



KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

LOWER PRIMARY GRADE 1, 2 AND 3 CURRICULUM DESIGN

Mathematical activities

FOR

LEARNERS WITH PHYSICAL IMPAIRMENT

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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 contains the National Goals of Education, outlines the Early Years Education (EYE), subject general and specific learning outcomes. It also suggests a variety of learning experiences, assessment, resources and links the topics to values, Pertinent and Contemporary Issues (PCI) and to other subjects.

It is my hope that all educators in Early Years Education level will anchor their delivery of Basic and Teacher education on these Curriculum Designs.

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National Goals of Education

The Framework will be anchored on the National Goals of Education.

Education in Kenya should:

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 harmonious co-existence.

2. Promote social, economic, technological and industrial needs for national development

Education should prepare the learner to play an effective and productive role in the nation.

a) Social Needs

Education should instil social and adaptive skills in the learner for effective participation in the family, community, national, regional and international 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 develop in the learner necessary competences for technological and industrial development for the nation in tandem with global trends.

3. Promote individual development and self-fulfilment

Education should provide an opportunity 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 Kenya 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 for learners with special educational needs and disabilities. Education should also provide the learner with opportunities to develop and practice shared responsibility and accountability through community service learning.

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

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

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

Kenya is part of the interdependent network of diverse peoples and nations. Education should empower the learner to respect, appreciate and participate in the opportunities within the international community. Education should also enable the learner to operate within the international community with full knowledge of the obligations, responsibilities, rights and benefits that this membership entails.

8. Promote positive attitudes towards good health and environmental protection

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

Core Competencies for Basic Education

Sessional Paper No. 2 of 2015 on 'Reforming Education and Training in Kenya' recommends a reformed curriculum that adopts a competency based approach. This is also recommended by the EAC Curriculum Harmonization Structures and Framework. A competency based approach enables meaningful connections within and between subject areas through a focus on competencies. Subjects and Subjects will continue to be taught and will be the vehicles through which the core competencies are developed over time.

n view of the different interpretations of the meaning of a competency based curriculum, and specifically for basic education, the Framework provides clarity on the concept itself and also how the curriculum will be designed, implemented and assessed.

In the context of the Kenyan Competency Based Curriculum (KCBC), competency will be understood as ‘the ability to apply appropriate knowledge and skills to successfully perform a function’. Within this context, the curriculum will be designed to emphasize the importance of not only developing skills and knowledge but also applying these to real life situations. The integration of **pertinent and contemporary issues** and **service learning** into the framework will provide the opportunity for learners to develop and apply their skills and knowledge, or in other words, their competencies.

Based on the Needs Assessment Study carried out by KICD, and the vision and mission of the BECF, the seven core competencies to be achieved by every learner in basic education are:

1. Communication and Collaboration
2. Self-efficacy
3. Critical Thinking and Problem Solving
4. Creativity and Imagination
5. Citizenship
6. Digital Literacy
7. Learning to Learn

The Framework seeks to develop these competencies so that all Kenyans can thrive in the 21st century.

Communication and Collaboration

Communication is the act of transferring information from one place to another, whether vocally, visually, or non-verbally. The discipline of communication focuses on how people use messages to generate meanings within and across various contexts, cultures, channels, and media. The discipline promotes the effective and ethical practice of human communication.

Spitzberg (1988) defines communication competence as the ability to interact well with others in terms of accuracy, clarity, comprehensibility, coherence, expertise, effectiveness and appropriateness. On the other hand Friedrich (1994) suggests that communication competence is best understood as "a situational ability to set realistic and appropriate goals and to maximize their achievement by using knowledge of self, other, context, and communication theory to generate adaptive communication performances."

In this respect, it can be argued that being able to communicate effectively as intended is the most important of all life skills. How well information can be transmitted and received is a measure of how good our communication skills are. Developing communication skills helps in all aspects of an individual’s life.

Parks (1985) maintains that communicative competence can effectively be measured by determining if, and to what degree, the goals of interaction are achieved. He emphasizes three interdependent themes: control, responsibility, and foresight; and argues that to be competent, learners must not only 'know' and 'know how,' but rather they must also 'do' and 'know that we did'. He defines communicative competence as the degree to which individuals perceive they have satisfied their goals in a given social context without jeopardizing their ability or opportunity to pursue their other subjectively more important goals.

A useful framework for understanding communication competence was designed by Spitzberg and Cupach (1984). They propose a model that can be used to understand communication referred to as the component model of competence. The model asserts that communication competence is mutually defined by the interdependency of the cognitive component (concerned with knowledge and understanding), the behavioural component (concerned with behavioural skills), and the affective component (concerned with attitudes and feelings about the knowledge and behaviours) by interactions in an interpersonal encounter within a specific context.

This then implies that education at each level should endeavour to enhance the learner's acquisition of effective communication skills through which they can interact and express themselves during the learning process. In this respect, it would be prudent to be cautious when deciding on the language to be used as a medium of instruction at the early year's education level. It is also important to take cognizance of appropriate modes of communication for learners with special educational needs.

Collaboration is the process of two or more people or organizations working together to realize shared goals. Collaboration may require leadership, although this can be social within decentralized or egalitarian groups or teams that work collaboratively in relation to gaining greater resources, recognition and motivation. Strategies for effective communication enhance the attainment of greater collaboration among groups that ultimately increase the success of teams as they engage in collaborative problem solving. Collaboration is also present in opposing goals exhibiting the notion of adversarial collaboration, though this is not a common case for using the word. Collaborative learning is a system in which two or more people co-operate in a learning experience to share and contribute to each member's understanding of a topic and to complete a given task. Collaborative learning is designed to help learners learn from each other and can be an important aspect of the school curriculum. Lesson plans for collaborative learning may vary greatly. Sometimes teachers will build a lesson designed specifically to teach collaborative learning and teamwork. There are many team building games and activities that can be done in a classroom that force learners to work together to complete a task. Other collaborative learning exercises are designed around a particular school subject. For instance, in a speech class, a teacher might put learners up into teams and have them work together to make a presentation on a subject together. In this scenario, learners can learn just as much as if they were developing a presentation on their own, but they get the added benefit of learning how to collaborate.

Self-efficacy

Self-efficacy is a person's belief about his or her capabilities to perform tasks or assignments that can change and transform his or her life. It determines how the person feels, thinks, behaves and motivates themselves. Self-efficacy has the potential to determine four major processes namely cognitive, motivational, affective and selection processes.

A strong sense of self-efficacy enhances a learner's accomplishment and personal well-being in many ways. Learners with high assurance in their capabilities approach difficult tasks as challenges to be mastered, rather than as threats to be avoided. Self-efficacy fosters intrinsic interest and deep engrossment in activities. Learners set themselves challenging goals and maintain a strong commitment to them.

Self-efficacy as a competence will enable learners to develop and nurture intra-personal skills and values such as self-awareness, self-esteem, confidence and personal integrity. These competencies will enhance the learner's ability to heighten and sustain efforts in the face of failure and effectively manage stressful situations. A learner with a strong sense of self-efficacy will be courageous and bold enough to set and pursue personal educational, family, community, entrepreneurial, professional, and career goals in all forms of employment that will lead to personal accomplishment (British Council, 2016). An efficacious learner will be aware of the resources at their disposal and will take personal responsibility for the use, care, management, protection and preservation of these resources.

A learner with strong self-efficacy will be internally motivated to establish and maintain healthy interpersonal relationships. They will demonstrate interpersonal relationship skills such as assertiveness, empathy, effective communication, negotiation skills, non-violent conflict resolution skills and peer pressure resistance skills. Creative and critical thinking that leads to effective decision making and problem solving is based on a strong sense of self-efficacy (British Council, 2016). Capacity building of teachers and parental engagement are two crucial factors that would determine acquisition of self-efficacy. The school will be expected to provide opportunities for parents to be empowered and engaged in the affairs and welfare of their children's education.

Critical Thinking and Problem Solving

An important outcome of quality education is teaching learners how to think critically. The British Council (2015) identifies three types of thinking: reasoning, making judgements, and problem solving. It is possible for learners to reason in an uncritical way. When learners are empowered with critical thinking, they avoid being subjective, and use logic and evidence to arrive at conclusions. Critical thinking also facilitates exploring new ways of doing things and learner autonomy. Learners learn that for every issue there are multiple perspectives that they can explore, rather than a rigid recall and regurgitation of information.

Critical thinking is important for lifelong learning. It helps learners to have an open mind and be ready to listen and appreciate information and opinions that may sometimes conflict with their earlier held beliefs and positions. Critical thinking and problem solving are useful for learners of all ages and in all the subjects and disciplines offered in the basic education curriculum. For example, in the sciences learners need to think critically about observations and patterns to develop ideas on how to solve problems. These competencies are also important for solving problems in their lives and communities, and will ultimately help them to fulfil their potential, which is the vision for the basic education curriculum. This will contribute to addressing the unemployment challenge in Kenya.

Critical thinking and problem solving will be developed through age appropriate activities and programmes in the school curriculum. For example, at pre-primary school level learners can be asked to come up with the best ways of using and keeping their books, stationery and other personal items safe. At the other end of the basic education spectrum, learners can be asked to come up with the best ways of addressing the challenge of scarce resources such as water in the school and community.

Creativity and Imagination

Creativity and imagination refers to the ability to form new images and sensations in the mind, and to turn them into reality (British Council, 2016). It is the ability to imagine things that are not real, to form pictures in the mind of things that one has not seen or experienced, and turn those pictures into real things. It also refers to the act or power of forming mental images of things that are not present to the senses, or that are never wholly perceived in reality, and creating physical representations of those images. Imagination only exists or happens in the mind, and it remains in the mind. Creativity and imagination on the other hand, is characterized by the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena, and to generate solutions. It is a phenomenon whereby something new and valuable is formed.

In educational terms, creativity and imagination refers to the ability of learners and their teachers to form images and ideas in their minds, and turn them into real, visible creations. Learners who are imaginative and creative are able to make life interesting for themselves and others around them. They are able to use the knowledge, skills and values acquired in the learning process to create new ideas that result in products that add value to their lives and to the lives of others around them. The competence based curriculum recognizes this hidden ability in learners. It will therefore, inspire learners' imagination by presenting knowledge in ways that encourage learners to think as individuals. It will create scenarios that help learners to engage in imagination and encourage them to develop creations steered by the imagination. Their ability to imagine will be stretched through exposure to challenging situations that help to expand their thinking and creativity skills. The curriculum will also create room for innovative ways of teaching as well as creating an environment conducive to learning that offers all learners opportunities to explore their full potential in and through creativity and imagination.

Citizenship

Historically, human beings have always formed communities based on a shared identity. Such identities are forged in response to a variety of human needs, which might be economic, political, religious or social. As group identities grow stronger, those who hold them in commonality with others organize themselves into communities, articulate their shared values, and build governance structures to support their beliefs. The individuals in these communities identify themselves as citizens.

Citizenship is the state of being vested with the rights, privileges, and duties of a citizen. It creates a sense of belonging and attachment to one's nation. A sense of citizenship helps to equip young people to deal with situations of conflict and controversy knowledgeably and tolerantly. They are able to understand the consequences of their actions, and those of the adults around them.

Global citizenship is a way of living which recognizes that our world is an increasingly complex web of connections and interdependencies. One in which our choices and actions may have repercussions for people and communities locally, nationally or internationally. It nurtures personal respect and respect for others, wherever they live. It encourages individuals to think deeply and critically about what is equitable and just, and what will minimize harm to our planet.

Digital Literacy

Digital literacy can be described as having the knowledge, skills and behaviours which are necessary to effectively and safely use a wide range of digital content and devices. Such devices include mobile phones, smart phones, tablets, laptops and desktops among others. All these fall within the category of network enabled devices. Digital literacy focuses mainly on network enabled devices and should not be confused with computer literacy skills. However, traditional forms of literacy and computer literacy are enhancers in the acquisition of digital literacy skills.

Individuals are presumed to be digitally literate if they possess a broad range of digital skills and knowledge, and have a basic understanding of the potential uses of computing devices. Digital literacy skills also include being able to use computer communication networks, being able to engage in online communication and social networks, being aware of and adhering to ethical behaviour protocols, being aware of societal issues raised through digital media, and being able to search, evaluate and use information channelled through digital platforms. Furthermore, the digital literate individual should also have the ability to safely and securely use technology while being able to assess the nature of the information acquired in order to support and enhance the environment (British Council, 2015). Digital literacy as a competence therefore encompasses knowledge and skills concerning the appropriate application of a variety of hardware platforms such as computers, tablets and mobile devices, and their software including but not limited to web search or internet application software. Digital literacy is a dynamic competence due to the fast-changing world of information communication technology and the ongoing development of technological devices as well as their related software. This is an area in which there is constant innovation and development as the industry attempts to keep up with a globally increasing demand for efficient and effective

communication technologies.. Currently, digital literacy is considered as one of the main core competencies for learning and life in the 21st century. It challenges existing thinking and practice while leading to a more innovative, creative and often transformational learning.

Learning to Learn

Learning is a continuous process that begins at birth and continues until death; it is the process through which we use our experience to deal with new situations and to develop relationships. As a concept, it involves far more than thinking as it incorporates the whole personality – senses, feelings, intuition, beliefs, values and will. If we do not have the will to learn, we will not learn and if we have learned, we are actually changed in some way. If the learning makes no difference it can have very little significance beyond being random ideas that float through our consciousness.

Learning to learn is the ability to pursue and persist in learning, to organise one's own learning by the effective management of time and information, both individually and in groups. This competence includes awareness of one's learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully. This competence means gaining, processing and assimilating new knowledge and skills as well as seeking and making use of guidance. Learning to learn helps learners to build on prior learning and life experiences in order to use and apply knowledge and skills in a variety of contexts. There are four pillars of learning: Learning to know, learning to do, learning to be and learning to live together.

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, polio –myelites ,Osteogenesis 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 suggested assessment.

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.

