



**REPUBLIC OF KENYA  
MINISTRY OF EDUCATION**

**LOWER PRIMARY SCHOOL CURRICULUM DESIGN**

**MATHEMATICAL ACTIVITIES**

**GRADE 3**

**FOR LEARNERS WITH VISUAL IMPAIRMENT**



**KENYA INSTITUTE OF CURRICULUM DEVELOPMENT**  
*A Skilled and Ethical Society*

First Published in 2017

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## **FOREWORD**

The Government of Kenya is committed to ensuring that policy objectives for Education, Training and Research meet the aspirations of the Constitution of Kenya 2010, the Kenya Vision 2030, National Curriculum Policy 2019, the United Nations Sustainable Development Goals (SDGs) and the Regional and Global conventions to which Kenya is a signatory. Towards achieving the mission of Basic Education, the Ministry of Education (MoE) has successfully and progressively rolled out the implementation of the Competency Based Curriculum (CBC) at Pre-Primary, Primary and Junior School levels.

The implementation of Competency Based Curriculum involves monitoring and evaluation to determine its success. After the five-year implementation cycle, a summative evaluation of the primary education cycle was undertaken to establish the achievement of learning outcomes as envisaged in the Basic Education Curriculum Framework. The Government of Kenya constituted a Presidential working Party on Education Reforms(PWPER) in 2022 to address salient issues affecting the education sector. PWPER made far reaching recommendations for basic education that necessitated curriculum review. The recommendations of the PWPER, monitoring reports, summative evaluation, feedback from curriculum implementers and other stakeholders led to rationalisation and review of the basic education curriculum.

The reviewed Grade three curriculum designs for learners with blindness build on competencies attained by learners at Grade two *Emphasis* at this grade is the development of basic literacy, numeracy and skills for interaction with the environment.

The curriculum designs present National Goals of Education, essence statements, general and specific expected learning outcomes for the subjects as well as strands and sub strands. The designs also outline suggested learning experiences, key inquiry questions, core competencies, Pertinent and Contemporary Issues (PCIs), values, and assessment rubric.

It is my hope that all Government agencies and other stakeholders in Education will use the designs to plan for effective and efficient implementation of the CBC.

**HON. EZEKIEL OMBAKI MACHOGU, CBS**  
**CABINET SECRETARY,**  
**MINISTRY OF EDUCATION.**

## **PREFACE**

The Ministry of Education (MoE) nationally implemented Competency Based Curriculum (CBC) in 2019. Grade one is the first grade of Primary education level while Grade 6 is the final grade of the level in the reformed education structure.

The reviewed Grade four curriculum furthers implementation of the CBC from Grade three in Primary level. The curriculum provides opportunities for learners to focus in a field of their choice to form a foundation for further education and training and/or gain employable skills. This is very critical in the realisation of the Vision and Mission of the on-going curriculum reforms as enshrined in the Sessional Paper No. I of 2019 whose title is: Towards Realizing Quality, Relevant and Inclusive Education and Training for Sustainable Development in Kenya. The Sessional Paper explains the shift from a content-focused curriculum to a focus on **nurturing every learner's potential**.

Therefore, the Grade four curriculum designs for learner Learners with Hearing Impairment are intended to enhance the learners' development in the CBC core competencies, namely: Communication and Collaboration, Critical Thinking and Problem Solving, Creativity and Imagination, Citizenship, Digital Literacy, learning to Learn and Self-efficacy.

The curriculum designs provide suggestions for interactive and differentiated learning experiences linked to the various sub strands and the other aspects of the CBC. They also offer several suggested learning resources and a variety of assessment techniques. It is expected that the designs will guide teachers to effectively facilitate learners to attain the expected learning outcomes for Grade four and prepare them for smooth transition to Grade five. Furthermore, it is my hope that teachers will use the adapted designs to make learning interesting, exciting and enjoyable.

**DR. BELIO KIPSANG', CBS  
PRINCIPAL SECRETARY  
STATE DEPARTMENT FOR BASIC EDUCATION  
MINISTRY OF EDUCATION**

## **ACKNOWLEDGEMENT**

The Kenya Institute of Curriculum Development (KICD) Act Number 4 of 2013 (Revised 2019) mandates the Institute to develop and review (*SNE adapt*) curricula and curriculum support materials for basic and tertiary education and training. The curriculum development process for any level of education involves thorough research, international benchmarking and robust stakeholder engagement. Through a systematic and consultative process, the KICD conceptualised the Competency Based Curriculum (CBC) as captured in the Basic Education Curriculum Framework (BECF)2017, that responds to the demands of the 21<sup>st</sup> Century and the aspirations captured in the Constitution of Kenya 2010, the Kenya Vision 2030, East African Community Protocol, International Bureau of Education Guidelines and the United Nations Sustainable Development Goals (SDGs).

KICD receives its funding from the Government of Kenya to facilitate successful achievement of the stipulated mandate and implementation of the Government and Sector (Ministry of Education (MoE) plans. The Institute also receives support from development partners targeting specific programmes. The revised Grade three curriculum designs for learners with Visual Impairment were developed and adapted with the support of the World Bank through the Kenya Primary Education Equity in Learning Programme (KPEELP); a project coordinated by MoE. Therefore, the Institute is very grateful for the support of the Government of Kenya, through the MoE and the development partners for policy, resource and logistical support. Specifically, special thanks to the Cabinet Secretary-MoE and the Principal Secretary – State Department of Basic Education,

I also wish to acknowledge the KICD curriculum developers and other staff, all teachers, educators who took part as panelists; the Semi-Autonomous Government Agencies (SAGAs) and representatives of various stakeholders for their roles in the development and adaptation of the Grade three curriculum designs for learners with blindness. In relation to this, I acknowledge the support of the Chief Executive Officers of the Teachers Service Commission (TSC) and the Kenya National Examinations Council (KNEC) for their support in the process of developing and adapting these designs. Finally, I am very grateful to the KICD Council Chairperson and other members of the Council for very consistent guidance in the process.

I assure all teachers, parents and other stakeholders that this curriculum design will effectively guide the implementation of the CBC at Grade -- and preparation of learners with blindness for transition to Grade three.

**PROF. CHARLES O. ONG'ONDO, PhD, MBS**  
**DIRECTOR/CHIEF EXECUTIVE OFFICER**  
**KENYA INSTITUTE OF CURRICULUM DEVELOPMENT**

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## **NATIONAL GOALS OF EDUCATION**

### **1. Foster nationalism, patriotism, and promote national unity**

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

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

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

#### **a) Social Needs**

Education should instill social and adaptive skills in the learner for effective participation in community and national development.

#### **b) Economic Needs**

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

#### **c) Technological and Industrial Needs**

Education should provide the learner with necessary competences for technological and industrial development in tandem with changing global trends.

