometry	3.1 Position and Direction (5 lessons)	By the end of the sub-strand, the learner should be able to: a) move along a straight line from a point; b) turn to the right from a point; c) turn to the left from a point.	<ul style="list-style-type: none"> • Learners in purposive pairs /groups to move along a straight line from a given point. Learners with mobility difficulties could be assisted by peers, teacher or teacher aide or use assistive devices. • Learners in purposive pairs/groups to move straight along the outside of their classroom and then turn to the right or left (Adaptations in bullet 1 above apply here). • Learners in pairs practice moving along a straight line and turning left or right left (Adaptations in bullet 1 above apply here). • Learners to play digital games on movement. Learners with missing limbs and fine motor difficulties could be supported by peers, teacher aide, teacher or use assistive devices. 	What do you do when you get to a road junction?
<p>Core Competences to be developed: Communication and collaboration: As learners work in groups. Critical thinking and problem solving: Move along a straight line and turn left or right. Digital literacy: As learners play digital games.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Life skills: self- awareness - as learners use their parts in movement. • Citizenship: social cohesion- as learners work in groups. 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Cooperation: As learners work in groups • Responsibility: As learners accomplish the tasks given 	

	<ul style="list-style-type: none"> • Unity: As they work together in groups
Link to other learning areas: <ul style="list-style-type: none"> • Language activities: As they communicate and follow instructions. • Movement and creative activities: As learners move along a straight line and turn from left to right. • Environmental activities: As learners carry out the activities within the environment. 	Suggested Community Service Learning Activities: learners to assist in ushering people during community functions.
Suggested non- formal activity to support learning: learners to participate in games, athletics and scouting.	Suggested assessment: written exercise, oral questions, observation.
Suggested Resources: School map (infrastructure in the school)	

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly demonstrates movement along a straight line and turns to the right or left with ease.	Learner correctly demonstrates movement along a straight line and turning to the right or left.	Learner in accurately demonstrates movement along a straight line, and turning to the right or left.	Learner is assisted in demonstrating movement along a straight line and turning to the right or left.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
Geometry	3.2 Shapes (4 lessons)	By the end of the sub-strand, the learner should be able to: a) make patterns involving rectangles, circles, triangles, ovals and squares; b) appreciate making patterns involving rectangles, circles, triangles, ovals and squares.	<ul style="list-style-type: none"> • Learners to sort and group items of different shapes. Learners with manipulative difficulties could be encouraged to perform the activity to individual ability or be assisted by peers, teacher aide, teacher or use assistive devices. • Learners in purposive pairs /groups to discuss the types of lines making various shapes. Learners with speech difficulty could point write, type or use communication board. • Learners to identify and name the different shapes found in their environment (Adaptation in bullet 2 above apply here). • Learners to make patterns using the five shapes. Learners with manipulative difficulties could be encouraged to perform the activity to individual ability or assisted be assisted by peers, teacher aide or teacher • Learners in groups to make patterns colour them and share with other groups. (Adaptation in bullet 4 above apply here). • Learners to play digital games involving shapes. 	What shapes can you identify in your school?

			Learners with missing limbs or with fine motor difficulties could be assisted by peers, teacher, teacher aide or use assistive devices.	
<p>Core Competences to be developed:</p> <p>Communication and collaboration: As they work in groups.</p> <p>Creativity and imagination: As they make patterns using the five shapes.</p> <p>Critical thinking and problem solving: As learners sort and group items.</p> <p>Digital literacy: As they play digital games.</p>				
<p>Link to PCI's:</p> <ul style="list-style-type: none"> • Citizenship: leadership development, social cohesion- as learners work in groups. • Life skills: self- esteem and awareness- as learners make patterns 			<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect: As learners work in groups • Responsibility: As they perform the given task • Unity: As they work in groups. 	
<p>Link to other learning areas :</p> <ul style="list-style-type: none"> • Languages activities: Learners communicate in groups. • Movement and creative activities: As learners make patterns and colour them. • Environmental activities: As learners work in the environment. 			<p>Suggested Community Service Learning Activities: learnersto visit children homes and beautify their rooms with patterns drawn on paper.</p>	
<p>Suggested non- formal activity to support learning: learners to mark games /sports fields.</p>			<p>Suggested assessment: written exercises,oral questions, observation.</p>	
<p>Suggested Resources: Cut-out shapes, computer</p>				