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

Subject Learning Outcomes

- 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 MATHEMATICS

Strands and Sub-strands/Topic/Theme	Specific Learning Outcomes (KSA)	Suggested Learning Experiences (Align to the level of competency descriptors)	Key Inquiry Questions
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<p>1.0 Numbers</p> <p>1.1 Number concept</p> <p>20 lessons</p>	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Identify different types of objects according to their different attributes</p> <p>b) Sort and group objects within the environment</p> <p>c) Pair and match objects within the environment</p> <p>d) Order objects according to size in the environment</p> <p>e) Name numbers 1-50 for 2 number recognition</p> <p>f) Represent numbers 1-50 using concrete in daily activities.</p> <p>g) Apply number concepts in day to day life</p> <p>h) Appreciate the use of sorting and grouping in day to day activities</p>	<ul style="list-style-type: none"> • Learners could be encouraged to cooperate as they learn in groups and the qualities of leadership displayed as they take turns. • Learners could go outside the classroom and collect different types of objects. The learner should be guided on the safety of the objects. Learner with mobility difficulty could be provided with objects or use assistive devices • In pairs/ groups, Learners could put objects with same attribute together • Learners could pair objects in two groups (to establish equal, more than and less than). Learner with fine motor difficulty could be assisted by peers • Learners could order objects according to size from smallest to biggest or vice versa. Learner with fine motor difficulty could be assisted by peers (CP) • Learners to say/identify number names up to 5. Learners with articulation problems could listen to others. They could point at numbers on charts or number cards 	<ol style="list-style-type: none"> 1. How can you group different objects? 2. How can we find out which group has more objects than another? 3. How can we arrange objects of different sizes?
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		<ul style="list-style-type: none"> • Inpairs or small groups, Learners could represent numbers 1-50 using concrete objects as well as their body parts • Learners to show that any given group has only one count. • Learners to be organised in groups and discuss type of litter in the school compound. Let the learners collect a part of this litter, sort it and put it in various groups according to an attribute of their choice.(provide extra time to learner with mobility difficulty tocomplete task at hand) Let them explain how they have done it. • Organise learners in pairs/groups to assist in arranging items in the classroom Learner with fine motor difficulty could be assisted by peers) • Plan to take your learners to a market place for them to see the sorting and grouping of fruits, cabbages, tomatoes etc. and explain the meaning in terms of costLearner with mobility problems be provided mobility 	
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		devices and assistance of teacher aid	
Core-Competence to be developed; Learning to learn, <i>Communication and collaboration, imagination and creativity, Citizenship,</i> Critical thinking and problem solving; <i>When ordering and pairing</i>			
Link to PCIS and Values: Life skills (self-awareness when using body parts) ESD: DRR; Safety when collecting items and litter in the environment; environmental awareness; don't litter the environment Safety and health education Don't litter environment		Link to Values: Responsibility, unity	
Links to other subject: Environmental activities, religious activities, Language activities		Suggested Community Service learning activities: Assist in collecting and sorting litter in their locality and observe as how it is disposed	
Suggested Non-formal activity to support learning: 1. Tree planting in the school. Count trees in their homestead, assist in collecting litter in their locality and observe as its disposed by their counties		Suggested assessment: Oral questions, observation	
Suggested resources: different types/ sizes of objects Assistive devices- Mobility, orthotic, prosthesis devices, teacher aids, Physiotherapy(P.T)/ Occupational therapy(O.T), Speech Therapy services			

SUGGESTED FORMATIVE ASSESSMENT

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Learner can identify objects, sort and group objects, match and pair objects, order objects, name and represent 1-50 and beyond	Learner can identify objects, sort and group objects, match and pair objects, order objects, name and represent 1-50	Learner attempts to identify objects, sort and group objects, match and pair objects, order objects, name and represent 1-50 with assistance	Learner have to identify objects, sort and group objects, match and pair objects, order objects, name and represent 1-25
Strands and Sub-strands/Topic/Theme	Specific Learning Outcomes (KSA)	Suggested Learning Experiences (Align to the level of competency descriptors)	Key Inquiry Questions
NUMBERS 1.2 Whole Numbers 25 lessons	By the end of the sub strand the learner should be able to: <ol style="list-style-type: none"> a) Count numbers 1-100 for number recognition b) Recognize place value of tens and ones in readiness to number operation c) Read numbers 1-50 in readiness to number writing d) Write numbers 1-50 in symbols for number recognition e) Write numbers 1-10 in words for reading readiness 	<ul style="list-style-type: none"> • Learners could be encouraged to cooperate as they learn in groups and the qualities of leadership displayed as they take turns. • Learners to take turns in counting in 1's forward and backward up to 20Learner with speech difficulty could listen. • Learners in groups /pairs to count using a number lineLearner with speech difficulty could point number • Learners to take turns in counting in 2's forward up to20using body parts(provide speech therapist, Learner with missing limbs count along side with peers 	<ol style="list-style-type: none"> 1. In how many ways can we count from 1-20? 2. How do we count on the number line?

	<p>f) Fill in missing numbers in number patterns upto 20 in problem solving</p> <p>g) Appreciate the use of number patterns in daily activities</p>	<ul style="list-style-type: none"> • Learners to take turns in counting in 5's forward up to 50 Learner with speech difficulty could listen or point numbers on number cards • Learners to take turns in counting in 10's forward up to 100 Learner with speech difficulty could listen or point/hum at numbers on number cards • Learners in groups play games of representing numbers 1-50 using concrete objects Learner with fine motor difficulty could observe others play games • Learners to be asked to collect more than 20 objects from outside the classroom and then say the place value of the two digits. Learner with mobility difficulty could be assisted by peers) The teacher should explain the safety of this materials • Learners in pairs to recite numbers 1-50 Learner with speech difficulty could point numbers on number cards • Learners to practice writing or pointing or picking correct number card 1-50 in symbol 	
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		<ul style="list-style-type: none"> • Learners to practice writing numbers 1-10 in wordsLearnerswith grip and release difficulties could use thick pencil to write or spell words orally • Learners in pairs come up with patterns with numbers up to 20 and share with other groups • Organise learners to play a game where a group comes up with a pattern with missing numbers and other groups compete on which group can get the correct answer Learner with speech and mobility could observe games • In pair/ groups, learners to mark out patterns on school paths using arbitrary units. Learner with mobility difficulty could be assisted by peer and teacher aid 	
<p>Core-Competence to be developed Communication and collaboration as they work in groups/ pairs Critical thinking and problem solving as they count numbers Imagination and creativity as they make patterns</p>			
<p>Link to PCIS Life skills: self-awareness and self-esteem; when using body parts ESD: DRR; Safety when collecting items and litter in the environment; Guide learners on selecting and handling materials safely; environmental awareness; don't litter the environment.</p>		<p>Link to values: Responsibility , unity</p>	
<p>Links to other subjects</p>			

<ul style="list-style-type: none"> • Environmental activities • Religious activities • Language activities 	Suggested Community Service learning activities: Count number of animals, people, family members, buildings in homestead
Suggested Non formal activity to support learning: count number of animals, people, family members and buildings in homesteads	Suggested Assessment: discussion, question and answers, observation.
Suggested Resources: Speech therapist, assistive device teacher aides, head pointer Thick pencils or improvised pencils	

SUGGESTED FORMATIVE ASSESSMENT

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Learner can identify place value of tens and ones, read and write 1-50 in symbols, write 1-10 in words fill in missing numbers and beyond	Learner can identify place value of tens and ones, read and write 1-50 in symbols, write 1-10 in words fill in missing numbers	Learner attempts to identify place value of tens and ones, read and write 1-50 in symbols, write 1-10 in words fill in missing numbers	Learner have challenges identify place value of tens and ones, read and write 1-50 in symbols, write 1-10 in words fill in missing numbers

Strand/Sub-Strands	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Numbers 1.3 Addition of whole numbers	By the end of the sub strand the learner should be able to: a) Identify objects in activities of putting together in the environment	<ul style="list-style-type: none"> • Learners could go out to collect safe objects to assist in the activity of putting together. Learners with mobility difficulties to be assisted by peers or teachers aides to go out 	1) How do you get a total of two separated group of objects? 2) How do you use a number line in adding numbers?

25Lessons	<p>b) Apply the usage of + and = sign in writing an addition sentence</p> <p>c) Carry out addition of numbers with a sum not exceeding 100 in daily activities</p> <p>d) Recognize number patterns involving addition of whole numbers upto 100</p> <p>e) Appreciate use of number patterns for problem solving in daily life</p>	<ul style="list-style-type: none"> • Learners to work in pairs/groups to put objects together(provide assistive devices) • Learners to be guided on the writing of + and = signs in additional sentences • Learners could be guided on adding 2 single digit-numbers by skipping on a number line • Learners could add 2 single digit numbers by making a 10 • Learners could add 2 single digit number by counting on • Learners could add 3 single digit numbers by using a number line • Learners could add 3 single digit numbers by counting on • Learners could add 3 single digit numbers by making a 10 • Learners could add a 2 digit number to a 1 digit without regrouping vertically with a sum not exceeding 100 • Learners could add a 2 digit number to a 1 digit number without regrouping horizontally with sum not exceeding 100 • Learners could add a 2 digit number to 1 digit number without regrouping by counting on with sum not exceeding 100 • Learners could add multiples of up to a 100 vertically up to 100 • Learners could make patterns of numbers involving addition up to 100 	<p>3) How do you add a 3 single digit numbers</p> <p>4) How do you add a 2 digit number to a 1 digit number?</p> <p>5) How can you get a missing number in an addition pattern?</p>
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Core-Competence to be developed: Communication and collaboration (working in pairs/groups), critical thinking and problem solving in making a 10 and counting on also in making pattern	
Link to PCIs: Safety in handling objects Link to other subjects	Links to values: CO OPERATION
Link to other subjects: - Psycho motor and creative activities Language activities Suggested Resources: Number lines, Body parts, counters, assistive devises physiotherapists orthopaedic therapists, teacher's aide	Suggested Community Service learning /Non-formal activity to support learning through application Working out totals of item at home and also in school
Suggested Non formal activity to support learning: games and sports	Suggested Assessment: questions and answers, observations
SUGGESTED RESOURCES: number line, body parts, counters	

SUGGESTED FORMATIVE ASSESSMENT

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Learner can identify objects, use + and = in addition sentences, carry out addition with sum not exceeding 100, recognise patterns of up to 100 and beyond	Learner can identify objects, use + and = in addition sentences, carry out addition with sum not exceeding 100, recognise patterns of up to 100	Learner attempts to identify objects, use + and = in addition sentences, carry out addition with sum not exceeding 100, recognise patterns of up to 100	Learner have challenges to identify objects, use + and = in addition sentences, carry out addition with sum not exceeding 100, recognise patterns of up to 100

Strand and Sub-Strand	Specific Learning Outcome	Suggested Learning Outcomes (aligned to the level competency descriptors)	Key Inquiry Questions
Numbers 1.4 Subtraction 20 lessons	<p>By the end of the sub strands the learner should be able to:</p> <p>a) Play number games involving taking away using concrete objects in readiness to solving subtraction problems</p> <p>a) Recognize the minus sign as a symbol for taking away</p> <p>b) Subtract upto 2-digit numbers in real life situation</p> <p>c) Explain the relationship between addition and subtraction in problem solving</p>	<ul style="list-style-type: none"> • Collaborate in playing games of subtraction using concrete objects. learners with mobility difficulties to be assisted by peers or teacher aides to go out and collect objects • Learners could go out to play a game involving subtraction that leads to introduction of minus sign. Learners with mobility difficulties could be assisted by peers or teacher aide • In pairs learners come up with different modes/ways of subtracting single digit numbers then the teacher harmonizes by introducing subtraction by counting backwards • Learners come up with suggestions on how to skip on number line as a mode of subtraction (relating to previous related addition activity) 	<ol style="list-style-type: none"> 1) When playing a game and someone loses, what happens? 2) What activities can we do to show/demonstrate subtractions? 3) How can we workout the following questions? 4) How can we skip on number line to demonstrate take away? 5) How can we solve the following problems? E.g. $12 - 4 =$ (non routine) or I have 12 pencils, I give Mary 4 pencils. How many am I left with?(routine) 6) Which other mathematical sentences can we develop from e.g. $11 - 4 = ?$

	<p>d) Create meaningful patterns involving subtraction for enjoyment</p> <p>e) Appreciate playing games involving subtraction in day to day living</p>	<ul style="list-style-type: none"> • Learners solve routine and non-routine problems involving subtraction of upto 2 digit numbers based on basic addition facts • Learners formulate questions relating to subtraction within basic addition facts with support of the teacher • i) Learners use tablets (adaptation of furniture to suit learners with body posture problems)in/outside class to workout subtraction of multiples of 10 up to 90 • ii) outdoor activity – in absence of tablets so that learners can bundle small sticks(provide assistive devices and extra time) • Learners in groups/pairs create meaningful subtraction patterns (using prior knowledge in addition patterns)(provide extra time) 	<p>7) h) How can we develop a takeaway pattern (relating to addition done?)</p>
<ul style="list-style-type: none"> • Core-Competence to be developed: Communication and collaboration as they work in pairs/ groups • Critical thinking and problem solving as they carry out subtraction • Digital literacy • Creativity and imagination as they create meaningful patterns • Citizenship • Self efficacy as they use body parts 			

<ul style="list-style-type: none"> • Link to PCIs: Guide learners to collect concrete objects that are safe • Can borrow calculators/phones at home to continue with electronic calculations • Learners to be advised to pick only dead wood/sticks as counters 	Links to values: unity
<ul style="list-style-type: none"> • Link to other Subjects: Environmental Acts • Language Acts • Religious Acts 	Suggested Community Service learning Activities: <ul style="list-style-type: none"> • Remove dangerous things from environment
Suggested Non formal activity to support learning: games and sports	Suggested Assessment: discussion, observation, questions and answers
Suggested Resources: Sticks counters, abacus, number line, parts of the body adapted furniture, extra time	

Assessment Rubrics

Exceeds Expectations	Meets Expectations	Approaching Expectations	Below Expectations
Subtracts using concrete objects, use subtractions sign (-) to write subtraction sentences, subtract single digit numbers, subtracts of up to two digit numbers based on basic addition facts, relates addition and subtraction	Correctly, subtracts using concrete objects, subtracts using concrete objects, use subtractions sign (-) to write subtraction sentences, subtract single digit numbers, subtracts of up to two digit numbers based on basic addition facts,	Inconsistently, subtracts using concrete, subtracts using concrete objects, use subtractions sign (-) to write subtraction sentences, subtract single digit numbers, subtracts of up to two digit numbers based on basic addition facts,	Major inaccuracies subtracts using concrete objects, use subtractions sign (-) to write subtraction sentences, subtract single digit numbers, subtracts of up to two digit nos based on basic addition facts, relates addition and subtraction

involving basis addition facts, subtracts multiples of 10 from up to 90 and number patterns up to 100 and beyond	relates addition and subtraction involving basis addition facts, subtracts multiples of 10 from up to 90 and number patterns up to 100	relates addition and subtraction involving basis addition facts, subtracts multiples of 10 from up to 90 and number patterns up to 100	involving basis addition facts, subtracts multiples of 10 from up to 90 and number patterns up to 100
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Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
2.0 Measurement 2.1 Length 10 lessons	By the end of the sub strands the learner should be able to: a) Identify objects of different lengths within the environment b) Compare length of objects in the immediate environment c) Measure length using arbitrary units in day to day living d) Appreciate the use of arbitrary units in measuring length	<ul style="list-style-type: none"> • Learners could collect safe objects to be used in direct comparison of length. Learners with neurological muscular skeletal impairments to be assisted by teacher aides and peers • Learners to work in pairs/groups to compare objects directly to identify objects which are longer than, shorter than or taller 	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?