### **3. Promote individual development and self-fulfillment**

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

#### **Promote sound moral and religious values**

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

### **5. Promote social equity and responsibility**

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

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

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

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

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

**8. Good health and environmental protection**

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



**LESSON ALLOCATION FOR LOWER PRIMARY (GRADE 1-3)**

<b>S/ No.</b>	<b>Learning Area</b>	<b>No. of Lessons</b>
1	Mathematical Activities for Learners with Visual Impairment	5
2	English Language Activities for Learners with Visual Impairment	5
3	Environmental Activities for Learners with Visual Impairment	4
4	Creative Activities for Learners with Visual Impairment	7
5	Religious Education Activities	3
6	Kiswahili language activities for Learners with Visual Impairment	4
7	Braille Literacy Activities	2
8.	Pastoral/ Religious Instruction Programme	1
	<b>Total</b>	<b>31</b>

**LEVEL LEARNING OUTCOMES FOR PRIMARY EDUCATION**

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

- a) Communicate appropriately using verbal and or non-verbal modes in a variety of contexts.
- b) Apply acquired knowledge, skills, values and attitudes in everyday life.
- c) Demonstrate social skills, moral and religious values for positive contribution to society.
- d) Exploit one's talents for individual development and self-fulfillment.
- e) Explore, manipulate, manage and conserve the environment for learning and sustainable development.
- f) Use digital literacy skills for learning and enjoyment.
- g) Value Kenya's rich and diverse cultural heritage for harmonious living.
- h) Appreciate the need for, and importance of interdependence of people and nations

**ESSENCE STATEMENT**

Mathematics is a learning area that involves computation in numbers and arithmetic, shapes, spatial relations and information processing in the form of data. It is a vehicle of development and improvement of a country's economic development. By learning mathematics, learners develop an understanding of numbers, logical thinking skills and problem-solving skills. Mathematics is applied in business, social and political worlds. At this level mathematics will build on the competencies acquired by the learner in the early years of education. Learning mathematics will also enhance the learner's competencies in numeracy as a foundation of STEM at the higher levels of Education cycle. Mathematics is also a subject of enjoyment and excitement as it gives learners opportunities for creative work and fun.

**SUBJECT GENERAL LEARNING OUTCOME**

By the end of primary education, the learner with visual impairment should be able to:

1. Demonstrate mastery of number concepts by working out problems in day-to-day life.
2. Apply measurement skills to find solutions to problems in a variety of contexts.
3. Apply properties of geometrical shapes and spatial relationships in real life experiences.
4. Apply data handling skills to solve problems in day-to-day life.
5. Analyze information using algebraic expressions in real life situations.
6. Apply mathematical ideas and concepts to other learning areas or subjects and in real life contexts.
7. Develop confidence and interest in mathematics for further learning and enjoyment.
8. Develop values and competencies for a cohesive harmonious living in the society.
9. Manage pertinent and contemporary issues for enhanced inter-personal relationship.



**SUMMARY OF STRANDS AND SUB STRANDS**

<b>Strands</b>	<b>Sub Strands</b>	<b>Suggested Number of Lessons</b>
1.0 Numbers	1.1 Number Concept	8
	1.2 Whole Numbers	20
	1.3 Addition	20
	1.4 Subtraction	20
	1.5 Multiplication	12
	1.6 Division	8
	1.7 Fractions	12
2.0 Measurements	2.1 Length	6
	2.2 Mass	6
	2.3 Capacity	8
	2.4 Time	10
	2.5 Money	10
3.0 Geometry	3.1 Lines	5
	3.2 Shapes	5
<b>Total Number of Lessons</b>		<b>150</b>

**GRADE THREE**

**1.0 Numbers**

<b>Strand</b>	<b>Sub-strand</b>	<b>Specific Learning Outcomes</b>	<b>Suggested Learning Experiences</b>	<b>Suggested Key Inquiry Question(s)</b>
<b>1.0 Numbers</b>	<b>1.1 Number Concept</b> (8 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) order objects according to size,</p> <p>b) denote ordinate numbers in braille, <i>(for learners with blindness)</i></p> <p>c) identify position of objects from 1<sup>st</sup> to 20<sup>th</sup>,</p> <p>d) write the position of objects in numbers symbols and in words,</p> <p>e) appreciate the use of positioning items in real life situations.</p>	<ul style="list-style-type: none"> <li>● Learners discuss and arrange real objects collected from the environment according to size starting with the smallest to the largest and from the largest to the smallest. Learners with blindness are orientated into the environment and are guided to explore to collect and arrange objects according to size.</li> <li>● Learners with blindness are guided to read and write ordinate numbers in braille from 1<sup>st</sup> to 20<sup>th</sup> and share with peers in class.</li> <li>● Learners are guided to identify the position of an object from a reference point using 1st, 2<sup>nd</sup> up to 20<sup>th</sup>. Learners with blindness are given orientation on positioning of objects.</li> <li>● Learners race for a distance and each is assigned the correct position using the words first, second up to Twentieth position depending on when they finish the race. Write their positions in the race in symbols and in words. Learners with blindness are paired with sighted guides during the racing activity.</li> <li>● Learners relate numbers 1 –20 to positions</li> </ul>	<ol style="list-style-type: none"> <li>1. How do we tell our positions in a competition?</li> <li>2. Why do we order objects?</li> <li>3. How do we denote ordinate numbers in braille.</li> </ol>

			<p>first, second up to 20<sup>th</sup> and relate to real life situations. For example, birth number in a family; 1<sup>st</sup> born, 2<sup>nd</sup> born.</p> <ul style="list-style-type: none"> <li>Learners are guided to use digital devices with assistive technology to play digital games involving position 1<sup>st</sup> - 20<sup>th</sup>.</li> </ul>	
<p><b>Core Competencies to be developed:</b></p> <ul style="list-style-type: none"> <li><b>Communication and collaboration:</b> learner work together in groups as they discuss and arrange real objects collected from the environment according to size</li> <li><b>Digital literacy:</b> learner plays games involving position of items from 1 to 20 using digital devices.</li> </ul>				
<p><b>Values:</b></p> <ul style="list-style-type: none"> <li><b>Integrity:</b> learner displays honesty as they assign each other the rightful positions after a timed race.</li> <li><b>Unity:</b> learner plays games together involving position of items from 1 to 20 using digital devices.</li> </ul>				
<p><b>Pertinent and Contemporary Issues (PCIs):</b></p> <ul style="list-style-type: none"> <li><b>Sports and games:</b> learner participates in a race and assign each other the correct position.</li> <li><b>Friendship formation:</b> learner plays games involving position 1 to 20 using digital devices and other resources with peers.</li> </ul>				
<p><b>Link to other learning areas:</b> The learner is able to relate the skills used in writing the position of objects in numbers symbols and in words to functional writing in English Language Activities.</p>				
<p><b>Suggested Learning resources:</b> Real objects like marbles, sticks, stones, grains, digital devices with assistive technology such as screen readers, adapted keyboard and screen magnifiers.</p>				

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested 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> <ul style="list-style-type: none"> <li>a) count numbers forward up to 1000 starting from any point,</li> <li>b) count numbers backward in multiples of 100 from 1000,</li> <li>c) identify place value of numbers up to hundreds,</li> <li>d) read numbers 1-1000 in symbols,</li> <li>e) read and write numbers 1-100 in words,</li> <li>f) identify missing numbers in number patterns up to 1000,</li> <li>g) play games involving number patterns up to 1000.</li> </ul>	<ul style="list-style-type: none"> <li>• Learners with low vision are guided to count forward in 1's, 10's, and 100's starting from any point up to 1000 using a rope with appropriate colour contrast for the skipping game in a safe environment. Learners with blindness are guided to count forward in 1's, 10's and 100's starting from any point up to 1000 by being orientated to jump up and down in a safe environment.</li> <li>• Learners practise through play using print number cards in appropriate font and colour contrast or braille number cards counting numbers backward in multiples of 100 from 1000.</li> <li>• Learners with low vision discuss place value up to hundreds using place value apparatus in appropriate font and colour contrast in class. Learners with blindness are guided to discuss place value up to hundreds using tactile place value charts.</li> <li>• Learners read numbers 1-1000</li> </ul>	<ol style="list-style-type: none"> <li>1. How would you get the total number of people in a group?</li> <li>2. How do you tell place value of a digit in a number?</li> </ol>