ASSESSMENT RUBRIC

Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Learner correctly makes patterns involving rectangles, circles, triangles, ovals, squares with ease.	Learner correctly makes patterns involving rectangles, circles, triangles, ovals and squares.	Learners inaccurately makes patterns involving rectangles, circles, triangles, ovals and squares.	Learner is assisted in making patterns involving rectangles, circles, triangles, ovals and squares.

SUGGESTED RESOURCES

SUB -STRANDS	RESOURCES
NUMBER CONCEPT	Marbles, sticks, stones, grains
WHOLE NUMBERS	A number line drawn on the ground/floor, place value chart
FRACTIONS	Circular and rectangular cut outs, marbles, bottle tops ,sticks, grains, stones
ADDITION	Place value chart, abacus, basic addition facts table
SUBTRACTION	Basic addition facts table, place value chart
MULTIPLICATION	Bottle tops ,marbles, stones, grains, number line drawn on the ground/floor, multiplication tables
DIVISION	Bottle tops, marbles, stones, sticks, grains, multiplication tables
LENGTH	Books, pencils, rulers, sticks, bottles, metre rule, metre sticks
MASS	Masses of 1kg, soil, sand, beam balance
CAPACITY	Containers of different sizes, 1litre containers ,sand soil water,5 litre containers
TIME	Clock face both analogue and digital
MONEY	Kenyan currency coins and notes/imitations up to sh.1000, classroom shop
POSITION AND DIRECTION	Charts showing a straight line, a turn to the left and a turn to the right
SHAPES	Cut- outs of rectangles, circles, triangles, ovals and squares 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 1: SUGGESTED ASSISTIVE DIVICES, ENVIRONMENTAL ADAPTATIONS, TIME AND ADAPTATIONS INASSESSMENT

1. SUGGESTED ASSISTIVE DEVICES

The suggested assistive devices have been categorized into 3 groups:

- a) Instructional devices
- b) Positioning devices
- c) Mobility devices

a) INSTRUCTIONAL DEVICES

- Head pointes
- Page turners
- Mouth operated pointers
- Pen/pencil holders/grips
- Book holders
- Stabilizers
- Adapted tools and equipment
- Adapted computers
- Adapted books

NOTE: Adaptation and modification of learning resources should be done to suit the individual learners' needs.

b) POSITIONING DEVICES

- Adapted chairs/desks
- Adapted tables
- Adjustable boards
- Corner seats
- Standers
- Floor seaters

- Prone wedgers
- Orthotics
- Straps

c) MOBILITY DEVICE

- Crutches
- Calipers
- Walkers
- Wheelchairs
- Braces
- Canes
- Prosthesis
- Artificial limbs

2. SUGGESTED HUMAN RESOURCES

- Physiotherapists
- Occupational therapists
- Speech therapist
- Teacher Aides

3. SUGGESTED ENVIRONMENTAL ADAPTATIONS

Provide a barrier free environment

- Wide doors
- Ramps
- Railings
- Handrails
- Walk-ways
- Sanitation facilities
- Lifts

- Low door handlers
- Low switches
- Low water taps
- Storage facilities

Safety precaution measures

- Avoid slippery floors
- Clutter free environment
- Barrier free walkways

4. TIME

Instructional and examination time to vary according to the needs of the learner.

5. SUGGESTED ADAPTATIONS IN ASSESMENT

- Oral testing
- Audio recording
- A person writing or recording with learners instructions
- Use of computer
- More time

The target **learner** here is one with difficulties in writing.

NOTE: Deviations in levels of accuracy and time allocation should be allowed based on the individual learners' physical limitations (KNEC to workout modalities of fixing time).