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		<p>than, same as(provide assistive devices)</p> <ul style="list-style-type: none"> • Learners to identify objects which are longer than, shorter than or same as • Learners should be involved in placing objects of equal length in different positions and describe them using words such as same as, equal to • Learners could measure the chalkboard in pairs/groups using various objects(provide assistive devices) • Learners could discuss about the results from various groups 	
<p>i) Link to PCIs: Health education (appropriate size of safe materials), avoid littering the compound after group's activities)</p> <p>ii) Citizenship (working in groups creates honesty, cohesion)</p> <p>iii) Life skills (working in groups)</p> <p>iv) Parental engagement and service learning (parental support)</p> <p>Education for sustainable development reusing materials e.g. in measuring objects using used objects e.g. old wood</p>		<p>Links to values: unity</p>	

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
	<ul style="list-style-type: none"> • Link to other subjects: • Environmental activities (collection of safe objects from the environment) • Language activities (language is used in groups/pairs) 	Suggested Community Service learning Activities: Planting trees /flowers using a stick to determine the distance between each seedling in religious institutions, dispensaries etc.	
	Suggested Non formal activity to support learning: games and sports.	Suggested Assessment: observations, discussion	
Suggested resources: Books, sticks, palms, pencils, strides rulers, strings Assistive devices – prosthesis, orthotic and mobility devices			

ASSESSMENT RUBRICS

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Compare length directly, conserve length and measure length using arbitrary units and beyond	Correctly compare length directly, conserve length and measure length using arbitrary units	Inconsistently compare length directly, conserve length and measure length using arbitrary units	Major inaccuracies Compare length directly, conserve length and measure length using arbitrary units

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
<p>MEASUREMENT</p> <p>2.2 Mass</p> <p>10 lessons</p>	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Identify objects of different of different mass in the environment</p> <p>b) Compare mass of different objects within the environment</p> <p>c) Measuring mass using arbitrary units in daily activities</p> <p>d) Appreciate the use of arbitrary units in measuring mass</p>	<ul style="list-style-type: none"> • Learners collect appropriate size of safe materials to use in the activity of comparing mass Learners with neurological muscular skeletal impairments to be assisted by teacher aides and peers • Learners work in pairs/groups with the materials collected to identify which one are: <ul style="list-style-type: none"> • Lighter than the other • Same as the other • Heavier than the other • Using two objects of equal mass, the learner changes the form of one of them severally to show that the change of form does not change mass • Learners to work in pairs/groups using same materials. Each group select a different material to use for comparing the mass of the others. 	<ol style="list-style-type: none"> 1) How can you compare the mass of two or more objects? 2) What do you do to show that form does not change mass? 3) How can you show one or more objects are heavier than same as, lighter than your math textbook?
<ul style="list-style-type: none"> • Core-Competence to be developed: Communication and collaboration in group work • Critical thinking and problem solving in measuring arbitrary units 			

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
<ul style="list-style-type: none"> • Self-efficacy – self-esteem in group work 			
Link to PCIs: learning to learn. <ul style="list-style-type: none"> • Safety in handling materials • Health education – appropriate size of materials • Citizenship – honesty 		Links to values: unity	
Links to other subjects: Environmental Activities, Language Activities, Music and movement and activities		Suggested Community Service Learning activities: Assist neighbours in feeding animals	
Suggested Non formal activity to support learning: games and sports		Suggested Assessment: Discussion, questions and answers and observations.	
Community Service: Helping in carrying light items e.g. seeds, water, and manure in community service			
Suggested Resources : Beam balance, books, stones, soil, water, containers Assistive devices: Prosthesis, orthotic and mobility devices			

SUGGESTED FORMATIVE ASSESSMENT

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Learner can identify objects of different mass, compare mass of different objects, measure	Learner can identify objects of different mass, compare mass of different objects, measure mass of different objects	Learner can identify objects of different mass, compare mass of different objects,	Learner can identify objects of different mass, inaccurately compare mass of different

mass of different objects and beyond		inaccurately measure mass of different objects	objects as well as measure mass of different objects
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Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT	2.3Time 8lessons	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Discuss vocabulary related to daily experiences</p> <p>b) Identify days of the week with routine activities</p> <p>c) Reciting months of the year for enjoyment</p> <p>d) Appreciate time management in daily routine</p>	<ul style="list-style-type: none"> • In pairs/groups learners to be guided in identifying activities they do in the morning, afternoon and evening both at home and school • i) Learners to sing/listen songs/ rhymes related to days of the week • ii) In pairs/groups learners to be guided in identifying activities that takes place during 	<ol style="list-style-type: none"> 1) What do you do in the morning, afternoon and evening? 2) Which day of the week do you raise the school flag? 3) Which day of the week do you worship? 4) When is your birthday?

			the days of the week • Learners to recite/ listen poems in pairs/groups related to months of the year	
<ul style="list-style-type: none"> • Core-Competence to be developed: • Communication and collaboration as they discuss • Self-efficacy as they discuss in groups • Citizenship as they discuss in groups and discussing when to raise the flag 				
Link to PCIs: Health education – brushing teeth, washing face, sleeping, meal		Links to values: co operation		
<ul style="list-style-type: none"> • Link to other subjects: • Language activities in discussion • Religious activities – days of worship 		<ul style="list-style-type: none"> • Suggested Community Service learning Activities: • Sweeping religious institutions during weekends • Visiting/helping the needy during school holidays Participating in religious activities in their community • Participating in religious activities in their community 		
Suggested Non formal activity to support learning: sports and games		Suggested Assessment: discussion, questions and answers		
suggested Resources Suggested resources: Charts with days of the week and months of the year in order				

SUGGESTED FORMATIVE ASSESSMENT

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
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Can discuss vocabulary related to time, identify days of the week, recite months of the year with ease	Can discuss vocabulary related to time, identify days of the week, recite months of the year	Attempt to discuss vocabulary related to time, identify days of the week, recite months of the year	Major inaccuracy in discussion of vocabulary related to time, identify days of the week, recite months of the year
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MONEY

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT	2.4Money 8 lessons	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Recognizing Kenyan currency in coins and notes up to ksh.50incarrying out shopping activities</p> <p>b) Use money to buy goods and services up to ksh.50</p> <p>c) Differentiate between needs and wants in day to day life</p> <p>d) Appreciate the use of money in buying goods and services</p>	<ul style="list-style-type: none"> • i) In pairs/groups/as individuals learners sort out Kenyan currency notes and coins according to their.....up to ksh.50 (different coins for sh.1) (copper, silver (small+big) sh.5 (pentagon, silver • Sh.10 – 1 • Sh.20 – 1 • Sh.40 – 1 • Sh.50 note • ii) Learners put coins together according to their value and the sh.50 note separately • Learners to discuss the value of items in the classroom shop up to ksh.50 	<ol style="list-style-type: none"> 1) What do we use in buying and selling? 2) Where do you buy things? 3) Where do you sell things? 4) How do we save money?

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
			<ul style="list-style-type: none"> • i) In pairs/groups learners discuss items/things they cannot do without and those that are necessary but they can do without them • In groups/whole class learners classify needs and wants • i) Learners could discuss the meaning of saving (keeping aside some money for future use) • ii) Learners could discuss the meaning of spending as (goods and services – needs and wants) • Learners could role play buying and selling items from the classroom shop 	
<p>Core-Competence to be developed: : Communication and collaboration, citizenship, Critical thinking and problems</p> <p>How achieved: working in groups, learners role play</p>				
Link to PCIs: : Financial literacy			Links to values: honesty	
Link to other subjects: :			Suggested Community Service learning Activities: :	

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Language activities, environmental activities ,religious activities, psycho-motor and creative acts			At home, learners to be send to buy and sell goods	
Suggested Non formal activity to support learning: games and sports.		Suggested Assessment: observations, discussion, questions and answers.		
Suggested resources: Our shop, prize list, real and imitation money				

SUGGESTED FORMATIVE ASSESSMENT

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Identify Kenyan currency in coins and notes and use money excellently	Identify Kenyan currency in coins and notes and use money	Attempts to Identify Kenyan currency in coins and notes and use money	Inaccurately Identify Kenyan currency in coins and notes and use money

GEOMETRY

Strand	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a)	Suggested Learning Experiences (align to the level competency descriptors)	Key Inquiry Question(s)

<p>3.0 GEOMETRY</p>	<p>3.1 LINES 6 lessons</p>	<p>By the end of the sub strands the learner should be able to:</p> <p>a) Identify straight and curved lines for drawing activities</p> <p>b) Draw straight and curved lines for learning</p> <p>c) Appreciate the use of lines in day to day activities</p>	<ul style="list-style-type: none"> • Learners could be guided to form groups and choose a leader and encouraged to cooperate and the qualities of leadership displayed. • The learners could be guided to stand/sit behind one another as they face the same direction and asked what they have formed. Learner with motor difficulty could be assisted by peers or teacher aid • Learners in pairs /groups to mark two points on the ground and then draw a line joining the two points using a stick to come up with a straight line. Learners with neurological and muscular impairments could be guided by peers and teacher aides. Learners to practice the safety as they draw the lines. • Learners practice drawing straight lines on the ground. Learner with fine motor difficulty could observe others as they draw • Learners in pairs/ groups could form a circle. They divide the circle into two equal parts to form a semi-circle. One of them to draw a line along the semi-circle 	<p>1. What types of lines are there?</p>
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			<p>formedLearners with neurological and muscular impairments could be guides by peers and teacher aides. Learners identify theshape as a curved line.</p> <ul style="list-style-type: none"> • Learners practice drawing/naming curved lines on the ground.Those with fine motor difficulties may be provided with thick or improvised pencils • Learners may arrange objects in straight or curved lines Learner with fine motor could be assisted by peers 	
<p>Core-Competence to be developed: Communication and collaboration ; as learners discuss how to draw the lines Learning to learn, critical thinking and problem solving, imagination and creativity</p>				
<p>Link to PCIs: Safety as they use sticks to draw</p>			<ul style="list-style-type: none"> • Link to values: : Unity, Responsibility <p>Love</p>	
<p>Links to other subject(s): Music and movement, Psycho-motor and creative activities</p>			<p>Suggested Community Service Learning/</p> <p>Learners could visit a local church and assist in arranging seats in straight or curved lines. They could direct and organize their peers in social gatherings.</p>	
<p>Suggested Non formal activity to support learning: sports and games</p>			<p>Suggested assessment: questions, answers, discussion and observation.</p>	

	Suggested Resources; Sticks, pupils, real objects Assistive devices :- prosthesis, orthotic, and mobility devices, Physiotherapy and occupational therapy services	

ASSESSMENT RUBRIC

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Correctly draws straight and curved lines and beyond	Correctly draws straight and curved lines	Inaccurately draws straight and curved lines	Major inaccuracies in drawing straight and curved lines

STRAND	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))	Suggested Learning Experiences (align to the level competency descriptors)	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) Identifying rectangles, circles and triangles within their immediate environment</p> <p>b) Make patterns using rectangles, circles</p>	<ul style="list-style-type: none"> Learners could form groups and choose a leader and encouraged to cooperate and the qualities of leadership displayed. The learners could sort and group shapes using one attribute. Those with neurological and muscular impairments could be assisted to sort and group by by peers and teacher aides 	1) What shape can you identify in your school?

		<p>and triangles for learning</p> <p>c) Appreciate the beauty of patterns in daily life</p> <p>NB: Learner with neurological, muscular skeletal impairment and health conditions require extra time to complete task</p>	<ul style="list-style-type: none"> • Learners in pairs /groups discuss the properties of the shapes in the various groups. Learner could discuss the properties further and gives names of the shapes. • Learners could identify and name the different shapes found in their classroom. • In pairs or groups, Learners practise making patterns of their choice using the three shapes. Learners with fine motor difficulties could be provided with shapes to manipulate. They could also observe their peers make patterns • Learners in groups make patterns, colour them • and compare with other groups. Learner with fine motor difficulty could be assisted by peers 	
<p>Core-Competence to be developed : Communication and collaboration , learning to learn , imagination and creativity as learners discuss and make how to make patterns</p>				
<p>Link to PCIs: Safety as they pick objects to trace and colour the patterns</p>			<ul style="list-style-type: none"> • Link to Values: Responsibility Unity 	

	Links to other subject(s): 1) Movement and creative activities, Environmental activities	Suggested Community Service Learning Learners could visit pre -school and decorate the walls using 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, observations
	Suggested Resources; Manila paper, crayons/ paint different shapes door, blackboard, plate, clock face, tetra-pack Assistive devices: prosthesis and orthotic devices	

Assessment Rubric

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Correctly identified shapes and makes patterns using rectangles, circles and triangles and beyond	Correctly identifies shapes and makes patterns using rectangles, circles and triangles	Inaccurately identifies shapes and makes patterns using rectangles, circles and triangles	Major inaccuracies in identification of shapes and making patterns using rectangles, circles and triangles

LOWER PRIMARY MATHEMATICS

GRADE 2

NUMBERS

Strand	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a)	Suggested Learning Experiences (align to the level competency descriptors)	Key Inquiry Question(s)
1.0 NUMBERS	1.1NUMBER CONCEPT 8 lessons	By the end of the substrand the learner should be able to: <ul style="list-style-type: none"> • Read numbers 1-100 in symbols for number recognition • Represent Numbers 1-100 using concrete objects in daily activities 	<ul style="list-style-type: none"> • Learners to say number names from 1-100 Those with speech difficulties could point at the numbers • Learners in groups of 5 count their fingers and toes. Those with missing limbs could use objects • Learners in pairs/groups play games of representing numbers 1-100 using concrete objects. The learner should be explained about the safety of the objects 	How can we find number of objects group?
-Competence to be developed; Communication and collaboration as learners discuss in groups				
Link to PCIs: 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 • Responsibility 	
Links to other subject(s): <ul style="list-style-type: none"> • Environmental activities Languages 1) Nutrition and Hygiene 			Suggested Community Service Learning/ Count trees, animals and buildings in their homestead	
Suggested Non formal Activity to support learning: Count number of different objects in the classroom			Suggested assessment: Oral questions, observation	
Suggested Resources: counters, charts, number cards, stones, bottle tops				

Assessment Rubric

Exceeding expectations	Meeting expectations	Approaching expectations	Below expectations
Learner can read and represent symbols 1-100 with ease	Learner can read and represent symbols 1-100	Learner can attempt to read and represent symbols 1-100	Learner rarely read and represent symbols 1-100

Strand	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))	Suggested Learning Experiences (align to the level competency descriptors)	Key Inquiry Question(s)
1.0 NUMBERS	1.2 WHOLE NUMBERS 20 lessons	<p>by the end of the sub strand the learner should be able to:</p> <p>a) Count numbers 1-100 for number recognition</p> <p>b) Identify place value hundreds in readiness for number operation</p> <p>c) Read numbers 1-100 in symbols in readiness to number writing</p> <p>d) Read numbers 1-20 in words</p>	<ul style="list-style-type: none"> Learners could be encouraged to cooperate as they learn in groups and the qualities of leadership displayed as they take turns Learners in pairs/ groups count in 2s forward and backward. One member points out the starting at any point. Learners in pairs/ groups count in 5s forward and backward. One member points out the starting at any point. Learners in pairs/groups count their fingers and toes in 2s forward and backward. One member points out the starting at any point. 	<ol style="list-style-type: none"> How many boy in this class? How many girl in this class? How many are in this class? How many are in your family?