			<p>in symbols starting from any point.</p> <ul style="list-style-type: none"> <li>• Learners take turns to read and write numbers 1-100 in words using print or braille number cards.</li> <li>• Learners are guided to create number patterns up to 1000 and share with other groups.</li> <li>• Learners play adapted games involving whole numbers up to 1000 using digital devices with assistive technology and other resources.</li> </ul>	
<p><b>Core Competencies to be developed:</b></p> <ul style="list-style-type: none"> <li>• <b>Imagination and creativity:</b> learner creates patterns involving addition up to a sum of 1000.</li> <li>• <b>Learning to learn:</b> learner practises addition horizontally and vertically using a variety of place value apparatus.</li> </ul>				
<p><b>Values:</b></p> <ul style="list-style-type: none"> <li>• <b>Respect:</b> learner portrays patience as he/she works with peers to practise addition horizontally and vertically using place value apparatus.</li> </ul>				
<p><b>Pertinent and Contemporary Issues (PCIs):</b> Sustainable consumption: learner improvises place value apparatus such as abacus, place value tins or pockets using locally available materials.</p>				
<p><b>Link to other learning areas:</b> The learner is able to relate the skills used in creating patterns to the pattern making skills in Creative Activities.</p>				
<p><b>Suggested Learning resources:</b> A number line drawn on the ground/floor, place value chart, a rope, number cards, Circular and rectangular cut outs, marbles, bottle tops, sticks, grains, stones, manilla papers</p>				

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
<b>1.0 Numbers</b>	<b>1.3 Addition (25 lessons)</b>	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) add a 3-digit number up to a 2-digit number without regrouping with sum not exceeding 1000,</p> <p>b) add a 3-digit number to up to a 2-digit number with single regrouping with sum not exceeding 1000,</p> <p>c) add two 3-digit numbers without regrouping,</p> <p>d) add two 3-digit numbers with single regrouping with sum not exceeding 1000,</p> <p>e) create number patterns involving addition up to 1000,</p> <p>f) practice addition of numbers using digital devices or other resources.</p>	<ul style="list-style-type: none"> <li>● Learners with low vision are guided to add a 3- digit number to up to a 2- digit number without regrouping with a sum not exceeding 1000 using relevant place value apparatus. Learners with blindness are guided to align digits appropriately according to place value and use abacus, counters to perform the operation.</li> <li>● Learners with low vision practise adding horizontally and vertically using place value apparatus. Learners are guided to align digits appropriately according to place value and use abacus, counters to perform the operation. Learners with blindness are guided to arrange figures horizontally and vertically in braille. Use an abacus to add numbers observing the place value concept.</li> <li>● Learners practise adding a 3- digit number to up to a 2- digit number with single regrouping with sum not exceeding 1000.</li> <li>● Learners are guided to practise</li> </ul>	<ol style="list-style-type: none"> <li>1. How do you arrange numbers when adding?</li> <li>2. How can you get the next number in a given pattern?</li> </ol>



			<p>adding two 3- digit numbers without regrouping with a sum not exceeding 1000 using place value tins.</p> <ul style="list-style-type: none"> <li>• Learners are guided to add two 3- digit numbers with single regrouping with sum not exceeding 1000 using abacus.</li> <li>• Learners are guided to create and work out missing numbers in patterns involving addition up to 1000.</li> <li>• Learners are guided to use digital devices with assistive technology or other adapted resources for activities involving additions.</li> </ul>	
<p><b>Core Competencies to be developed:</b></p> <ul style="list-style-type: none"> <li>• <b>Imagination and creativity:</b> learner creates unique patterns involving addition up to a sum of 1000.</li> <li>• <b>Learning to learn:</b> learner practises addition horizontally and vertically using a variety of place value apparatus.</li> </ul>				
<p><b>Values:</b></p> <ul style="list-style-type: none"> <li>• <b>Respect:</b> learner portrays patience as he/she works with peers to practise addition horizontally and vertically using place value apparatus.</li> </ul>				
<p><b>Pertinent and Contemporary Issues (PCIs):</b></p> <ul style="list-style-type: none"> <li>• Sustainable consumption: learner improvises place value apparatus such as abacus, place value tins or pockets using locally available materials.</li> </ul>				
<p><b>Link to other learning areas:</b></p> <p>The learner is able to relate the skills used in creating patterns to the pattern making skills in Creative Activities.</p>				
<p><b>Suggested Learning resources:</b></p> <p>Basic addition facts table, place value chart, abacus, tins.</p>				

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
<b>1.0 Numbers</b>	<b>1.4 Subtraction (20 lessons)</b>	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> <li>a) subtract a 2- digit number from a 3- digit number without regrouping,</li> <li>b) subtract a 2- digit number from a three-digit number with single regrouping,</li> <li>c) subtract a 3- digit number from a 3- digit number with single regrouping,</li> <li>d) subtract up to 3- digit numbers involving missing numbers with single regrouping,</li> <li>e) work out missing numbers in number patterns involving subtraction up to 1000,</li> <li>f) appreciate subtraction in real life situations.</li> </ul>	<ul style="list-style-type: none"> <li>• Learners with low vision are guided to work out subtraction of up to 3- digit numbers without regrouping using place value pockets in appropriate font and colour contrast and share findings with others. Learners with blindness are guided to align digits appropriately according to place value and use abacus, counters to perform the operation.</li> <li>• Learners take turns to work out subtraction of up to 3- digit numbers with single regrouping using print or braille place value charts.</li> <li>• Learners are guided to work out missing numbers in subtraction of up to 3- digit numbers with single regrouping using a variety of strategies.</li> <li>• Learners are guided to play games involving subtraction using digital devices with assistive technology and other resources.</li> </ul>	<ol style="list-style-type: none"> <li>1. Why do you regroup during subtraction?</li> <li>2. How do you identify the missing number in a number pattern involving subtraction?</li> </ol>

			<ul style="list-style-type: none"> <li>Learners discuss how to work out missing numbers in patterns involving subtraction up to 1000.</li> </ul>	
<b>Core Competencies to be developed:</b> <ul style="list-style-type: none"> <li><b>Digital literacy:</b> learner plays games involving subtraction using digital devices.</li> <li><b>Creativity and imagination:</b> learner comes up with ideas to create number patterns involving subtraction.</li> </ul>				
<b>Values:</b> <ul style="list-style-type: none"> <li><b>Unity:</b> learner jointly works out subtraction of up to 3-digit numbers without regrouping using place value pockets.</li> <li><b>Respect:</b> learner accommodates diverse opinions as they discuss how to work out missing numbers in patterns.</li> </ul>				
<b>Pertinent and Contemporary Issues (PCIs):</b> <b>Problem solving skills:</b> learner works out missing numbers in subtraction of up to 3-digit numbers with single regrouping using a variety of strategies.				
<b>Link to other learning areas:</b> <ul style="list-style-type: none"> <li>The learner is able to relate skills used in discussion to speaking and listening skills in English and Kiswahili Language Activities.</li> </ul>				
<b>Suggested Learning resources:</b> Bottle tops, marbles, stones, grains, number line drawn on the ground/floor, multiplication tables, abacus.				

