REPUBLIC OF KENYA
MINISTRY OF EDUCATION

LOWER PRIMARY SCHOOL CURRICULUM DESIGN

MATHEMATICAL ACTIVITIES

GRADE 1

FOR LEARNERS WITH VISUAL IMPAIRMENT

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT
A Skilled and Ethical Society

First Published in 2017

Revised 2024

ISBN: 978-9914-43-079-0

Published and printed by Kenya Institute of Curriculum Development

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 one curriculum designs for learners with visual impairment build on competencies attained by learners at Pre-primary level. 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
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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 Six is the final grade of the level in the reformed education structure.

The reviewed Grade one curriculum furthers implementation of the CBC from Pre 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 one curriculum designs for learners with visual 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 one and prepare them for smooth transition to Grade two. Furthermore, it is my hope that teachers will use the adapted designs to make learning interesting, exciting and enjoyable.

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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 21st 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 one 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 panellists; the Semi-Autonomous Government Agencies (SAGAs) and representatives of various stakeholders for their roles in the development and adaptation of the Grade one curriculum designs for learners with visual impairment. 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 one and preparation of learners with visual impairment for transition to Grade two.

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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.

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

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

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

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

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

LESSON ALLOCATION FOR LOWER PRIMARY (GRADE 1-3)

S/ No.	Learning Area	No. of Lessons
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
	Total	**31**

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

ESSENCE STATEMENT

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

SUBJECT GENERAL LEARNING OUTCOMES

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 relationships

SUMMARY OF STRAND AND SUB STRANDS

Strands	**Sub Strands**	**Suggested Number of Lessons**
1.0 Numbers	1.1 Pre-Number Activities	20
	1.2 Whole Numbers	25
	1.3 Addition	25
	1.4 Subtraction	20
2.0 Measurements	2.1 Length	10
	2.2 Mass	10
	2.3 Capacity	12
	2.4 Time	8
	2.5 Money	8
3.0 Geometry	3.1 Lines	6
	3.2 Shapes	6
Total Number of Lessons		**150**

NOTE:
The suggested number of lessons per Sub Strand may be less or more depending on the context.

STRAND 1.0 NUMBERS

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**1.1 Pre-number activities (20 lessons)**	By the end of the sub-strand, the learner should be able to: a) carry out finger dexterity activities to enhance tactile discrimination, b) sort objects according to similar attributes in different situations, c) match objects with similar attributes in the environment, d) order objects according to given criteria in different situations, e) create patterns of different sizes and shapes using real objects, f) appreciate the use of sorting and grouping items in day-to-day activities.	• In pairs, learners are guided to explore and identify textures such as sandpaper, rubber or safe leaves using fingertips and practice squeezing, rolling or pinching to strengthen hand muscles. • Learners with low vision are guided to position themselves as per learner's individual visual needs to identify various objects in the environment. Learners with blindness are given orientation of the environment and be assisted to collect different types of safe objects from the immediate environment • Learners with blindness are guided to sort mixed up objects according to size, shape, texture and how objects are used by being given one on one guidance on identifying rough or smooth, large or small, use tactile cues on shapes and group them together. • In groups, learners with low vision are guided to sort objects that are mixed up according to size, shape, texture, appropriately contrasted colour, how objects are used and group them together. • Learners work together to match objects according to different attributes. • Learners with low vision are guided to position themselves appropriately and use residual sight to order coloured objects according to size from smallest to biggest and vice versa. Learners with blindness are given one on one hands on guidance to order objects along embossed border lines according to size from smallest to biggest and vice versa. • Learners are given one on one guidance to make patterns using real objects and verbal feedback on end results. • Learners are guided to assist in arranging edible items like fruits, cereals such as beans, maize and rice according to	1. How can we group objects? 2. How can we make patterns using real objects?

			size, colour, shape and storage at home. Learners with blindness should be given one on one orientation to the items for familialisation as well as verbal descriptions of their colours and be guided to arrange them accordingly.	

Core Competencies to be developed:

- **Creativity and Imagination:** The learner generates new ideas as they sort objects according to size, colour, shape, and texture, finding hidden patterns and making connections between different objects.
- **Communication and collaboration:** The learner works collaboratively as they are given orientation of the environment to collect different types of safe objects from the immediate environment.

Values:

- **Unity:** The learner works together in groups to pair and match objects according to size, colour and shape.
- **Responsibility:** The learner engages in assigned roles and duties while assisting in arranging edible items like fruits, cereals, for example beans, maize and rice according to size, colour, shape and storage at home.