		<p>e) Write numbers 1-20 in words</p> <p>f) Fill in missing numbers in number patterns up to 20</p> <p>g) Appreciate number patterns in daily activities.</p>	<ul style="list-style-type: none"> • Learners in pairs/groups count their fingers and toes in 10s forward and backward. One member points out the starting at any point. Those with missing could use alternative means • In pairs / groups learners discuss place value of digits in given numbers up to hundreds • In pair/ groups and with teachers guidance, learners compete reading numbers 1-100 in symbols • Learners read and write numbers 1-20 in words Those with speech difficulties could point the numbers. Those with difficult holding pencils could use thick pencils • Learners in pairs/groups make number patterns and share with other groups Learner with gross and fine motor difficulties could observe their peers as they make patterns 	
<p>Core-Competence to be developed; Communication and collaboration as learners discuss in groups</p>				
<p>Link to PCIs and Values: life skills as learners count their fingers and toes</p>			<p>• Links to values: Respect, Responsibility</p>	
<p>Links to other subject(s):</p> <ul style="list-style-type: none"> • Environmental activities ,Languages activities,Movement and creative activities 			<p>Suggested Community Service</p> <p>At home, learners practise counting and arranging utensils</p>	

	Suggested Non formal Activity to support learning: Plant flowers in patterns in school	Suggested assessment: Oral questions, portfolio, observati
	Suggested Resources: counters, objects, boys, girls, buildings ,body parts	

ASSESSMENT RUBRIC

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Learner can count, read symbols 1-100, identify place value up to hundreds, read and write 1-20 in words and fill in missing numbers with ease	Learner can count, read symbols 1-100, identify place value up to hundreds, read and write 1-20 in words and fill in missing numbers	Learner can attempt count, read symbols 1-100, identify place value up to hundreds, read and write 1-20 in words and fill in missing numbers	Learner rarely can count, read symbols 1-100, identify place value up to hundreds, read and write 1-20 in words and fill in missing numbers

FRACTIONS

Strand	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))	Suggested Learning Experiences (align to the level competency descriptors)	Key Inquiry Question(s)

<p>1.0 NUMBERS</p>	<p>1.3 FRACTIONS 12 lessons</p>	<p>By the end of the sub-strand the learner should be able to:</p> <p>a)Identifying $\frac{1}{2}$ as part of a whole</p> <p>b)Identifying a $\frac{1}{4}$ as part of a whole</p> <p>c)Cut out shapes into $\frac{1}{2}$ and $\frac{1}{4}$ for learning</p> <p>d)Appreciate sharing in real life situation</p>	<ul style="list-style-type: none"> • Learners in pairs /groups make circular cut- outs Learner with fine motor difficulty could be provided with cut outs. They could observe the peers making cut outs. • Learners in pairs /groups fold the circular cut – outs into two equal parts. The learner could be guided to identify the fraction $\frac{1}{2}$ as part of a whole. Learner with fine motor difficulty could be assisted by teacher aid • Learners in pairs /groups make rectangular cut – outs and fold them into two equal parts to get a half of a whole. Learner with fine motor difficulty could be provided with rectangular cut outs. They could be assisted to fold cut outs by peers • Learners in pairs or groups fold the circular cut – outs into two equal parts and then fold another time to get 4 equal parts .Each part is $\frac{1}{4}$ of a whole. Learner with fine motor difficulty could be provided with cut outs 	<ol style="list-style-type: none"> 1.What are examples of whole things in our daily life? 2. If two learners share a whole, how much each get? 3. How many halves were got from each whole? 4. How can you make $\frac{1}{2}$ from a circular paper cut – out? 5. How can you make $\frac{1}{4}$ from a circular paper cut – out?
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			<ul style="list-style-type: none"> Learners in pairs or groups make rectangular cut – outs and fold them into two equal parts and then fold another time to get 4 equal parts. Each part is a $\frac{1}{4}$ of a whole. Learner with fine motor difficulty could be provided with cut outs Learners in pairs or groups to practise making halves and quarters of a whole. 	
Core-Competence to be developed; Imagination and creativity as they fold papers to get fraction, communication and collaboration as they discuss				
Learning to learn				
Link to PCIs and Values: Life skills ;patience as they fold papers			Link to Values: Unity, Integrity, Responsib	
Links to other subject(s): Language activities Environment activities			Suggested Community Service Learners c share whole items in halves and quarters during community activities	
Suggested Non formal Activity to support learning: Sharing food in school			Suggested assessment: Oral questions, portfolio, observati	
Suggested Resources: Manila paper, modelled balls, papers, cartons Assistive devices such as prosthetic and orthotic devices				

Assessment Rubric

Exceeding expectations	Meets expectations	Approaches expectations	Below expectations
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Learner can identify $\frac{1}{2}$, $\frac{1}{4}$ as part of a whole with ease	Learner can identify $\frac{1}{2}$, $\frac{1}{4}$ as part of a whole	Learner attempts to identify $\frac{1}{2}$, $\frac{1}{4}$ as part of a whole	Learner rarely identifies $\frac{1}{2}$, $\frac{1}{4}$ as part whole
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ADDITION

Strand/Sub-Strands	a) Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
<p>Numbers /</p> <p>1.4 Addition</p> <p>20 lessons</p>	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Demonstrate an understanding of addition by working out addition of a 2 digit number to a 1 digit number without regrouping</p> <ul style="list-style-type: none"> • vertically • horizontally • by counting on • by using a number line <p>b) Demonstrate an understanding of addition by adding 3-single digit numbers up to a sum of 20</p> <p>c) Demonstrate an understanding of addition by working out addition of a 2-digit number to a 1-digit number with regrouping by:</p> <ul style="list-style-type: none"> • breaking a ten • counting on • vertically <p>d) Demonstrate an understanding of addition by adding a 2-digit number to a 2-digit number without and with regrouping, with sums not exceeding 100</p> <p>e) Workout missing numbers in number patterns involving numbers up to 100</p>	<ul style="list-style-type: none"> • i) In pairs, learners could arrange numbers vertically according to place value (ones and tens aligned together) • ii) a number line on the ground and with the guidance of the teacher practice addition by skipping on the number line 	<ol style="list-style-type: none"> 1. How can we align a 2-digit number and a 1-digit number vertically in order to add? 2. How can we add a 3-digit number? 3. How can we add 2-single digit number to make 10? 4. What is regrouping?

Strand/Sub-Strands	a) Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
	<p>f) Appreciate the use of numbers in day to day life. NB: learners with neurological, muscular skeletal impairment and health problems require extra time to complete tasks</p>	<p>who may not skip could observe others and count</p> <ul style="list-style-type: none"> • Learners could use counters in pairs/groups to solve mathematical statements involving 3-single digit numbers • In pairs/groups learners practice breaking numbers apart to make a pair 10. The learner could use the same method to addition of a 	

Strand/Sub-Strands	a) Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		<p>2-digit number to a 2-digit number by making a ten</p> <ul style="list-style-type: none"> • In pairs learners come up with different modes/ways of adding a 2-digit number to a 2-digit number with and without regrouping • Learners could be asked to work in groups in making patterns using numbers up to 100 	

Strand/Sub-Strands	a) Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Core-competencies: Communication and collaboration, Learning to learn, critical thinking and problem solving, In pairs or small groups learners practise addition of numbers			
Link to PCIs: ESD: DRR; -Collecting safe objects Citizenship: Social cohesion;- working in groups		Link to Values: <ul style="list-style-type: none"> • Respect • Responsibility • Unity 	
Links to other subjects <ul style="list-style-type: none"> • Environmental activities • Language activities • Movement/creative activities 		Suggested Community Service Learning activities: Visiting older citizens homes and assisting them on how to get the total number of different items in their homes	
Suggested Non formal Activity to support learning: Planting flowers in school		Suggested assessment: Oral questions, written exercises, observation	
Suggested resources: Counters, real objects abacus, body parts Learners could participate in flower planting in the community i.e. in churches, dispensary or chiefs camp			

SUGGESTED FORMATIVE ASSESSMENT

Exceeds expectations	Meets expectations	Approaches expectations	Below expectation
Learner can add 2-digit to 1-digit numbers without and with regrouping, add 3-digit numbers up to sum of 20 and	Learner can add 2-digit to 1-digit numbers without and with regrouping, add 3-digit	Learner attempts to add 2-digit to 1-digit numbers without and with regrouping, add 3-digit	Learner rarely can add 2-digit to 1-digit numbers without and with regrouping add 3-digit numbers up to sum of 20 and fill in missing numbers

fill in missing numbers with ease	numbers up to sum of 20 and fill in missing numbers	numbers up to sum of 20 and fill in missing numbers	
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SUBTRACTION

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Number	1.5 Subtraction 20 lessons	By the end of the sub strand the learner should be able to: Demonstrate an understanding of subtraction by: <ol style="list-style-type: none"> Subtracting up to 2 digit numbers without borrowing Subtracting up to 2 digit numbers involving missing numbers Working out missing number patterns up to 100 	<ul style="list-style-type: none"> Learners in pairs and groups do subtraction activities by: <ol style="list-style-type: none"> Comparing groups of objects Alignment of digits according to place value, and work out subtraction problems vertically and horizontally Learners could be guided to visualize and find missing numbers in subtraction sentences using a variety of ways such as number families Learners in pairs/groups discuss 	<ol style="list-style-type: none"> How can we make the following pairs of groups same? How can we align the following questions according to place value and work out their answers? How do you find missing numbers in a subtraction question?

		<p>d) Appreciate use of numbers in day to day life</p> <p>NB: Learner with neurological, muscular skeletal impairment and health problems require extra time to complete task</p>	<p>and create situations in familiar practical contexts that have missing subtraction sentences</p> <ul style="list-style-type: none"> Learner could be guided to discover the pattern by subtraction 	<p>4) In pairs discuss and come up with story problems involving missing subtraction</p> <p>5) How do you identify the missing number in pattern?</p>
<p>Core Competencies</p> <ul style="list-style-type: none"> Communication and collaboration – pair and group Self-efficacy – pair and group work Critical thinking and problem solving involving real life situation, number patterns and subtraction involving missing numbers Imagination and creativity – patterns, subtraction involving missing numbers 				
<p>Link to PCIs: education for sustainable development (ESD)-re-use materials and objects collected and collect litter in the environment. Health education by selecting safe and appropriate materials//objects</p>			<p>Link to values: Respect, Unity, Responsibility</p>	
<p>Links to other subjects</p> <p>Language activities</p> <p>Environmental activities</p>		<p>Community service</p> <p>Participating in community activities during the cleaning of environment</p>		
<p>Suggested Non formal Activity to support learning:</p> <p>Picking litter during school cleaning activities</p>		<p>Suggested assessment: Oral questions, written exercise , observation</p>		
<p>Suggested Resources: Counters, real objects, body parts</p>				

Assessment Rubrics

Exceeds Expectations		Meets Expectations		Approaching Expectations		Below Expectations	
Subtracts up to 2 digit numbers without regrouping, subtract up to 2 digit numbers involving missing numbers, and work out missing numbers in number pattern up to 100 and beyond		Correctly subtracts up to 2 digit numbers without regrouping, subtract up to 2 digit numbers involving missing numbers, and work out missing numbers in number pattern up to 100		Inconsistently subtracts up to 2 digit numbers without regrouping, subtract up to 2 digit numbers involving missing numbers, and work out missing numbers in number pattern up to 100		Major inaccuracies subtracts up to 2 digit numbers without regrouping, subtract up to 2 digit numbers involving missing numbers, and work out missing numbers in number pattern up to 100	
Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions			
NUMBERS	1.6 Multiplication 12 lessons	<p>By the end of the sub strand the learner should be able to:</p> <p>Demonstrate an understanding of multiplication by:</p> <p>a) Identifying division as repeated addition involving numbers 1, 2, 3, 4 and 5 up to five times (s)</p> <p>b) Using the 'x' sign correctly in multiplication sentences (k)</p>	<ul style="list-style-type: none"> Learners in pairs or groups, could be asked to put objects in 5 groups of 1 in each group to show $0+0+0+0+0$ Learners could be asked to put or objects in 2 groups of 3 each; that is $000+000$ In pairs/groups learners should be asked to put mathematics textbooks in 3 groups of 4 textbooks in each group 	<ol style="list-style-type: none"> If I wash four groups of three oranges each, how many oranges have I washed? Ann made five jumps each of two steps on the number line. How many steps did she jump altogether? If we do two exams each term, how many exams shall we do in one year? What is $3+3+3+3$? 			