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	1.5 Multiplication (10 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) model multiplication as repeated addition using numbers 1,2,3,4 and 5 by 4 and 5,</p> <p>b) multiply a single digit number by a single digit number,</p> <p>c) multiply single digit numbers by 10,</p> <p>d) appreciate multiplication of numbers as repeated addition.</p>	<ul style="list-style-type: none"> <li>• Learners with low vision are guided to model multiplication as repeated addition of numbers 1, 2, 3, 4 and 5 by 4 and 5 using counters with appropriate colour contrast or braille counters. Learners with blindness are orientated to model application as repeated addition and be guide to write braille symbol for multiplication.</li> <li>• Learners are guided to multiply a single digit number by a single digit number using print or tactile multiplication chart.</li> <li>• Learners take turns to practise multiplication of single digit numbers by 10 using print or tactile multiplication tables.</li> <li>• Learners are guided to play adapted digital games involving multiplication.</li> </ul>	<ol style="list-style-type: none"> <li>1. How can you work out multiplication using repeated addition?</li> <li>2. How do you model multiplication as repeated addition?</li> </ol>
<p><b>Core Competencies to be developed:</b></p> <ul style="list-style-type: none"> <li>• <b>Learning to learn:</b> learner discovers the connection between repeated addition of numbers and multiplication.</li> <li>• <b>Creativity and imagination:</b> learner models multiplication as repeated addition of numbers.</li> </ul>				

<b>Values:</b> <ul style="list-style-type: none"><li>• <b>Respect:</b> learner appreciates others as they take turns to practise multiplication of a single digit numbers by 10 using multiplication tables.</li><li>• <b>Social justice:</b> learner fosters fairness and justice among peers as they play games involving multiplication.</li></ul>
<b>Pertinent and Contemporary Issues (PCIs):</b> <ul style="list-style-type: none"><li>• <b>Environmental conservation:</b> learner re-uses improvised learning materials and objects such as charts and counters.</li></ul>
<b>Link to other learning areas:</b> <p>The learner is able to relate skills used in playing games to performance skills in Creative Activities.</p>
<b>Suggested Learning resources:</b> <p>Bottle tops, marbles, stones, sticks, grains, print and braille multiplication tables, digital devices with assistive technology such as screen reader, screen magnifiers and tactile keyboards.</p>

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
<b>1.0 Numbers</b>	<b>1.6 Division (8 lessons)</b>	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> <li>a) represent division of numbers up to 50 by 4 and 5 as repeated subtraction,</li> <li>b) divide a 2-digit number by a single digit number without a remainder,</li> <li>c) divide a 2-digit number by 10 without a remainder,</li> <li>d) appreciate division as repeated subtraction in real life situations.</li> </ul>	<ul style="list-style-type: none"> <li>• Learners are guided to take away from a group a specific number of objects at a time until all are finished and then count the number of small groups formed and share their findings with others. Learners with blindness are oriented to explore number of objects in a group before taking away a specific number from the group.</li> <li>• Learners to discuss and model division as repeated subtraction of numbers up to 50 by 4 and 5 using counters. Learners with blindness are guided to denote braille symbol for multiplication.</li> <li>• Learners are guided to practice division of multiples of ten from 90 by 10 using print or braille multiplication tables.</li> <li>• Learners work out division of a 2-digit number by a single digit number without a remainder.</li> <li>• Learners carry out division of a 2-digit number by 10 without a remainder.</li> <li>• Learners play videos games involving division with peers.</li> </ul>	<ol style="list-style-type: none"> <li>1. How can you represent division as repeated subtraction?</li> <li>2. How can we use the multiplication table to work out division challenges?</li> </ol>

<p><b>Core Competencies to be developed:</b></p> <ul style="list-style-type: none"> <li>• <b>Communication and collaboration:</b> learner discusses division as repeated subtraction of numbers.</li> <li>• <b>Learning to learn:</b> learner discovers the connection between repeated subtraction and division.</li> </ul>
<p><b>Values:</b></p> <ul style="list-style-type: none"> <li>• <b>Social justice:</b> learner shares objects equitably by repeatedly taking away from a group a specific number of objects at a time until all are finished.</li> <li>• <b>Unity:</b> learner plays videos games involving division with peers.</li> </ul>
<p><b>Pertinent and Contemporary Issues (PCIs):</b></p> <ul style="list-style-type: none"> <li>• <b>Critical thinking:</b> learner models division as repeated subtraction of numbers up to 50 by 4 and 5 using counters.</li> </ul>
<p><b>Link to other learning areas:</b></p> <ul style="list-style-type: none"> <li>• The learner is able to relate skills used in discussion to listening and speaking skills in English and Kiswahili Language Activities.</li> </ul>
<p><b>Suggested Learning resources:</b> Print and braille Basic addition facts table, place value chart and multiplication table.</p>

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
<b>1.0 Numbers</b>	<b>1.7 Fractions (10 lessons)</b>	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) identify <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math> and <math>\frac{1}{8}</math> as part of a whole,</p> <p>b) identify <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math> and <math>\frac{1}{8}</math> as part of a group,</p> <p>c) appreciate fractions as part of a whole in daily activities.</p>	<ul style="list-style-type: none"> <li>• Learners with low vision are guided to safely use different circular based objects to make circular cut-outs from manila papers. Learners with blindness are given one on one demonstration on how to make the cut-outs as they observe safety.</li> <li>• Learners fold circular cut-outs into 2 equal parts and identify one part as <math>\frac{1}{2}</math> of the whole. Learners with blindness are given one on one orientation on how to fold the manila paper and manipulate it to identify one part as <math>\frac{1}{2}</math> of the whole.</li> <li>• Learners with low vision are guided to make rectangular cut-outs and fold them into 4 equal parts to get a quarter of a whole and identify each part as <math>\frac{1}{4}</math> of the whole. Learners with blindness are given on one demonstration to make the rectangular cut-outs and fold it into 4 to get a quarter.</li> <li>• In pairs, learners with low vision are guided to make rectangular cut-outs and fold to get 8 equal parts and identify one part as <math>\frac{1}{8}</math> of the group. Learners with blindness are given one on one demonstration to make the rectangular cut-outs and fold it into 8 to get an eighth.</li> </ul>	<ol style="list-style-type: none"> <li>1. How can you represent a fractions as a part of the whole?</li> <li>2. How can you represent a half, a quarter or an eighth of a group?</li> </ol>



			<ul style="list-style-type: none"> <li>• Learners are guided to divide a number of objects into 2 equal groups and identify each of the small groups as <math>\frac{1}{2}</math> of the group.</li> <li>• Learners are guided to divide a number of objects into 4 equal groups and identify each of the small groups as <math>\frac{1}{4}</math> of the group.</li> <li>• Learners are guided to divide a number of objects into 8 equal groups and identify each of the small group as <math>\frac{1}{8}</math> of the group.</li> <li>• In groups, learners are guided to play games involving <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math> and <math>\frac{1}{8}</math> using digital devices with assistive technology or other resources.</li> </ul>	
<b>Core Competencies to be developed:</b>				
<ul style="list-style-type: none"> <li>• <b>Critical thinking and problem solving:</b> learner divides a number of objects into 8 equal groups and identify each of the small groups as an eighth of a whole.</li> <li>• <b>Learning to learn:</b> learner folds circular cut-outs into 2 equal parts and identify one part as <math>\frac{1}{2}</math> of the whole.</li> </ul>				
<b>Values:</b>				
<b>Unity:</b> learner plays games involving $\frac{1}{2}$ , $\frac{1}{4}$ and $\frac{1}{8}$ using digital devices or other resources with peers.				
<b>Pertinent and Contemporary Issues (PCIs):</b>				
<b>Safety issues:</b> learner safely makes circular cut-outs from manila papers.				
<b>Link to other learning areas:</b>				
The learner is able to relate folding and cutting of manilla papers to pattern making in Creative Activities.				