Pertinent and Contemporary Issues (PCIs):

- **Safety and security:** The learner observes safety as they collects different types of safe objects from the immediate environment.
- **Learner support programme:** The learner assists in arranging edible items like fruits, cereals, for example beans, maize and rice according to size, colour, shape and storage at home.

Link to other learning areas:

- **Environmental activities:** The learner sort objects that are mixed up according to size, shape, texture, appropriately contrasted colour and how objects are used and group them together.

Suggested Learning Resources:

Fruits, beans, maize, rice, sand paper, rubber,

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**1.2 Whole Numbers** **(25 lessons)**	By the end of the sub-strand, the learner should be able to: a) count numbers forward up to 50, b) count numbers backwards up to 30, c) represent numbers 1-30 using concrete objects, d) read and write numbers 1- 50 in symbols, e) write numbers 1-10 in words, f) identify missing numbers in number patterns up to 20, g) play games involving numbers 1-50 using digital devices or other resources. h) appreciate number patterns by creating and extending patterns during play activities.	• Learners are guided to count by 1's and 2's up to 20 starting from any point using concrete objects such as print or braille number cards, • Learners take turns as they verbally and audibly counting numbers forward up to 50. • Learners to verbally and audibly count numbers backwards from 30. • Learners are guided to use concrete objects to represent numbers 1-30. Learners with blindness are given one-on-one hands-on guidance on using concrete objects in the activity. • Learners are guided to read and write numbers 1-50 in print symbols or braille symbols. • Learners practise writing numbers 1-10 in words using appropriate media. • Learners are guided to identify missing numbers in number patterns up to 20. • In groups, learners are guided to create patterns with numbers up to 20 and share with other groups. • In pairs, learners are guided to play games involving whole numbers using digital devices with assistive technology or other resources.	1. How can we count numbers? 2. How are number patterns generated during play activities?
Core Competencies to be developed: ● **Digital literacy**: The learner effectively utilises digital devices and resources to engage in educational games involving whole numbers.				

- **Creativity and Imagination:** The learner takes turns in counting numbers forward up to 50, the development of creativity and imagination is indicated by the ability to introduce imaginative elements or variations during the counting process.

Values:

- **Social justice:** The learner actively participates in turn-taking during counting activities. Collaborates with peers to identify missing numbers and collectively solve numerical problems.
- **Respect:** The learner shows flexibility in counting by 1's and 2's, starting from different points. Adjusts strategies when playing digital number games based on the specific features of the game. Adapts to different counting scenarios and environments.

Pertinent and Contemporary Issues (PCIs):

- **Environmental Awareness**: The learner uses concrete objects in a sustainable manner and promoting awareness about the environmental impact of materials used in learning resources.
- **Internet safety and Security:** The learner portrays safe and responsible use of digital devices, online resources, and educational apps during digital number games.

Link to other learning areas:

- **Environmental activities:** The learner incorporates whole numbers in environmental studies, such as analysing data related to ecological measurements, population studies, and environmental impact assessments.
- **Religious activities:** The learner discusses ethical considerations related to the use of numbers and data, emphasising the importance of honesty, accuracy, and fairness when presenting numerical information.
- **Language activities:** The learner writes numbers in words and incorporating numerical concepts in language activities such as creating stories or poems with a focus on numbers, or writing mathematical word problems.

Suggested Learning Resources:

Sticks, stones, grains

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Numbers	**1.3 Addition (25 lessons)**	By the end of the sub-strand, the learner should be able to: a) model addition as putting objects together, c) use ' +' and ' =' signs in writing addition sentences, add 2- single digit numbers in different situations, d) add 3- single digit numbers in different contexts, e) add a 2- digit number to a 1- digit number without regrouping with sum not exceeding 50, f) work out missing numbers in patterns involving addition of whole numbers up to 50, b) Play games involving addition using digital devices or other resources.	• Learners are guided to safely put two groups of objects together and count to get the total. • Learners with low vision are guided to identify labelled number cards with ' + ' and ' = ' signs with appropriate font and colour contrast. Learners with blindness are guided to first state braille dots denoting ' + ' and ' = ' signs and then manipulate braille cards with the signs repeatedly for familiarisation. • In pairs, learners are guided to manipulate braille cards or print cards with appropriate font and colour contrast with addition sentences involving ' + ' and ' = ' signs with explanations on alignment of the work. • Learners with are guided to use ' + ' and ' = ' print or braille signs in writing addition statements. • Learners are guided to add 2- single digit-numbers with a sum of 10 using concrete objects. Learners with blindness are given tactile cues on separating counting items and putting them together.	1. How can we add numbers? 2. How are patterns generated using addition?