		<p>c) Multiplying single digit numbers by 1, 2, 3, 4 and 5(s)</p> <p>d) Appreciate the use of number in daily living activities(a)</p> <p>NB: Learner with neurological muscular skeletal impairment require extra time to complete task</p>	<ul style="list-style-type: none"> • In groups learners could be assisted to make equal lengths upto 5 times using a number line. • Learners could write the results of the different repeated addition activities done earlier. The learner should be introduced to the “x” sign relating to repeated addition. • Learners should be taken to the local market to observe how items are arranged in groups/ piles. Learner with mobility difficulty could be assisted by teacher aid and peers • Learners could be asked to multiply single digit numbers by 1, 2, 3, 4, 5 using repeated addition 	
<p>Core competence</p> <ul style="list-style-type: none"> • Communication and collaboration as learners work in pairs and in groups • Imagination and creativity as learners arranges different groups of objects certain number of times • Self-efficacy as children air out their ideas and opinions out rightly 				

Links to PCIs Self-awareness Environmental conservation Education for sustainable development (ESD) Life skills	<ul style="list-style-type: none"> • Link to values: Respect, Responsibility
Links to other subjects <ul style="list-style-type: none"> • Language activities • Environmental activities • Creative arts/movement 	Suggested Community Service Learning activities: Visiting older citizens and assisting in arranging items in groups
Suggested Non formal Activity to support learning: Counting number of desks in classroom as repeated subtraction	Suggested assessment: Oral questions, written exercises, observation
Suggested resources: counters, mathematics textbooks	

SUGGESTED FORMATIVE ASSESSMENT

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Correctly does multiplication correctly as repeated addition uses multiplication sign, multiplies single digit numbers by 1, 2, 3, 4, 5 and goes beyond	Multiplies as repeated addition, uses multiplication sign, multiplies single digit numbers by 1, 2, 3, 4, 5	Inconsistently multiplies as repeated addition, uses multiplication sign, multiplies single digit numbers by 1, 2, 3,4 and 5	Has major inaccuracies in performing multiplication as repeated addition, using multiplication sign, multiplying single digit numbers by 1, 2, 3, 4 and 5

DIVISION

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Number	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) Identify division as equal sharing in daily life b) Share objects equally among groups in daily activities c) Appreciate sharing in day to day activities(a) d) NB: Learners with neurological, muscular skeletal impairment and other health conditions require extra time to complete the task 	<ul style="list-style-type: none"> • Learners in pairs/groups could share a given number of objects equally by each picking an object at a time until all are finished. The learners should then count how many each got. Learner with fine motor impairment could be assisted by peers to count • Work done should be displayed for reference 	<ol style="list-style-type: none"> 1. How do you make sure objects are shared equally? 2. How do you make sure the groups are equal?

Core Competencies				
Communication and collaboration, learning to learn, critical thinking and problem solving In pairs or groups learners practise sharing				
Link to PCIs		Link to Values: unity, Respect, Responsibility		
<ul style="list-style-type: none"> Life skills – ability to work in groups Parental engagement and service – parental support by provision of materials Health education – safe objects and of appropriate sizes 				
Links to other subjects		Suggested Community service		
<ul style="list-style-type: none"> Environmental activities Language activities		Learners to share seedlings amongst themselves equally to go and plant at home Learners to visit homes for the needy and share bananas and other fruits equally as they give back to the community		
Suggested Non formal Activity to support learning:		Suggested assessment: Oral questions, written exercises, observation		
Learners to plant seedlings in school				
Suggested assessment				
Suggested Resources :Pencils, books, bottle-tops, rulers				

Assessment Rubrics

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
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Correctly does division as equal sharing and goes beyond	Correctly does division as equal sharing	Inconsistently does division as equal sharing	Has major inaccuracies in doing division as equal sharing
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Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
2.0 MEASUREMENT	2,1 Length 6 lessons	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Measure length using fixed units in daily activities</p> <p>b) Identify the metre as a unit of measuring length</p> <p>c) Measure length in metres in day to day life</p> <p>d) Appreciate use of meter in measuring length.</p> <p>NB: Learner with neurological, muscular skeletal impairment and health conditions require extra time to complete task</p>	<ul style="list-style-type: none"> • Learners could be provided with sticks of equal length • Learners could be guided to estimate length before actual measuring • Learners to work in pairs/ groups to measure given lengths provide assistive devices to enable manipulation for learners with cerebral palsy, those with missing limbs • Learners to record the results • Learners to measure different areas using sticks of different length, one of the sticks should measure 1 metre • Learners could provide strings of 5 metre long with knots/marks at intervals of one metre to measure long distances. 	<ol style="list-style-type: none"> 1. What do we use to measure length? 2. How do we measure length? 3. How can we measure the height of learners? class?

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
			<p>The string should be marked after every one metre</p> <ul style="list-style-type: none"> Learners in pairs or groups use the metre sticks prepared earlier to measure various distances within the school compound. Learner with gross and fine impairment require extra time to complete the task Learners could record and report their findings 	

<p>Core competencies</p> <ol style="list-style-type: none"> Communication and collaboration – learners working in pairs/groups Imagination and creativity – displayed during production of metre sticks and measuring various objects Critical thinking and problem solving– discussion of varied results Self efficacy – group work brings self-esteem during discussion and communication 	
<p>Link to PCIs: Citizenship: Social cohesion- group work ESD:DRR; safety of materials</p>	<ul style="list-style-type: none"> Link to values: Respect Responsibility
<p>Link to other subjects</p> <ul style="list-style-type: none"> Environmental activities 	<p>Suggested community service: At home, learners practise measuring different lengths</p>

<ul style="list-style-type: none"> Language activities 			
Suggested Non formal Activity to support learning: Learners to length of their school fields during games		Suggested assessment: Oral questions, written exercises, observation	
<p>Suggested Learning Resources :sticks, chalkboard ruler, strings, books, strides chalk board, wall, tables,</p> <ul style="list-style-type: none"> Assistive devices such as wheel chairs, crutches, orthotic devices, prosthesis 			
Assessment Rubric			
Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Measure length using fixed units, identify metre as a unit of measuring length and measure length in metres and beyond	Correctly measure length using fixed units, identify metre as a unit of measuring length and measure length in metres	Inconsistently measure length using fixed units, identify metre as a unit of measuring length and measure length in metres	Major inaccuracies measure length using fixed units, identify metre as a unit of measuring length and measure length in metres

MASS

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT	2.2 Mass 6 lessons	By the end of the sub strand the learner should be able to: a) Identify objects of different masses within the environment	<ul style="list-style-type: none"> Learners could be guided to collect items to use in an activity of measuring mass Learner with mobility difficulty could 	<ol style="list-style-type: none"> How can you tell the mass of an item or items? How many grade two mathematics textbooks can make

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		b) Measure mass in kilogrammes for daily life activities c) Appreciate the use of kilogram as a unit of measurement NB: Learner with neurological, muscular skeletal impairment and health condition require extra time	be assisted by peers and teacher aid <ul style="list-style-type: none"> • In pairs or groups learners could select an item from their collection and use it to measure against other items using the beam balance • Learners could be provided with items equivalent to mass of a kilogram. In pairs/ groups they could use the mass to measure against other items • In pair/ groups, learner could use the mass provided to come out with an equivalent mass of 1kilogram • Learner to do further practice in measuring using 1 kilogram mass. They will identify many other items of a kilogram mass in and out of the classroom 	a mass of 1 kilogram? 3) Which three items in the classroom measure 1 kilogram 4) Which three item out of the classroom measure 1 kilogram?

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Core competencies				
1. Communication and collaboration in group work Critical thinking and problem solving in collection, selection and use of items in measuring mass				
Link to PCIs • Safety in handling learning materials			Link to values: Respect, Responsibility	
Link to other subjects Environmental activities Language activities			Community service Assisting in carrying light items from one place to another at home, in school and in community work Suggested resources: beam balance, textbooks, sand, stones, assistive devices for manipulation and mobility	
Suggested Non formal Activity to support learning: Learners to measure mass of items in their classroom during free time			Suggested assessment: Oral questions, written, observation	
Suggested resources: containers, water, sand				

Assessment Rubric

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Learner can identify different masses and measure mass in kilogram with ease	Learner can identify different masses and measure mass in kilogram	Learner attempts identify different masses and measure mass in kilogram with assistance	Learner can identify few objects of different masses and measure mass in kilogram with assistance

CAPACITY

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
<p>MEASUREMENT</p> <p>2.3Capacity</p> <p>8 lessons</p>	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Identify objects of different capacity in day today life</p> <p>b) Measure capacity in litres for comparison</p> <p>c) Appreciate the use of a litre as a unit of measuring capacity in daily life</p> <p>NB: Learner with neurological, muscular skeletal impairment and health conditions require extra time</p>	<ul style="list-style-type: none"> • Learners in pairs/ groups, could collect safe containers of different capacities for use in class Learner with fine motor difficulty could be assisted by peers and teacher aid • Learners could fill containers of different shapes with same capacity and for comparison • In pairs/ groups, Learners could fill in a gar/jug using a glass/ cup and count how many such glasses/ cups would fill in the gar/ jug Learner with gross an fine motor difficulty could be assisted by peers • Learners could work in groups/pairs to fill in a bucket using 1 litre container and identify how many litres are used to fill in the jug Learner with fine and gross motor difficulty could be assisted by peers • Learners could record their findings and identify litre as a unit of measurement • Learner could practice measuring capacity of different containers in litres. Learner with fine motor 	<ol style="list-style-type: none"> 1) How many small containers were used to fill in the big containers? 2) How many litres of water can this bucket hold? 3) How many I litre containers can be used to fill in the bucket?

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		difficulty could be assisted to measure by peers and teacher aid	
<p>Core Competencies: Critical thinking and problem solving – when learners use arbitrary units to measure capacity, Communication and collaboration as learners work in groups, Imagination and creativity as they collect and use different containers, Citizenship as they act ethically and responsibly in their groups while filling and emptying containers, Self-efficacy – learners develop self-esteem as they work in groups</p>			
<p>Link to PCIs: Safety and security as learners collect safe and appropriate containers, Education for sustainable development as learners re-use containers they used in measuring capacity, Service learning and parental engagement as learners engage parents in identifying and choosing safe containers, Life skills – interpersonal relationship as they work in groups, Citizenship displayed in groups while sharing and using containers</p>			
<p>Link to other subjects: Psychomotor and creative activities, language activities, Environmental activities</p>		<p>Suggested Community Service Learners take part in watering flowers and trees around the school, health centres and at home Learners could take part in watering animals in their community at their homes and in school</p>	
<p>Suggested Non formal Activity to support learning: Learners to measure of containers in their classroom during free time</p>		<p>Suggested assessment: Oral questions, written, observation</p>	

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Suggested resources: Gars, buckets, bottles, glasses, cups, sand, water, Assistive devices-prosthesis and orthotic devices and P.T(physiotherapy)/O.T(occupational therapy)			

Rubrics

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Measures capacity using fixed units, uses the litre as a unit of measuring capacity and measure capacity in litres correctly and beyond	Correctly measures capacity using fixed units, uses the litre as a unit of measuring capacity and measures capacity in litres	Inconsistently measures capacity using fixed units, uses the litre as a unit of measuring capacity and measures capacity in litres	Has major inconsistencies when measuring capacity using fixed units – using the litre as a unit of measuring capacity in litres

TIME

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT	2.4Time 10 lessons	By the end of the sub strand the learner should be able to: a) Relate the months of the year with various activities	<ul style="list-style-type: none"> Learners in pairs/groups discuss activities that takes place in the month of the year Learners in pairs/groups sing songs rhythm 	<ol style="list-style-type: none"> Which month do you celebrate your birth day? Which month do you have least number of days?

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		b) Recite the number of days in each month of the year for learning c) Measure time using arbitrary units in readiness to reading actual time d) Read time for daily routine e) Write correct time by the hour f) Appreciate time management in daily routine	related to number of days in the months of the year Learner with speech difficulties could listen and dance to the rhythm <ul style="list-style-type: none"> • Learners in pairs/groups to sing the first verse of Kenya national anthem while others clap/ listen and count number of claps up to the end of the verse Learner with speech difficulties could listen and count • Learners to recite poem while others conduct the claps until the end of the poem Learner with speech difficulties could clap. • Learners discuss the activities and establish which takes longer or shorter time • Learners discuss places where they have seen clocks displayed as well as how they look like 	3) In which months do we have celebrations?

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
			<ul style="list-style-type: none"> • The clock face should be displayed for the learners to identify minute and hour hands • The digital clock should be displayed for learners to observe how it shows time • Learners to discuss how to tell, read and write time by the hour using both the analogue and digital clock 	
<p>Core competence: Communication and collaboration as they discuss, Self-efficacy as they discuss in groups</p>				
<p>Link to PCIs: Health Education: Personal hygiene ; brushing teeth , washing face Citizenship: Social cohesion- group work ESD:DRR; safety of materials</p>			<p>Link to Values: Respect, Responsibility</p>	
<p>Links to other subjects</p> <ul style="list-style-type: none"> • Language activities • Religious activities • Environmental activities 			<p>Suggested community service learning: Sweeping religious institutions during holidays Helping the needy during school holidays (provide assistive devices to aid mobility and manipulation also provide extra time to accomplish the tasks)</p>	
<p>Suggested Non formal Activity to support learning: Learners to clean their classroom during free time</p>			<p>Suggested assessment: Oral questions, written, observation</p>	

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Suggested resources: Clock face, digital clock, calendar, Assistive devices- orthotic and prosthesis devices, extra time				

Assessment Rubrics

Exceeds Expectations	Meets Expectations	Approaching Expectations	Below Expectations
Relate months of the year to various activities; identify number of days in each month. Measure time using arbitrary and fixed units, identify the minute and the hour hand in a clock face (analogue and digital) and read, tell and write time by the hour beyond	Correctly relate months of the year to various activities, identify number of days in each month. Measure time using arbitrary and fixed units, identify the minute and the hour hand in a clock face (analogue and digital) and read, tell and write time by the hour	Inconsistently relate months of the year to various activities, identify number of days in each month. Measure time using arbitrary and fixed units, identify the minute and the hour hand in a clock face (analogue and digital) and read, tell and write time by the hour	Major inaccuracies relate months of the year to various activities, identify number of days in each month. Measure time using arbitrary and fixed units, identify the minute and the hour hand in a clock face (analogue and digital) and read, tell and write time by the hour

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT	2.5 Money 10 lessons	By the end of the sub strand the learner should be able to:	<ul style="list-style-type: none"> In pairs/groups/individuals learners sort out Kenyan currency notes and coins according to their attributes up to ksh.100 Learner with 	1) How can you identify different

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		a) Recognize Kenyan currency coins and notes up to kshs.100 according to their attributes. b) Count money in 1s, 5s, 10s, 20s, 40s, 50s up to kshs.100 c) Identify the equivalence of different denominations d) Use money to buy goods and services up to ksh.100 e) Differentiate between needs and wants in day today activities f) Explain the importance of saving money	fine motor difficulty could be assisted by peers and teacher aid <ul style="list-style-type: none"> • In pairs/groups learners count money in 1s, 5s, 10s, 20s, 40s, 50s and 100 up to sh.100 • In pairs/groups learners to make different amounts of money by same or different coins and notes e.g.ksh.20 = sh.10+sh.10 • = sh.10+sh.5+sh.5 <ul style="list-style-type: none"> ○ Ksh.100=sh.40+sh.40+sh.20 • In pairs/groups learners to use own experiences in relation to shopping activities • Learners could be guided to describe the value of items in the classroom shop up to ksh.100 • In pairs/groups learners discuss items/things they cannot do without and those that are necessary but they can do without them up to ksh.100 • In groups/whole class learners classify needs and wants • Learners discuss the importance of saving (keeping aside some money for future use) • Learners can role play buying and selling items from the classroom shop Learner with fine motor and mobility difficulty could play the role of shopkeeper 	Kenyan currency?