**Suggested learning resources:**

Digital devices with assistive technology such as screen magnifiers, screen readers and adapted keyboard, manilla paper, cutting tools.

**SUGGESTED ASSESSMENT RUBRICS**

Indicator	Level	Exceeds Expectations	Meets - Expectations	Approaches Expectations	Below Expectations
Ability to: a) identify position of objects from 1 <sup>st</sup> to 20 <sup>th</sup> and write the position in number symbols and in words. b) count numbers forward up to 1000 starting from any point and backward from 1000 in multiples of 100. c) identify place value of numbers up to hundreds. d) to read numbers 1 to 1000 in symbols and read and write numbers 1 to 100 in words. e) read numbers 1 to 1000 in symbols and read and write numbers 1 to 100 in words. f) to add two 3-digit numbers with single regrouping with sum not exceeding 1000. g) subtract up to 3-digit numbers with single regrouping. h) multiply a single digit number by a single digit number and by 10. i) divide a 2-digit number by a single digit number and by 10 without a remainder. j) create number patterns involving addition, subtraction, multiplication and division of numbers up to 1000. k) identify $\frac{1}{2}$ , $\frac{1}{4}$ and $\frac{1}{8}$ as part of a whole and as part of a group.		The learner demonstrates all the 11 skills.	The learner demonstrates 8 to 11 skills.	The learner demonstrates 2 to 8 skills	The learner demonstrates 1 or no skill.

## 2.0 MEASUREMENT

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	<b>2.1 Length (6 lessons)</b>	By the end of the sub-strand, the learner should be able to: a) measure length in metres, b) add length in metres, c) subtract length in metres, d) estimate length up to 10 metres, e) appreciate measuring length in metres in real life situations.	<ul style="list-style-type: none"> <li>• Learners with low vision are guided to use metre sticks with appropriate colour contrast to measure various distances and record their results. Learners with blindness are given one on one demonstration and orientation on how to use metre sticks to measure distances and record their results.</li> <li>• Learners with low vision are guided to prepare 5 metres long strings with knots at intervals of one metre to measure long distances. Learners with blindness are given one on one demonstration to tie knots on a string and align the string on the distance to be measured.</li> <li>• Learners are guided to measure the lengths of the 4 walls in their classroom and add the lengths. Learners with blindness are guided to explore the walls of the class room and are supported to align the string on the walls and take measurements.</li> <li>• Learners are guided to measure the length of the chalkboard and the teacher's table in metres and work out the difference in length. Learners with</li> </ul>	<ol style="list-style-type: none"> <li>1. Why do we measure the distances?</li> <li>2. How do you determine total lengths?</li> </ol>

			<p>blindness are guided to explore the chalkboard and the teacher's table and are supported to align the string on them and take measurements.</p> <ul style="list-style-type: none"> <li>• Learners work out questions involving addition of length in real life situations.</li> <li>• Learners work out subtraction of length in metres based on real life situations.</li> <li>• Learners are guided to estimate distances around the school up to 10 metres and measure and compare results. Learners with blindness are paired with sighted guide to explore distances around the school then estimate.</li> <li>• Learners are guided to use digital devices with assistive technology to take videos of others measuring length then play back and discuss their results. Learners with blindness are given one on one demonstration on how to use digital devices with assistive technology to record audio visual clips.</li> </ul>	
<b>Core Competencies to be developed:</b>				
<ul style="list-style-type: none"> <li>• <b>Digital literacy:</b> learner uses digital devices to record videos of classmates measuring length.</li> <li>• <b>Critical thinking and problem solving:</b> learner works out questions involving addition of length in real life situations.</li> </ul>				
<b>Values:</b>				
<ul style="list-style-type: none"> <li>• <b>Unity:</b> learner appreciates peers' effort as they measure the lengths of various objects in and around the classroom.</li> </ul>				
<b>Pertinent and Contemporary Issues (PCIs):</b>				
<ul style="list-style-type: none"> <li>• <b>Self-efficacy:</b> learner estimates distances around the school compound up to 10 metres, measure the actual distances and compare results.</li> </ul>				

- **Social cohesion:** learner works harmoniously with peers to estimate distances around the school compound.

**Link to other learning areas:**

- The learner is able to relate skills used in preparing 5 metres long strings with knots at intervals of one metre to weaving skills in Creative Activities.

**Suggested Learning resources:**

Books, pencils, rulers, sticks, bottles, metre rule, metre sticks, digital devices, strings, digital devices with assistive technology such as screen readers, screen magnifiers and tactile keyboards.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
<b>2.0 Measurement</b>	<b>2.2 Mass (6 lessons)</b>	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> <li>a) denote kilogram in braille, <i>(for learners with blindness)</i></li> <li>b) measure mass in kilograms,</li> <li>c) add mass in kilograms,</li> <li>d) subtract mass in kilograms,</li> <li>e) estimate mass up to 5 kilograms,</li> <li>f) appreciate measuring mass of objects in kilograms.</li> </ul>	<ul style="list-style-type: none"> <li>• Learners with blindness are guided to read and write braille symbol for kilogram in braille.</li> <li>• Learners with low vision are guided to collect safe materials to be used to measure mass in their immediate environment. Learners with blindness are given one on one demonstration and orientation on how to navigate their environment as they collect safe materials for measuring mass.</li> <li>• Learners are guided to make masses of 1kg using sand/ soil by measuring against the kilogram standard unit. Learners with blindness are given one on one demonstration on how make masses.</li> <li>• Learners are guided to measure mass of different objects in kilograms using an adapted beam balance and share their findings with others. Learners with blindness are guided to explore the beam balance and be guided on how to use it.</li> <li>• Learners with low vision are guided to role play in addition to mass in kilograms using items in the</li> </ul>	<ol style="list-style-type: none"> <li>1. How can you measure mass of materials?</li> <li>2. Why do we determine the mass of objects?</li> </ol>

			<p>classroom model shop. Learners with blindness are given proper orientation on the location of the class model shop and verbal description on how to role play.</p> <ul style="list-style-type: none"> <li>• Learners practise subtraction of masses in kilograms using items from the corner shop.</li> <li>• Learners are guided to use a 5kg mass to compare other masses.</li> <li>• Learners estimate mass up to 5kg and measure to confirm.</li> <li>• Learners are guided to use digital devices with assistive technology to play adapted digital games involving mass.</li> </ul>	
<p><b>Core competencies to be developed:</b></p> <ul style="list-style-type: none"> <li>• <b>Self-efficacy:</b> learner role plays addition of mass in kilograms using items in the classroom model shop.</li> <li>• <b>Critical thinking and problem solving:</b> learner makes masses of 1kg using sand or soil by measuring against the kilogram standard unit.</li> </ul>				
<p><b>Values:</b></p> <ul style="list-style-type: none"> <li>• <b>Respect:</b> learner shares experiences on measuring mass of different objects.</li> <li>• <b>Unity:</b> learner shares resources amicably as they make masses of objects to use in learning.</li> </ul>				
<p><b>Pertinent and Contemporary Issues (PCIs):</b></p> <ul style="list-style-type: none"> <li>• <b>Safety:</b> learner safely collects materials needed for learning from their immediate environment.</li> </ul>				
<p><b>Link to other learning areas:</b></p> <ul style="list-style-type: none"> <li>• The learner is able to relate skills used in preparing mass of different object to moulding in Creative Activities.</li> </ul>				
<p><b>Learning resources:</b> Masses of 1kg, soil, sand, beam balance, digital devices with assistive technology such as screen readers, screen magnifiers and tactile keyboards.</p>				