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		g) Appreciate the use of Kenyan currency in daily living activities		
<p>Core competence: Communication and collaboration - pair/group work, Self-efficacy – as they discuss own experiences involving shopping and balance, Critical thinking and problem solving – as learners discuss in groups the aspect of saving, Imagination and creativity – in the choice of what they need to buy from the shop, Citizenship appreciating the features of the Kenyan currency</p>				
<p>Links to PCIs</p> <ul style="list-style-type: none"> • Health education – the choice of what to buy and what not to buy • Parental engagement, involvement and guidance on selection of what to buy and what not to buy • Education for sustainable development – re-use of packets in the classroom shop • Life skills education – emphasizing integrity – where buyers are given quality goods for their money and the right change and balance • Financial literacy as they choose what to buy and what not to buy 			<p>Link to values: Respect Responsibility</p>	
<p>Links to other subjects</p> <ul style="list-style-type: none"> • Language activities 			<p>Suggested community service learning/non-formal activity Support learning through application</p>	

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
			<ul style="list-style-type: none"> Environmental activities 	<ul style="list-style-type: none"> Learners to be sent to buy items from shops/ market
Suggested Non formal Activity to support learning: Learners to assist school clerk in sorting coins and notes according to their value			Suggested assessment: Oral questions, written, observation	
Suggested resources Realia (notes and coins), Assistive devices-prosthesis and orthotic devices for those with mobility and manipulation difficulties				

Assessment Rubric

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Learner can identify Kenyan currency, count money, identify equivalence of different denominations, differentiate between needs and wants, explain importance of saving and beyond	Learner can identify Kenyan currency, count money, identify equivalence of different denominations, differentiate between needs and wants, explain importance of saving	Learner attempts to identify Kenyan currency, count money, identify equivalence of different denominations, differentiate between needs and wants, explain importance of saving	Learner have challenges to identify Kenyan currency, count money, identify equivalence of different denominations, differentiate between needs and wants, explain importance of saving

Strand	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes	Suggested Learning Experiences (align to the level competency descriptors)	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) Identify straight and curved lines for drawing activities b) Draw straight and curved lines for learning c) Appreciate the use of lines in daily activities NB: Learner with neurological, muscular skeletal impairment and health conditions require extra time	<ul style="list-style-type: none"> Learners could identify straight and curved lines. Learners in groups form straight and curved lines by holding their hands The learners in pairs /groups could draw straight and curved lines Learner could observe others draw Learners in groups to model straight and curved lines using ribbons. Learner with fine motor difficulty could be assisted by peers and provided extra time to complete tasks) 	1) What types lines are the
	Core-Competence to be developed: Communication and collaboration ; as learners discuss how to draw the lines <i>(indicate the core competence and how it will be achieved)</i>			
	Link to PCIs: Life skills –awareness as they use their hands in forming lines		Link to Values: <ul style="list-style-type: none"> Respect Responsibility 	
Links to other subject(s): <ol style="list-style-type: none"> Music and movement Psychomotor and creative activities 		Suggested Community Service		

		Learners could visit farm and assist in arranging seedlings to be planted in straight curved lines
	Suggested Non formal Activity to support learning: Learners to arrange seats in the classroom in straight lines	Suggested assessment: Oral questions, written, observati
	Suggested Resources; Strings, plasticine, realia, Assistive devices-orthotic and prosthesis devices extra time to complete ta PT or OT to train mobility and manipulation skills	

Assessment Rubric

Exceeds Expectations		Meets Expectations		Approaches Expectations		Below Expectations	
Correctly draws and models straight and curved lines and beyond		Correctly draws and models straight and curved lines		Inaccurately draws and models straight and curved lines		Major inaccuracies in drawing and modelling straight and curved lines	
STRAND	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))		Suggested Learning Experiences (align to the level competency descriptors)		Key Inquiry Question(s)	
GEOMETRY	3.2SHAPES 5 lessons	By the end of the sub strand the learner should be able to: Demonstrate an understanding of geometry by: <ul style="list-style-type: none"> a) Identifying rectangles, circles ,triangles ovals and squares within the environment 		<ul style="list-style-type: none"> • Learners could identify and name the different shapes found in the class • The learners could sort and group shapes using one attribute. Learner with neurological and muscular skeletal impairment could be assisted by peers and teacher aid 		1) What shape can you ide in your sch	

	<p>b) Make patterns involving rectangles, circles, triangles, ovals and squares for learning</p> <p>c) Appreciate the beauty of patterns in daily life</p>	<ul style="list-style-type: none"> • Learners in pairs /groups discuss the properties of the shapes in the various groups. • Learners working in pairs/ groups make patterns of their choice using the 5 shapes Learner with fine motor difficulty could be assisted by the peers to make the patterns of their choice • Learners in groups make patterns, colour them and compare with other groups. 	
<p>Core-Competence to be developed : Communication and collaboration ; as learners discuss how to draw the lines Imagination and creativity: as they make patterns of their choice</p>			
<p>Link to PCIs Safety as they collect objects for tracing and as they colour the patterns</p>		<p>Link to Values: ,Respect, Responsibility</p>	
<p>Links to other subject(s):Movement and creative activities, Environmental studies</p>		<p>Suggested Community Service : Learners could visit pre-school classes and beautify walls using patterns drawn on manila paper plant flowers in patterns</p>	
<p>Suggested Resources: Manila paper, crayons/ paint</p> <p>Assistive devices-prosthesis and orthotic devices, mobility devices</p>			

	Physiotherapy/ occupational therapy services
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Assessment Rubric

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Correctly identifies shapes and makes patterns involving rectangles, circles, ovals, squares and beyond	Correctly identifies shapes and makes patterns involving rectangles, circles, ovals, squares	Inaccurately identifies shapes and makes patterns involving rectangles, circles, ovals, squares	Major inaccuracies in identifies shapes and makes patterns involving rectangles, circles, ovals, squares

LOWER PRIMARY MATHEMATICS GRADE 3

Strand 1.0 NUMBERS	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))	Suggested Learning Experiences (align to the level competency descriptors)	Key Inquiry Question(s)
	1.1NUMBER CONCEPT 8 lessons	By the end of the sub strand the learner should be able to: a) Describe position using ordinal numbers from 1- 20 in daily life b) Arrange different items in order of size in the environment c) Appreciate the use of positions in daily activities	<ul style="list-style-type: none"> • Learners could be encouraged to cooperate as they learn in groups and the qualities of leadership displayed as they take turns. • Learners in pairs/groups to arrange different items in order of size starting with the smallest Learner with fine motor could be assisted by peers • The learners in groups to run for a distance and identifies their position use of wheelchairs or crutches for those with mobility difficulties, extra time to complete the task • Learners in pairs/ groups represent numbers 1-20 using similar objects like marbles and put the groups on a flat surface. The learner discusses 	1) Who arrived in class first? 2) How many siblings do have? 3) What position are you in your family?

			<p>the position of each group using the words first, second, third up to 20th position.</p> <ul style="list-style-type: none"> • The learners in groups to run for a distance and identify their position using the words first, second, etc. Learner with mobility difficulty could be assisted by peers and teacher aid • Learners in pairs/groups play games of representing numbers 1-100 using concrete objects. Learner to be guided on safety precautions. Learner with mobility difficulty could be assisted by peers and teacher aid 	
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Core-competence to be developed: Core-Competence to be developed; Communication and collaboration as learners discuss in groups, Learning to learn as they position objects/ pupils	
Link to PCIs : life skills and values education;	Links to Values: <ul style="list-style-type: none"> • Cooperation • positive competition
Links to other subjects: <ul style="list-style-type: none"> • Language activities: 	Suggested Community Service Learning activities: learners may assist the elderly in the market in arranging items for sale according to size
Suggested Non-Formal Activity to support learning: Taking turns in playing games	Suggested assessment: Written exercises, oral questions and observation
Suggested Resources: concrete objects , realia, field, wheelchairs, crutches, callipers, prosthesis, whistles, starter, number cards, P.T/O.T/ Speech therapist, extra time	

Assessment Rubric

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Correctly describe position using ordinal numbers 1-20, arrange items in order of size and beyond	Correctly describe position using ordinal numbers 1-20, arrange items in order of size	Inaccurately describe position using ordinal numbers 1-20, arrange items in order of size	Major inaccuracy in describe position using ordinal numbers 1-20, arrange items in order of size

Strand	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))	Suggested Learning Experiences (align to the level competency descriptors)	Key Inquiry Question(s)
NUMBERS	<p>1.2WHOLE NUMBERS</p> <p>20 lessons</p>	<p>By the end of the sub strand the learner should be able to:</p> <p>h) Count numbers 1-100 for number recognition</p> <p>i) Identify place value of numbers up to 100 in readiness for number operations</p> <p>j) Read numbers 1-100 in symbols in readiness to number writing</p>	<ul style="list-style-type: none"> Learners could be encouraged to cooperate as they learn in groups and the qualities of leadership displayed as they take turns Learners in pairs or groups count in 2's forward and backward. One member points out the starting at any point. Learners in pairs or groups count in 5's forward and backward. One member points out the starting at any point. Learners in pairs/groups could count their body parts in 2's forward and backward. One member points out 	

		<p>k) Read numbers 1-50 in words for problem solving</p> <p>l) Write numbers 1-50 in words for problemsolving.</p> <p>m) Fill in missing numbers in number patterns</p> <p>n) Appreciate number patterns in daily activities</p> <p>NB: Learner with speech difficulty could observe others as they carry out activities</p>	<p>the starting at any point. Learner with missing limbs could peers body parts</p> <ul style="list-style-type: none"> • Learners in pairs/groups could count their body parts in 10's forward and backward. One member points out the starting at any point. • In pairs / groups learners could discuss place value of digits in given numbers up to hundreds • In pair/ groups and, learners could be guided to read numbers 1-100 in symbols • Learners could read and write numbers 1-50 in words Learners with articulation difficulty could listen or point to number cards • Learners in pairs or groups could make number patterns and share with other groups 	
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Core-Competence to be developed: Communication and collaboration; critically thinking and problem solving; imagination and creativity; digital literacy

Link to PCIs:
Life skills: Self- awareness -as learners count their fingers and toes
Citizenship: social cohesion ;as they work in groups

Links to Values:

- Integrity
- Unity
- responsibility

Links to other subjects:

- Environmental activities
- Language activities

Suggested Community Service Learning:
Learners may assist in counting the number of chairs in a function.

Suggested Non-Formal Activity to support learning: Count trees in the school compound, games	Suggested assessment: Written exercises, Q/A, observation, Discussion
Suggested Learning Resources:	

	Core-Competence to be developed; Communication and collaboration as learners discuss in groups Critical thinking and problem solving as they work with numbers (<i>indicate the core competence and how it will be achieved</i>)	
	Link to PCIs and Values: life skills as learners count their body parts Unity	Links to other subject(s): 1) Environmental activities
	Suggested Community Service Learning/Non-Formal Activity to support learning through application	
	Suggested Resources: body parts, number line, counters, charts, number cards	

Assessment Rubric

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Correctly count numbers 1-100, identify place value of number, read numbers 1-100 in symbols, read and write numbers 1-50 in words and fill in missing numbers in number patterns and beyond	Correctly count numbers 1-100, identify place value of number, read numbers 1-100 in symbols, read and write numbers 1-50 in words and fill in missing numbers in number patterns	Incorrectly count numbers 1-100, identify place value of number, read numbers 1-100 in symbols, read and write numbers 1-50 in words and fill in missing numbers in number patterns	Has challenges in counting numbers 1-100, identifying place value of number, read numbers 1-100 in symbols, reading and writing numbers 1-50 in words and filling in missing numbers in number patterns

FRACTIONS

Strand NUMBERS	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))	Suggested Learning Experiences (align to the level competency descriptors)	Key Inquiry Question(s)
	<p>FRACTIONS</p> <p>10 lessons</p>	<p>By the end of the sub strand the learner should be able to:</p> <p>Demonstrate an understanding of fractions by:</p> <ol style="list-style-type: none"> 1) Identifying $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$ of a whole 2) Identifying $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$ as part of a group 3) Cut out shapes into $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$ for learning 4) Appreciate sharing in real life situation <p>NB: Neurological, muscular skeletal impairment may require extra time to complete task</p>	<ul style="list-style-type: none"> • Learners in pairs or groups make circular-cuts. Learner with fine motor difficulty could be provided with circular cut- outs • Learners in pairs or groups could be guided fold the circular cut – outs into 2 equal part. Learner could be guided to identify the fraction $\frac{1}{2}$ of the whole. • Learners in pairs/groups make rectangular cut-outs. Learner with fine motor difficulty could be provided with cut out assisted to fold them into 2 equal parts to get a half of a whole • Learners in pairs or groups could fold the circular cut – outs into 2 equal parts and then fold another time to get 4 equal parts .Each part is $\frac{1}{4}$ of a whole. • Learners in pairs/groups could make rectangular cut-outs. Those who cannot could be provided with rectangular cut – outs and 	<ol style="list-style-type: none"> 1. How can you represent a quarter or eighth of a group?

			<p>fold them into two equal parts and then fold another time to get 4 equal parts and a third time to get 8 equal parts. Each part is a 1/8 of a whole. Learner with fine and gross motor difficulty could be assisted by peers to fold</p> <ul style="list-style-type: none"> • Learners in pairs /groups to divide a number of objects into 2 equal groups .Each of the groups represents a ½ of the whole group. • Learners in pairs /groups to divide a number of objects into 4 equal groups .Each of the groups represents a ¼ of the whole group. • Learners in pairs /groups to divide a number of objects into 8 equal groups .Each of the groups represents a 1/8 of the whole group • Provide adapted computer mouse, monitor, key board and software for those with fine motor difficulties and missing limbs 	
<p>Core-Competence to be developed Imagination and creativity as they fold papers to get fraction, communication and collaboration as they discuss</p>				
<p>Link to PCIs: Life skills-interpersonal relationships, friendship formation and decision making</p>			<p>Links to Values:</p> <ul style="list-style-type: none"> • Integrity • Unity 	

	<p>Citizenship: understanding integrity-sharing; social cohesion as they work in groups</p> <p>ESD: environmental awareness- objects collection</p>	<ul style="list-style-type: none"> responsibility
	<ul style="list-style-type: none"> Links to other subject(s): Language activities Environment activities, as they are using papers and disposing, Nutrition and hygiene Language activities 	<p>Suggested Community Service Learning</p> <p>Learners can share whole items in $\frac{1}{2}$'s and during community activities</p>
	<p>Suggested Non-formal Activity to support learning:</p> <p>Learners to share library books during free time</p>	<p>Suggested assessment: Written exercises, observations, or exercises</p>
	<p>Suggested Resources: Manila paper, papers, cutting tools, pencils, rulers</p> <p>Adapted computer</p>	

Assessment Rubric

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Correctly Identify fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$, as part of a whole with ease	Correctly Identify fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$, as part of a whole	Incorrectly Identify fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$, as part of a whole	Has challenges to identify fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$, as part of a whole

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
Numbers 1.4 Addition 25 lessons	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Demonstrate an understanding of addition by working out addition of 3 digit numbers to up to a 2 digit numbers without regrouping with sum not exceeding 1000 (k)</p>	<ul style="list-style-type: none"> Learners could : Identify numbers according to place value up to 1000 add up to a 3 digit number to a 2 digit number vertically in the place value chart 	<ol style="list-style-type: none"> How do you arrange number when adding vertically How do a two digit nu as a sum of and a single digit How do you identify the first two numbers when adding three single numbers How can you get the next number in given pattern

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
	<p>b) Demonstrate an understanding of addition by adding a 3 digit number to up to a 2 digit number with single regrouping with sum not exceeding 1000 (s)</p> <p>c) Demonstrate an understanding of addition by adding 3 single digit numbers (k) d) Demonstrate an understanding of addition by adding two 3- digit numbers without regrouping (k)</p> <p>e) Demonstrate an understanding of addition by adding two 3- digit numbers with single regrouping with sum not exceeding 1000 (s)</p> <p>f) Write number pattern involving numbers up to 1000</p> <p>g) Appreciate the use of numbers in daily activities (a)</p>	<ul style="list-style-type: none"> • Add horizontally • In pairs or groups, Learners practice adding horizontally and vertically. • Align numbers according to place value • Adding vertically • Adding horizontally • Learners work out addition problems involving real life situations • Learners to work out addition problems using patterns 	

Core Competencies: Communication and collaboration, Critical thinking and problem solving, Digital literacy, Imagination and creativity	
<p>Link to PCIs Environmental conservation ESD: DRR; Safety and Environmental awareness, animal welfare-feeding animals</p> <ul style="list-style-type: none"> • Life skills: Self- awareness-as they use body parts in counting 	<p>Link to Values: Integrity , responsibility</p>

Link to other subjects <ul style="list-style-type: none"> • Environmental activities • Language activities • Religious activities 	Suggested Community service learning: At home/school learners practice counting items.
Suggested Non-formal activity to support learning: Count number of children in school	Suggested assessment: Witten exercises, observation, Oral questions
Suggested Resources: Counters ,sticks, bottle-tops. Body parts, abacus	

SUGGESTED FORMATIVE ASSESSMENT

Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Correctly add 3digit numbers to up to2 digit numbers without and with regrouping with sum not exceeding 1000, add 3 single digit number with sum not exceeding 1000, add two 3-digit number with and without regrouping, write number patterns with ease	Correctly add 3digit numbers to up to2 digit numbers without and with regrouping with sum not exceeding 1000, add 3 single digit number with sum not exceeding 1000, add two 3-digit number with and without regrouping, write number patterns	Correctly add 3digit numbers to up to2 digit numbers without and with regrouping with sum not exceeding 1000, add 3 single digit number with sum not exceeding 1000, add two 3-digit number with and without regrouping, write number patterns with assistance	Major inaccuracies add 3digit numbers to up to2 digit numbers without and with regrouping with sum not exceeding 1000, add 3 single digit number with sum not exceeding 1000, add two 3-digit number with and without regrouping, write number patterns

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions

<p>Number</p>	<p>1.5 Subtraction 20 lessons</p>	<p>By the end of the sub strand the learner should be able to: e) Subtracting up to 3 digit numbers with regrouping for problem solving f) Subtracting up to 3 digit numbers involving missing numbers without regrouping in real situation g) Working out missing numbers in number pattern involving numbers up to 1000 for problem solving h) Appreciate use of numbers in day today life</p>	<ul style="list-style-type: none"> • a) Learners could practice writing 3-digit numbers randomly • Learners could practice subtracting up to 3-digit numbers without regrouping • Learners could be guided in working out subtraction of upto 3-digit numbers with regrouping in real life • a) Learners could be guided to visualize and find missing numbers in subtraction sentences using a variety of ways such number families • Learners in pairs or groups could discuss and create situations in familiar practical contexts that have missing subtraction sentences • Learners could be guided on how to discover the pattern by subtraction 	<ol style="list-style-type: none"> 1) When do you regroup during subtraction 2) How do you find a missing number in a subtraction question 3) How do you identify the missing number in a given number pattern?
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Core Competencies

- Communication and collaboration – pairing and group work

<ul style="list-style-type: none"> • Self-efficacy – pairing and group work • Critical thinking and problem solving – subtraction involving real life situation , number patterns • Imagination and creativity – patterns, subtraction involving missing numbers 	
Link to PCIs Education for sustainable development (ESD) and health education by selecting safe and appropriate materials//objects, re use of materials collected and cleaning the environment by collecting litter	Link to Values: Respect, Responsibility, integrity
Links to other Subjects <ul style="list-style-type: none"> • Language activities • Environmental activities 	Suggested Community Service Participating in community activities during the cleaning of environment
Suggested Non formal Activity to support learning: School clean up	Suggested assessment: Oral questions, written, observation
Suggested Resources	

SUGGESTED FORMATIVE ASSESSMENT

Exceeds Expectations	Meets Expectations	Approaching Expectations	Below Expectations
Subtracts up to 3 digit numbers with regrouping, subtracts up to 3 digit numbers involving missing numbers without regrouping, subtracts missing number pattern up to 1000 and beyond	Correctly subtracts up to 3 digit numbers with regrouping, subtracts up to 3 digit numbers involving missing numbers without regrouping, subtracts missing number pattern up to 1000	Inconsistently subtracts up to 3 digit numbers with regrouping, subtracts up to 3 digit numbers involving missing numbers without regrouping, subtracts missing number pattern up to 1000	Major inaccuracies subtracts up to 3 digit numbers with regrouping, subtracts up to 3 digit numbers involving missing numbers without regrouping, subtracts missing number pattern up to 1000

MULTIPLICATION

NUMBERS	1.6 Multiplication 10 lessons	By the end of the sub strand the learner should be able to: a) Represent multiplication as repeated addition involving numbers up to 10 in real life situation(k) b) Write repeated addition as multiplication sentences using x sign classroom situation(s) c) Multiply single number up to 10 in different context d) Appreciate sharing in day today life activities(a)	<ul style="list-style-type: none"> • In pairs/ groups, learners could practice multiplication involving numbers 6,7,8,9 and 10 • Learner could write addition as multiplication sentences using X sign • In pairs/groups/whole class, learners could multiply single digit numbers by 6,7,8,9,10 • NB: learner with neurological, muscular skeletal impairment and health conditions require extra time to complete task 	1) How much is: 2) 5×2 ? 3) 4×3 ? 4) 2×4 ? 5) 1×10 ? 6) 3×7 ?
Core competence : Communication and collaboration as learners work in pairs and in groups <ul style="list-style-type: none"> • Imagination and creativity as learners arranges different groups of objects certain number of times • Self-efficacy as children air out their ideas and opinions out rightly 				
Links to other subjects Language activities ,Environmental activities, Creative arts/movement			Suggested Community Services learning activities: Assist farmers in finding out how may seedling are in a seed bed	

Suggested Non-formal activities to support learning: Play games involving multiplication in school	Suggested assessment: Written exercises, observation, Oral questions
Suggested Resources: Mathematical tables, counters	

Assessment Rubric

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Correctly multiplies single digit numbers by numbers 1-10 and beyond	Correctly single digit numbers by numbers 1-10	Inconsistently multiplies single digit numbers by numbers 1-10	Has major inaccuracies in multiplying single digit numbers by numbers 1-10

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
1.7 NUMBERS Division 7 lessons	By the end of the sub strand the learner should be able to: a) Identify division as repeated subtraction in daily activities	<ul style="list-style-type: none"> From a given group of objects learners could take away a specific number of objects at a time until all are finished. The learners count the number of groups formed 	<ol style="list-style-type: none"> How can we work out division, question using subtraction? How can we use the multiplication table to

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
	b) Identifying relationship between multiplication and division in problem solving c) Appreciate sharing in day today activities	<ul style="list-style-type: none"> Learners in pairs could practice division as repeated subtraction related to the basic multiplication facts Learners in pairs/groups could practice multiplication of numbers upto $9 \times 10 = 90$. 	work out division question? 3) What is the relationship between multiplication and division?

Assessment Rubric

Core Competencies: Communication and collaboration in pair/group, Language activities Self-efficacy – group work, self esteem	
<ul style="list-style-type: none"> Link to PCI s: Life skills – by sharing, tolerance, honesty Communication and collaboration as learners discuss ideas Self-efficacy as learners Citizenship – honesty 	Link to values Link to Values: Respect , Responsibility love
Link to other subjects: Links to other subjects : Languages activities, Nutrition activities, Hygiene activities environmental activities	Community service learning: Learners to collect litter within their community e.g. estates, church, school
Suggested Non formal Activity to support learning: Watering flowers and trees in the school compound	Suggested assessment: Oral questions, portfolio, observation
Suggested resources: counters, objects, body parts, wheelchairs, crutches, callipers	

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Correctly does division as repeated subtraction up to 5 times and relates division to multiplication involving numbers up to $9 \times 10 = 90$ and beyond	Correctly does division as repeated subtraction up to 5 times and relates division to multiplication involving numbers up to $9 \times 10 = 90$	Inconsistently does division as repeated subtraction up to 5 times and relates division to multiplication involving numbers up to $9 \times 10 = 90$	Has major inaccuracies in doing division as equal sharing and equal grouping use of division sign, divides numbers up to 25 by 2, 3, 4, and without a remainder

MEASUREMENTS LENGTH

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
2.0 MEASUREMENT 2.1 Length 6 lessons	By the end of the substrand the learner should be able to: <ul style="list-style-type: none"> • Measure length in metres in day today life • Add length involving metres in real life situations • Subtract length involving metres in real life situations • Estimate length up to 5 metres within the environment • Appreciate use of meter in measuring length 	<ul style="list-style-type: none"> • Learners in pairs/groups use the metre sticks to measure various distances Learner with gross and fine motor difficulty could be assisted by teacher aid • Learners could record and discuss the results • Learners could be guided to prepare 5 metre long strings with knots at intervals of one-metre to measure long distances 	<ol style="list-style-type: none"> 1) How do you measure the chalkboard using a metre stick? 2) How do you get the length of the 4 metre classroom walls? 3) How do you measure the distance between the flag post and the staffroom using 5 metre long string?

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		<p>Learner with gross and fine difficulty could be assisted by teacher aid</p> <ul style="list-style-type: none"> • Learners in pairs/groups use the prepared 5 – metre long strings to measure the distances between the flag post to their class/head teachers office/field Learner with gross and fine motor difficulty could be assisted by peers • Learners could record and discuss the results • Learners in groups could measure the lengths of the 4 walls in their classroom Learner with gross and fine motor difficulty could be assisted by peers • Learner could put together (add) the 4 length • Learners in groups/pairs to measure the length of the wall which has the chalkboard and record the results • Learners could measure the length of the chalkboard then take away this length from the length of the wall and find the difference in length Learner with gross and fine motor difficulty could be peers and teacher aid • Learners could discuss the results 	

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
		<ul style="list-style-type: none"> • Learners could be exposed to real life situations involving measuring of length in metres • Learners in pairs or groups could estimate the length of various objects in class and around the school up to 5 metres • Learners could record their results • Learners could discuss their results 	

<p>Core Competencies: Communication and collaboration – learners working in pairs/groups</p> <ul style="list-style-type: none"> • Imagination and creativity – displayed during measuring of various objects and putting together lengths of various objects • Critical thinking and problem solving – discussion of results which are varied • Self-efficacy – group work brings self-esteem during discussion and communication 	
<p>Link to PCIs</p> <ul style="list-style-type: none"> • Health education – safe objects and of appropriate sizes • Citizenship – honesty in sharing materials during practical activities • Life skills – ability to work in groups 	

<ul style="list-style-type: none"> • Parental engagement and service learning – parental support by provision of required materials and follow-up of assignments • Education for sustainable development – reuse of materials e.g. old wood strings etc. 			
Links to Other Subjects <ul style="list-style-type: none"> • Environmental activities • Language activities 		Community Service <ul style="list-style-type: none"> • Assisting in arranging objects at home • Assisting in tethering of animals using a given length of ropes 	
Suggested Non-formal activity to support learning Measure lengths of buildings in school		Suggested assessment: Oral questions, observation written	
Suggested Resources: Rulers, sticks, strings Assistive devices-wheel chairs, crutches, walkers, prosthesis and orthotic devices. Physiotherapy/ occupational therapy services			
Assessment Rubric			
Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Measure length in metres, add length in metres, subtract length in metres and estimate length up to 5 metres and beyond	Correctly measure length in metres, add length in metres, subtract length in metres and estimate length up to 5 metres	Inconsistently measure length in metres, add length in metres, subtract length in metres and estimate length up to 5 metres	Major inaccuracies measure length in metres, add length in metres, subtract length in metres and estimate length up to 5 metres