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	2.3 Capacity (8 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> <li>a) measure capacity in litres,</li> <li>b) add capacity in litres,</li> <li>c) subtract capacity in litres,</li> <li>d) estimate capacity up to 5 litres,</li> <li>e) appreciate measuring capacity of containers in Litres.</li> </ul>	<ul style="list-style-type: none"> <li>● Learners with low vision are guided to collect safe materials to be used to measure capacity in their immediate environment. Learners with blindness are given one on one demonstration and orientation on how to navigate their environment as they collect safe materials for measuring capacity.</li> <li>● Learners discuss and measure capacity of different containers using a 1 litre containers. Learners with blindness to be given one on one demonstration on how to measure capacity and be supported on to note the level of water.</li> <li>● In pairs, learners discuss and use water to measure capacity of different containers using 1 litre containers.</li> <li>● In groups, learners are guided to take turns to practise addition of capacity in litres in real life situations.</li> <li>● Learners are guided to take turns to practise subtraction of capacity in litres in real life situations.</li> <li>● Learners are guided to estimate capacity up to 5 Litres and</li> </ul>	<ol style="list-style-type: none"> <li>1. How do we measure capacity of different containers?</li> <li>2. How can you estimate capacity in litres?</li> </ol>



			measure to confirm using 1 Litre containers <ul style="list-style-type: none"> <li>• In groups, learners are guided to use digital devices with assistive devices to play adapted digital games involving capacity in real life situations.</li> </ul>	
<b>Core Competencies to be developed:</b> <ul style="list-style-type: none"> <li>• <b>Self-efficacy:</b> learner estimates the capacity of containers up to 5 litres, measure the actual capacities of the containers and compare the measurements.</li> <li>• <b>Communication and collaboration:</b> learners discuss and measure capacity of different containers using 1 litre containers.</li> </ul>				
<b>Values:</b> <ul style="list-style-type: none"> <li>• <b>Unity:</b> learners in turns practice addition of capacity in litres in real life situations.</li> <li>• <b>Responsibility:</b> learners care of the items for measuring capacity.</li> </ul>				
<b>Pertinent and Contemporary Issues (PCIs):</b> <b>Social cohesion:</b> learners play digital games involving capacity in real life situations with peers.				
<b>Link to other learning areas:</b> <ul style="list-style-type: none"> <li>• The learner is able to relate collection of safe materials in their immediate environment for learning to waste management in Environmental Activities.</li> </ul>				
<b>Suggested Learning resources:</b> Containers of different sizes, 1 litre containers, water, 5 litre containers, digital devices with assistive technology such as screen readers, screen magnifiers and tactile keyboards.				

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	2.4 Time (10 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>a) denote hours and minute as units of measuring time in braille. (<i>for learners with blindness</i>)</p> <p>b) identify the minute as a unit of measuring time,</p> <p>c) read and tell time using ‘past’ and ‘to’ the hour using the clock face,</p> <p>d) read and tell time using the digital clock or analogue clock,</p> <p>e) write time using ‘past’ and ‘to’ the hour,</p> <p>f) estimate time in hours,</p> <p>g) add time involving hours and minutes without conversion in real life situations,</p> <p>h) subtract time involving hours and minutes without conversion in real life situations,</p>	<ul style="list-style-type: none"> <li>• Learners with blindness are guided to read and write expressions involving hours and minutes in braille.</li> <li>• Learners with low vision are guided to draw a clock face in a manila paper or any other resource and divide into two parts through the centre and discuss what each division represents. Learners with blindness are guided to manipulate a tactile clock face divided into two parts and discuss what each division represents.</li> <li>• Learners discuss division on the clock face and identify the minute as a unit of measuring time.</li> <li>• Learners with low vision locate a minute on the clock face and discuss it as a unit of measuring time. Learners with blindness are guided to explore the clock face and locate the minute hand.</li> </ul>	<ol style="list-style-type: none"> <li>1. How do we read and tell time using digital and analogue clocks?</li> <li>2. How can you estimate time in hours?</li> </ol>

		<p>i) appreciate reading and telling time using digital and analogue clocks.</p>	<ul style="list-style-type: none"> <li>• Learners discuss how to tell time on the clock face using “past” and “to” the hour.</li> <li>• Learners discuss how to use the digital clock or talking digital clock and share their findings with others. Learners with blindness are guided to explore the digital clocks to identify its features and use it.</li> <li>• Learners with low vision take turns to read and tell time on a digital clock while learners with blindness listens and tells time on talking digital clock.</li> <li>• Learners are guided to estimate time in hours.</li> <li>• Learners are guided to add time involving hours and minutes without conversion in real life situations. Learners with blindness are guided to appropriately align hours and minute before adding.</li> <li>• Learners subtract time involving hours and minutes without conversion in real life situations. Learners with blindness are guided to appropriately align hours and minute before subtracting.</li> <li>• Learners discuss the importance of</li> </ul>	
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			keeping time in real life situations.	
<b>Core Competencies to be developed:</b> <ul style="list-style-type: none"> <li>● <b>Communication and collaboration:</b> learner discusses how to tell time on the clock face using “past” and “to” the hour.</li> <li>● <b>Learning to learn:</b> learner reads and tells time on analogue and digital clocks.</li> </ul>				
<b>Values:</b> <ul style="list-style-type: none"> <li>● <b>Respect:</b> learner accommodates diverse opinions as they discuss the importance of keeping time in real life situations.</li> <li>● <b>Peace:</b> learner displays tolerance as they in turns read and tell time on a digital clock.</li> </ul>				
<b>Pertinent and Contemporary Issues (PCIs):</b> <ul style="list-style-type: none"> <li>● <b>Social cohesion:</b> learner takes turn in activities and conversations as they read and tell time on analog and digital clocks.</li> </ul>				
<b>Link to other learning areas:</b> <ul style="list-style-type: none"> <li>● The learner is able to relate the skills used in drawing the clock face to drawing skills in Creative Activities.</li> </ul>				
<b>Learning resources:</b> Clock face, tactile clock face, manilla paper, digital talking clock.				

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
<b>2.0 Measurement</b>	<b>2.5 Money (10 lessons)</b>	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> <li>a) denote different currency in braille, (<i>for learners with blindness</i>)</li> <li>b) identify Kenyan currency notes up to sh.1000,</li> <li>c) count money in different denominations up to sh.1000,</li> <li>d) add money involving different denominations up to a sh.1000,</li> <li>e) subtract money involving different denominations up to a sh.1000,</li> <li>f) represent the same amount of money in different denominations,</li> <li>g) convert money into different denominations,</li> <li>h) use money to buy up to 3 items involving balance,</li> <li>i) appreciate spending and saving money in real life situations.</li> </ul>	<ul style="list-style-type: none"> <li>• Learners with blindness are guided to code different currency in braille and practice writing expressions with different currency in braille.</li> <li>• Learners use locally available materials to model Kenyan currency denominations for use in learning. Learners with blindness are supported to explore Kenyan currency and note its features before modelling it.</li> <li>• Learners with low vision are guided to sort out Kenyan currency notes according to their value up to sh.1000. Learners with blindness are guided to explore Kenyan currency notes and note their sizes and other unique features for proper identification.</li> <li>• Learners count Kenyan currency notes in different denominations up to sh1000 using real or imitation money.</li> <li>• Learners practise subtraction of money in real life situations up to sh.1000.</li> <li>• Learners practise addition of money in real life situations up to sh.1000.</li> </ul>	<ol style="list-style-type: none"> <li>1. How do you represent the same amount of money using different denominations?</li> <li>2. Why is spending and saving money important in real life situations?</li> <li>3. How do we denote different currency in braille?</li> </ol>

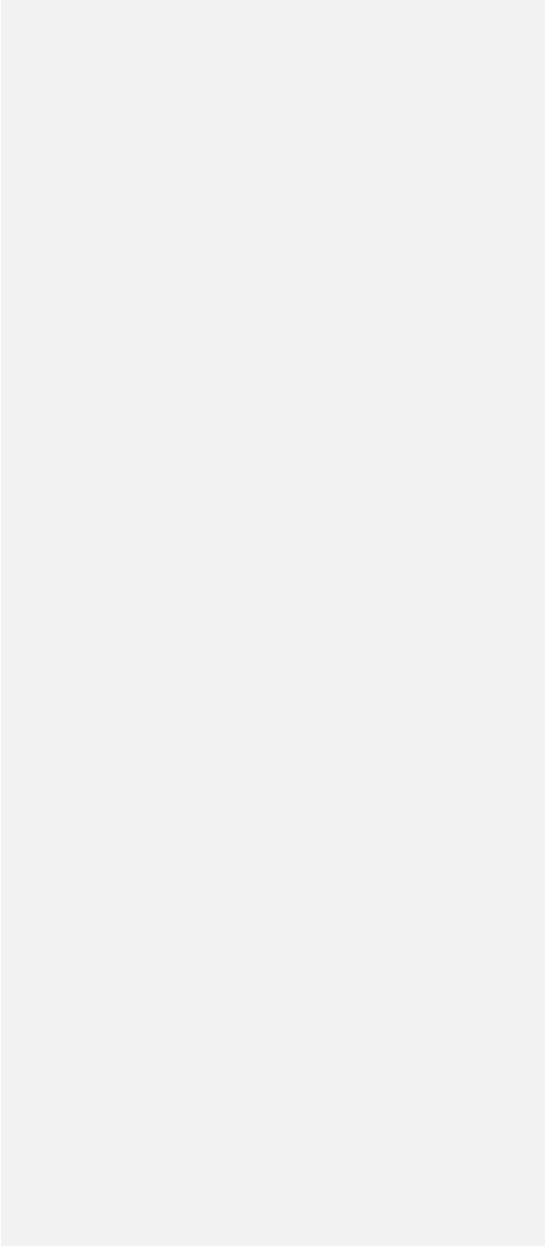
			<ul style="list-style-type: none"> <li>• In groups, learners role plays changing money into different denominations up to sh. 1000 in the classroom model shop.</li> <li>• Learners are guided to role play buying up to 3 items involving balance using real or imitation money up to sh.1000 in shopping activities.</li> <li>• In groups, learners share their own experiences in relation to shopping activities.</li> <li>• Learners are guided to use digital devices with assistive technology to play adapted digital games involving money.</li> </ul>	
<b>Core Competencies to be developed:</b> <ul style="list-style-type: none"> <li>• <b>Citizenship:</b> learner counts Kenyan currency notes in different denominations up to sh. 1000.</li> <li>• <b>Digital literacy:</b> learner uses digital devices to play games involving money.</li> </ul>				
<b>Values:</b> <ul style="list-style-type: none"> <li>• <b>Patriotism:</b> learner exhibits honesty as they sort out Kenyan currency notes according to their value up to sh.1000.</li> <li>• <b>Responsibility:</b> learner engages in assigned roles and duties as they role play buying and selling in the classroom model shop.</li> </ul>				
<b>Pertinent and Contemporary Issues (PCIs):</b> <ul style="list-style-type: none"> <li>• <b>Financial literacy:</b> learner role plays buying and selling items in the classroom model shop.</li> <li>• <b>Sustainable consumption:</b> learner uses locally available materials from the environment to model Kenyan currency.</li> </ul>				
<b>Link to other learning areas:</b> The learner is able to relate the skills used in modelling the Kenyan currency denominations to modelling skills in Creative Activities.				
<b>Suggested Learning resources:</b> Kenyan currency coins and notes or imitations up to sh.1000, classroom shop, clay, plasticine, digital devices with assistive technology such as				

screen readers, screen magnifiers and tactile keyboards.

**SUGGESTED ASSESSMENT RUBRICS**

<b>LEVEL</b> <b>INDICATOR</b>	<b>Exceeds Expectations</b>	<b>Meets Expectations</b>	<b>Approaches Expectations</b>	<b>Below Expectations</b>
Ability to: a) add and subtract length in metres. b) add and subtract mass in kilograms. c) to add and subtract capacity in litres d) read and write time using 'past' and 'to' e) add and subtract time involving hours and minutes without conversion f) identify Kenyan currency notes up to sh.1000 g) count money in different denominations up to sh.1000.	The learner demonstrates all 9 skills.	The learner demonstrates all 4 to 8 skills.	The learner demonstrates two to three skills.	The learner demonstrates 1 or no skill.

h) add and subtract money involving different denominations up to sh.1000. i) represent money in different denominations.				
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### 3.0 GEOMETRY

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Geometry	3.1 Position and Direction (5 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <ul style="list-style-type: none"> <li>a) move along a straight line from a point,</li> <li>b) identify right and left side from a point,</li> <li>c) turn to the right from a point,</li> <li>d) turn to the left from a point,</li> <li>e) appreciate directions and make right turns in real life situations.</li> </ul>	<ul style="list-style-type: none"> <li>• In pairs or in groups, learners with low vision are guided to practise moving along a coloured straight line with appropriate contrast from a given point outside the classroom. Learners with blindness are guided to practise moving along a straight line with cues like along a string from a given point outside the classroom.</li> <li>• In pairs or in groups, learners are guided to play a game of identifying right and left from a point.</li> <li>• In pairs or in groups, learners with low vision are guided to move along a straight line from a given point outside the classroom and then turn right. Learners with blindness are guided to move along a straight line with cues like along a string from a given point outside the classroom and then turn right.</li> <li>• In pairs or in groups, learners with low vision are guided to move along a straight line from a given point outside the classroom and then turn left. Learners with blindness are guided to move along a straight line with cues like along</li> </ul>	<ol style="list-style-type: none"> <li>1. How do you move when you get to a road junction?</li> <li>2. Why is making right and left turns important in real life situations?</li> </ol>