MASS

Strand	Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT	2-2 Mass 6 lessons	By the end of the sub strand the learner should be able to: a) Add mass involving kilograms in real life situations b) Subtract mass involving kilograms in real life situations c) Measure mass in kilogram in real life situation d) Estimate mass up to 5 kilograms within the environment e) Appreciate use of kilogram as a unit of measurement in life activities	<ul style="list-style-type: none"> • Learners could add mass in kg in real life situation e.g. buying and selling, packaging etc. • Learners in pairs/groups could subtract mass in real life situation • In pairs /groups, Learners could make masses of 1kg using sand/ soil by measuring against the kg standard unit • Learners could have 5 items of 1 kg and they could try to lift. • The learners could lift other masses to say whether they are lighter or heavier than 5 kg mass(muscular dystrophy, brittle bones, hydro-cephalous, severe cerebralpalsy may not perform this activity. They could observe others) • 	1) How can you find out a 1 kilogram mass from a variety of items

, stones

Core competencies: Communication and collaboration in group work, Critical thinking and problem solving in collecting, selecting items for measurement			
Link to PCIs: Safety – in selecting appropriate and security, safe materials/items		Link to Values: <ul style="list-style-type: none"> • Integrity • Unity • honesty 	
Link to other subjects <ul style="list-style-type: none"> • Environmental activities • Language activities 		Community service Carrying items to where they are needed at home, in school and in community work	
Suggested Non-formal activity to support learning: Measure and mark play grounds for games		Suggested assessment: Written exercises, oral questions, observations	
Suggested resources: Containers of different sizes, beam balance, water, soil , sand			
Assessment Rubric			
Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Correctly add and subtract mass, measure and estimate mass up to5 kilograms and beyond	Correctly add and subtract mass, measure and estimate mass up to5 kilograms	Attempts to add and subtract mass, measure and estimate mass up to5 kilograms	Inaccurately add and subtract mass, measure and estimate mass up to5 kilograms

CAPACITY

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT			

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
<p>2.3 Capacity</p> <p>8 lessons</p>	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Identify objects of different capacities in the environment</p> <p>b) Estimate capacity up to 5 litres in the environment</p> <p>c) Measure capacities in litres in day today activities</p> <p>d) Add capacity involving litres in real life situation</p> <p>e) Subtract capacity involving litres in real life situation</p> <p>f) Appreciate measuring capacity in litres in day to day life</p>	<ul style="list-style-type: none"> • Learners could be asked to collect safe containers for use in class Learner with gross and fine motor difficulty could be assisted by peers and teacher aid. They require extra time • Learners could estimate capacity up to 5 litres • Learners could be asked to work in groups/pairs to fill in containers of different sizes using the litre as they take turns , Provide extra time for learner with gross and fine motor difficulty • Learner could discuss the results and observe safety. • Learners could add capacity in litres • Learners could subtract capacity in litres 	<ol style="list-style-type: none"> 1) How many litres of water were used to fill in the different containers? 2) What is the total number of litres contained in these two containers? 3) What is the approximate capacity of these jerry cans?

Core Competencies: Critical thinking and problem solving – when learners use arbitrary units to measure capacity
Communication and collaboration as learners work in groups, Imagination and creativity as they collect and use different containers, Citizenship as they act ethically and responsibly in their groups while filling and emptying containers, Self-efficacy – learners develop self-esteem as they work in groups

Link to PCIs

Life skills: self- awareness- as they measure own mass

Link to Values:

- Integrity

<p>Citizenship: social cohesion- working in group ESD:DRR- Safety in selecting appropriate and security, safe materials/items</p>	<ul style="list-style-type: none"> • Unity • honesty 		
<p>Link to other subjects:Language activities, Environmental activities , Psychomotor and creative activities</p>	<p>Suggested Community Service Learners take part in watering flowers and trees around the school, health centres and at home Learners could take part in watering animals in their community at their homes and in school</p>		
<p>Suggested Non-formal activity to support learning: Measure and mark play grounds for games</p>	<p>Suggested assessment: Written exercises, oral questions, observations</p>		
<p>Suggested Resources: containers of different sizes</p> <p>Assistive devices- wheel chairs, crutches, walkers, prosthesis devices , orthotic devices, O.T/ P.T services</p>			
<p>Assessment Rubric</p>			
<p>Exceeds Expectations</p>	<p>Meets Expectations</p>	<p>Approaches Expectations</p>	<p>Below Expectations</p>
<p>Correctly measures capacity in litres, adds and subtracts the litre in real life experience and estimates capacity up to 5 litres and beyond</p>	<p>Correctly measures capacity in litres, adds and subtracts the litre in real life experiences and estimates capacity up to 5 litres</p>	<p>Inconsistently measures capacity in litres, adds and subtracts the litre in real life experience and estimates capacity up to 5 litres</p>	<p>Major inaccuracies in measuring capacity in litres adding and subtracting the litre in real life experience and estimating capacity up to 5 litres</p>

TIME

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT 2.4 Time 10 lessons	By the end of the sub strand the learner should be able to: identify the minute as a unit of measuring time in daily activities g) Read, tell and write time using ‘past’ and ‘to’ the hour for daily routine h) Estimate time in hours in day today activities i) Add time involving hours and minutes without conversion in real life context j) Subtract time involving hours and minutes without conversion in real life contexts k) Appreciate time management in daily activities	<ul style="list-style-type: none"> • Learners in pairs/groups could discuss hours and minutes as unit of measuring time as well as their relationship to one hour • Learners in pairs/groups could reads, tell and write time using ‘past’ and ‘to’ the hour • Learners in pairs/groups could estimate time in hours • Learners in pairs/groups could carry out addition involving time in hours and minutes without convention • Learners in pairs/groups could carry out subtract involving hours and minute without conversion 	1) How do we convert hours to minutes 2) How do we change minutes to hours?

Core Competencies: Communication and collaboration , Problem solving	
Link to PCIs: ESD – giving animals food, water at the right time	Link to Values: Respect, Responsibility, Integrity , social justice.
Links to other subjects : Language activities, Nutrition and Hygiene, Environmental activities HIV and AIDS- drugs time adherence	Suggested Community Service Learning Assist in being time keeper in community activities

citizenship: governance- law and order in school in keeping time			
Suggested Non formal Activity to support learning: Assist in time keeping during games		Suggested assessment: Oral questions, observation, written	
Suggested resources: clock face, real wrist watches			
Assessment Rubric			
Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Identify the minute as a unit of measuring time, read, tell and write time using(past and to) the hour, add and subtract time without conversion excellently	Identify the minute as a unit of measuring time, read, tell and write time using(past and to) the hour, add and subtract time without conversion	Identify the minute as a unit of measuring time, read, tell and write time using(past and to) the hour, add and subtract time without conversion with some inaccuracy	Identify the minute as a unit of measuring time, read, tell and write time using(past and to) the hour, add and subtract time without conversion with a lot of inaccuracy

MONEY

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
MEASUREMENT 2.5 Money 10 lessons	By the end of the sub strand the learner should be able to: a) i) Recognize Kenyan currency notes up to ksh.1000 according to their attributes ii) Count money in different denominations up to ksh.1000 b) i) Add money in shillings up to a sum of ksh.1000 in real life situation ii) Subtract money in shillings up to ksh.1000 in real life situation	<ul style="list-style-type: none"> In pairs/groups/individuals learners sort out Kenyan currency notes according to their attributes up to ksh.1000 Learner with fine motor difficulty could be assisted by peers and teacher aid. They need extra time to complete task i) In pairs/groups learners to practice addition in money in real life situations up to a sum of ksh.1000 	1) How do we convert hours to minutes 2) How do we change minutes to hours?

Strand/Sub-Strand	Specific Learning Outcomes knowledge (k), skills (s) and attitude (a)	Suggested learning experiences (align them to the level competency descriptors)	Key Inquiry Questions
	<p>c) i) Carry out shopping activities involving giving change in real life situation</p> <p>ii) Carry out shopping activities involving balance in real life</p> <p>d) Relate money to goods and services up to ksh.1000 in day to day activities</p> <p>e) Differentiate between needs and wants in real life situation</p> <p>f) Explain meaning of spending and saving in real life situations</p> <p>g) Appreciate the use of Kenyan currency in daily living</p>	<ul style="list-style-type: none"> • ii) In pairs/groups learners to practice subtraction in money in real life situation up to ksh.1000 • i) In pairs/groups learners to practice giving change using imitation money up to ksh.1000 in shopping activities • In pairs/groups learners to practice giving balance after a shopping activity involving the classroom shop Learner with fine motor difficulty need extra time to complete task • i) In pairs/groups learners to use own experience in relation to shopping activities • Learners discuss the value of items in the classroom shop up to ksh.1000 • In pairs/groups learners to discuss items/things they cannot do without and those that are necessary but they can do without them up to Ksh.1000 • In groups/whole class learners classify needs and wants 	

Core Competencies: Communication and collaboration – pair/group work, Self efficacy – as they discuss own experiences involving change and balance, Critical thinking and problem solving – as learners discuss in groups the aspect of saving, Imagination and creativity – in the choice of what they need to buy from the shop, Citizenship – appreciating the features of the Kenyan currency			
Link to PCIs: Health education – the choice of what to buy and what not to buy, Parental engagement, involvement and guidance – on selection of what to buy and what not to buy, Education for sustainable development – re-use of packets in the classroom shop, Life skills education – emphasizing integrity – where buyers are given the right change and balance, Citizenship – where they are seeking several attributes of the Kenyan currency		Link to Values: Respect, Responsibility, Integrity Social justice	
Link to other subjects: Language activities – language of instruction and in groups, Environmental activities – collecting shopping items from the environment		Suggested Community Service Learning Learners to assist in shopping at home/ school	
Suggested Non formal Activity to support learning: Help count money in school activities		Suggested assessment: Written exercises, Oral questions, observation	
Suggested resources: notes and coins, imitation money Assistive devices- mobility, prosthesis and orthotic devices Physiotherapy/ occupational therapy services			
Assessment Rubric			
Exceeds expectations	Meets expectations	Approaches expectations	Below expectations

Recognize Kenyan currency, add and subtract money to a sum of up to 1000, give change and balance, relate money to goods and services, differentiate between needs and wants, with ease	Correctly recognize Kenyan currency, add and subtract money to a sum of up to 1000, give change and balance, relate money to goods and services, differentiate between needs and wants,	Recognize Kenyan currency, add and subtract money to a sum of up to 1000, give change and balance, relate money to goods and services, differentiate between needs and wants with some inconsistencies	Recognize Kenyan currency, add and subtract money to a sum of up to 1000, give change and balance, relate money to goods and services, differentiate between needs and wants with a lot of inconsistencies
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Strand	Sub-strand/Theme/Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))	Suggested Learning Experiences (align to the level competency descriptors)	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) Describe direction in daily activities b) Move towards a given direction within the environment c) Appreciate giving direction in the immediate environment	<ul style="list-style-type: none"> Learners could be asked to form groups and choose a leader and encouraged to cooperate and the qualities of leadership displayed. The learners in pairs /groups could be asked to move along a straight line Learner with neurological, muscular skeletal impairment could be assisted by peers and teacher aid. Bend the rules and allow more time Learners in pairs/groups to move straight along the side of their classroom Learners in pairs/groups to move straight along the outside of their classroom and then turn to the right Learner with mobility difficulty 	What types of lines are there?

			<p>could move with support and allow more time</p> <ul style="list-style-type: none"> • Learners in pairs/groups to move straight along the outside of their classroom and then turn to the left Learner with mobility difficulty could move with support and allow extra time • Learners in pairs practice moving along a straight line and turn right and left. Learner with mobility difficulty could move with support and allow more time 	
<p>Core-Competence to be developed: Communication and collaboration ; as learners discuss movement</p>				
<p>Link to PCIs: Life skills –awareness as they use their parts of the body in movement; road safety</p>			<p>Link to Values:</p> <ul style="list-style-type: none"> • Respect • Responsibility <p>unity</p>	
<p>Links to other subject(s): Music and movement, Environmental activities</p>			<p>Suggested Community Service Learning Learners could visit a local chief’s camp and with the assistant of an officer discuss how to cross the road safely.</p>	
<p>Suggested Non formal Activity to support learning: Participate in Games, athletics and scouting</p>			<p>Suggested assessment: written exercises, Oral questions, observation</p>	
<p>Suggested Resources; wheelchairs, crutches, callipers, realia P.T/O.T services</p>				

Suggested

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Correctly demonstrates movement along a straight line to the right to the left and beyond	Correctly demonstrates movement along a straight line to the right and to the left	Inaccurately demonstrates movement along a straight line to the right and to the left	Major inaccuracies in demonstrating movement along a straight line to the right and to the left

SHAPES

STRAND	Sub-strand/ Theme/ Topic (Suggested time)	Specific Learning Outcomes (ensure you cover knowledge (k), skills (s) and attitudes (a))	Suggested Learning Experiences (align to the level competency descriptors)	Key Inquiry Question(s)
GEOMETRY	3.2 SHAPES 4 lessons	<p>by the end of the sub strand the learner should be able to:</p> <ul style="list-style-type: none"> a) Sort and group shapes within the environment b) Name different shapes within the immediate environment c) Make patterns using different shapes d) Colour patterns of different shapes in the environment e) Appreciate the beauty of patterns in the environment 	<ul style="list-style-type: none"> • Learners could be asked to form groups and choose a leader and encouraged to cooperate and the qualities of leadership displayed. • Learner could be guided to make different shapes for sorting and grouping Learner with fine and gross motor difficulty could be provided with shapes to manipulate • Learners in pairs /groups discuss the properties of the shapes in the various groups. • Learners to identify and name the different shapes found in their classroom. • Learners in groups could make patterns, colour them and display them Learner with 	<ol style="list-style-type: none"> 1. What shapes can you identify in your school?

			gross and fine motor difficulty could be assisted by peers	
Core-Competence to be developed : Communication and collaboration ; as learners discuss how to make patterns				
Link to PCIs: Citizenship: leadership development, Social cohesion- as they work in groups Life skills: Self- esteem and awareness			Link to Values: <ul style="list-style-type: none"> • Respect • Responsibility unity	
Links to other subject(s): Movement and creative activities, Environmental activities			Suggested Community Service Learning Learners could visit pre-school classes and beautify the walls using patterns drawn on manila paper, plant flowers in patterns(pro assistive devices for mobility and manipula	
Suggested Non formal Activity to support learning: Marking games/ sports fields			Suggested assessment: written exercises Oral questions, observation	
Suggested Resources; Manila paper, crayons/ paint Assistive devices-prosthesis, orthotic and mobility devices				

Assessment Rubric

Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Correctly makes patterns involving rectangles, circles, triangles, ovals, squares and beyond	Correctly makes patterns involving rectangles, circles, triangles, ovals and squares	Inaccurately makes patterns involving rectangles, circles, triangles, ovals and squares	Major inaccuracies in making patterns involving rectangles, circles, triangles, ovals and squares

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
- Orthosis
- 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).