			<p>a string from a given point outside the classroom and then turn to the left.</p> <ul style="list-style-type: none"> <li>• In pairs or in groups, learners with low vision are guided to practise moving along a straight line from a given point outside the classroom and turning left or right. Learners with blindness are guided to practise moving along a straight line with cues like along a string from a given point outside the classroom and turning left or right.</li> <li>• In pairs or in groups, learners are guided to use digital devices with assistive technology to play digital games on movement.</li> </ul>	
<p><b>Core Competencies to be developed:</b></p> <ul style="list-style-type: none"> <li>• <b>Self-efficacy:</b> Learner knows the school as they identify places to move straight along the outside of their classroom and then turn to the left.</li> <li>• <b>Learning to Learn:</b> Learner recreates moving along a straight line from a given point outside the classroom and turning left or right.</li> </ul>				
<p><b>Values:</b></p> <p><b>Respect:</b> Learner displays patience as they practise moving in turns along a straight line and turning left or right.</p>				
<p><b>Pertinent and Contemporary Issues (PCIs):</b></p> <ul style="list-style-type: none"> <li>• <b>Environmental awareness:</b> Learners use their body parts in movement in moving along a straight line from a given point outside the classroom.</li> </ul>				
<p><b>Link to other learning areas:</b></p> <ul style="list-style-type: none"> <li>• <b>Movement and creative activities:</b> Learner practise moving along a straight line from a given point outside the classroom and turning left or right.</li> <li>• <b>Environmental activities:</b> Learner move along a straight line from a given point outside the classroom and then turn left.</li> </ul>				
<p><b>Suggested Learning resources:</b></p> <p>Print and tactile charts showing a straight line, a turn to the left and a turn to the right</p>				

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Geometry	3.2 Shapes (4 lessons)	<p>By the end of the sub-strand, the learner should be able to:</p> <p>(a) identify shapes from a figure made of two different shapes,</p> <p>(b) draw a combined shape involving 2 shapes, (<i>for learners with low vision</i>)</p> <p>(c) interpret a tactile combined shape involving 2 shapes, (<i>for learners with blindness</i>)</p> <p>(d) model a combined shape involving two shapes,</p> <p>(e) appreciate objects with combined shapes in the environment.</p>	<ul style="list-style-type: none"> <li>• Learners are guided to sort out cut-outs of different shapes according to the attribute of shape. Learners with blindness are guided to explore different cut-outs of different shapes to identify their features such as number of sides.</li> <li>• Learners are guided to sort out the paper cut-outs according to their shapes. Learners with blindness are guided to explore the shapes and sort out.</li> <li>• Learners name the different shapes made from the paper cut-outs.</li> <li>• Learners name and discuss shapes in their immediate environment. Learners with blindness are guided to explore the environment to identify different shapes or are given verbal descriptions of different shapes in the environment.</li> <li>• Learners with low vision are guided to draw combined shapes found in the environment that are made of 2 different shapes, e.g. the hut. Learners with blindness are guided to manipulate and explore a tactile combined shape involving 2 shapes.</li> <li>• Learners use locally available materials to model a combined shape made of 2 different</li> </ul>	<ol style="list-style-type: none"> <li>1. How do you identify shapes in your school?</li> <li>2. How can you model a combined shape involving two shapes?</li> </ol>

			<p>shapes. Learners with blindness are supported to assemble materials for modelling.</p> <ul style="list-style-type: none"> <li>• Learners play adapted digital games involving shapes with peers.</li> </ul>	
<p><b>Core Competencies to be developed:</b></p> <ul style="list-style-type: none"> <li>• <b>Creativity:</b> learner draws combined shapes found in the environment that are made of 2 different shapes.</li> <li>• <b>Digital literacy:</b> learner plays digital games involving shapes with peers.</li> </ul>				
<p><b>Values:</b></p> <ul style="list-style-type: none"> <li>• <b>Social justice:</b> learner accommodates peers opinion as they name the different shapes made from the paper cut-outs.</li> <li>• <b>Responsibility:</b> learner uses locally available resources sparingly as they model a combined shape made of 2 different shapes.</li> </ul>				
<p><b>Link to PCIs:</b></p> <ul style="list-style-type: none"> <li>• <b>Creative thinking:</b> learner uses locally available materials to model combined shapes.</li> </ul>				
<p><b>Link to other learning areas:</b></p> <ul style="list-style-type: none"> <li>• The learner is able to relate the skills used in drawing combined shapes to drawing skills in Creative Activities.</li> </ul>				
<p><b>Suggested Learning resources:</b> Cut- outs of rectangles, circles, triangles, ovals and squares of different sizes, tactile diagrams showing shapes, tactile cut-outs.</p>				

**Suggested Assessment Rubric**

<div style="text-align: right; padding-right: 5px;"><b>Level</b></div> <div style="text-align: left; padding-left: 5px;"><b>Indicator</b></div>	<b>Exceeds Expectations</b>	<b>Meets Expectations</b>	<b>Approaches Expectations</b>	<b>Below Expectations</b>
Ability to a) identify right and left side from a point, b) identify shapes from a figure made of two different shapes, c) draw a combined shape involving 2 shapes, <i>(for learners with low vision)</i> <b>OR</b> interpret a tactile combined shape involving 2 shapes, <i>(for learners with blindness)</i> d) model a combined shape involving two shapes,	The learner demonstrates four skills.	The learner demonstrates three skills.	The learner demonstrates two skills.	The learner demonstrates one or no skill.

**APPENDIX 1: COMMUNITY SERVICE LEARNING (CSL) GUIDELINES FOR EARLY YEARS  
EDUCATION (PP1&2 AND GRADE 1-3)**

At this level, the goal of the CSL activity is to provide linkages between concepts learnt in the various Learning Activities and the real life experiences. Learners begin to make connections between what they learn and the relevance to their daily life. CSL is hosted in the Environmental Activities learning area. The class teacher is expected to identify and guide learners to undertake age-appropriate whole-class integrated CSL activity within the school. The safety of the learners should also be taken into account when selecting the CSL activity. The following steps for the integrated CSL activity should be staggered across the school terms.

<b>Steps in carrying out the integrated CSL activity</b>
<p><b>1) Preparation</b></p> <ul style="list-style-type: none"><li>● Determine the activity for the learners</li><li>● Map out the targeted core competencies, values and specific learning areas skills for the CSL activity</li><li>● Identify resources required for the activity (locally available materials)</li><li>● Stagger the activities across the term (Set dates and time for the activities)</li><li>● Communicate to learners, parents/caregivers/guardians, school administration, teachers and other relevant stakeholders in the school community</li><li>● Identify and develop assessment tools.</li></ul>
<p><b>1) Implementation of CSL Activity</b></p> <ul style="list-style-type: none"><li>● Assigning roles to learners.</li><li>● Ensure every learner actively participates in the activity</li><li>● Observe learners as they carry out the CSL activity and record feedback.</li><li>● Use an appropriate assessment tool to assess both the process and the product (Assess learner's work from the beginning to the end product)</li><li>● Assess the targeted core competencies, values and subject skills.</li></ul>

2) **Steps in carrying out the integrated CSL activity**

**Preparation**

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

**Implementation of CSL Activity**

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

2) **Reflection on the CSL Activity**

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

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

Commented [M1]:

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

The integrated CSL activity will take a Whole School Approach (WSA) where the entire school community is involved (learners, parents/caregivers/guardians, school administration, teachers). Parents/caregivers/guardians are key stakeholders in the planning and execution of the CSL activity. Although the teacher takes the lead role in the planning and integration of the CSL activity, learners will be expected to participate actively in the whole process.

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

### **Assessment of the CSL Activity**

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

#### **NOTE**

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

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



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**APPENDIX 3: SUGGESTED ASSESSMENT METHODS AND TOOLS**

1. Written tests and quizzes in print and braille
2. Rating scales
3. Projects
4. Observation Schedules
5. Portfolio
6. Assessment Rubric
7. Questionnaire