			• Learners are guided to add 2- single digit numbers by counting on. • Learners are guided to add 3- single digit numbers using concrete objects • Learners are guided to add 3- single digit numbers by counting on. • Learners are guided to familiarise with orientation of vertical and horizontal alignment of addition sentences with a sum not exceeding 50 • Learners are guided to add a 2- digit number to a 1- digit number without regrouping horizontally and vertically with a sum not exceeding 50. • In groups, learners are guided to make number patterns involving addition with numbers up to 50. • In pairs, learners are guided to play games involving addition using digital and other resources.	

Core competencies to be developed:

- **Creativity and imagination:** The learner develops the ability to create unique and innovative number patterns by incorporating imaginative elements.
- **Digital Literacy:** The learner develops competence in navigating digital environments, collaborating effectively online, and leveraging digital tools, including assistive technology and other resources, to enhance the learning experience as they use shared productivity tools during games involving addition.

Values:

- **Social justice:** The learner demonstrates a sense of fairness and equity in the counting process, ensuring that each object is considered equally valuable.
- **Respect:** The learner consistently displays patience and waits for their turn during games involving addition on digital devices with assistive technology.

Pertinent and Contemporary Issues (PCIs):

- **Safety and Security:** The learner safely puts two groups of objects together and counts to get the total, they demonstrate technology Access and Equity.

Link to other learning areas:

- **Environmental activities**: The learner applies addition in environmental studies, such as calculating ecological footprints, adding data related to environmental changes, and analysing numerical information in environmental science.
- **Language activities**: The learner participates in writing and solving addition word problems, developing mathematical vocabulary, and expressing mathematical concepts through written explanations.
- Movement and Creative Activities: The learner creates visual representations of addition through art projects.

Suggested Learning Resources:

Realia, 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)
1.0 Numbers	**1.4 Subtraction (20 lessons)**	By the end of the sub-strand, the learner should be able to: a) model subtraction as 'taking away' using concrete objects, b) use the ' - ' and '='signs in writing subtraction sentences, c) subtract single digit numbers, d) subtract a 1- digit number from a 2- digit number without regrouping, e) work out missing numbers in patterns involving subtraction of whole numbers up to 50, f) play games involving subtraction using digital devices and other resources.	• Learners are guided to model subtraction using concrete objects like blocks by being given one on one demonstration on taking away some blocks from a given number of blocks and stating how many remain. • In pairs, learners with low vision are guided to identify labelled number cards with '- ' and ' = ' signs in appropriate colour contrast font size and type. Learners with blindness are guided to first state braille dots denoting ' - ' and ' = ' signs and then manipulate braille cards with the signs repeatedly for familiarisation. • Learners are guided to manipulate braille cards or print cards in appropriate font and colour contrast having addition statements involving ' - ' and ' = ' signs. • Learners use ' - ' and '=' print or braille signs in writing subtraction sentences. • Learners with low vision are guided to interpret a print number line while learners with blindness are guided manipulate tactile number line. • Learners are guided to move backward on a number line drawn on the ground as they count backwards	1. How do you subtract a single digit number from a 2-digit number? 2. How are patterns generated using subtraction?

			number of steps made. Learners with blindness are given one on one orientation in undertaking the activity. ● Learners are guided to subtract by counting backwards using a print or tactile number line. ● Learners with low vision use number cards or charts in print with suitable font and colour contrast and in tactile format suitable for learners with blindness safely to work out the subtraction of 1- digit number from 2-digit number. ● Learners are guided to create patterns involving subtraction.	

Core Competencies to be developed:

- **Learning to learn:** The learner displays autonomy in problem-solving by independently selecting and applying counting-backward strategies to subtract numbers.
- **Communication and Collaboration:** The earner provide support and encouragement to their peers as they use number cards or charts in print or tactile format to safely work out subtraction of 2-digit number from 2-digit number.

Values:

- **Responsibility:** The learner is accountable for the resources used in subtraction, ensuring that the objects are accounted for and returned to their designated places after use.

Pertinent and Contemporary Issues (PCIs):

- **Learner Support Programme**: Parental Involvement Programs: Encouraging parental involvement in learner support programs, fostering collaboration between educators and parents to create a supportive learning environment both at school and at home.

Link to other learning areas:

- **Environmental Activities:** The learner explores subtraction in ecological contexts, such as subtracting quantities of resources or calculating changes in environmental factors over time.
- **Language Activities:** The learner incorporates subtraction into word problems and written narratives.

Suggested Learning Resources:

Concrete blocks, charts, print and braille number cards, braille equipment's and materials.

Suggested Assessment Rubrics

LEVEL / INDICATOR	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to: • Sort, group and match objects according to similar attributes (size, shape, colour, use, texture). • create patterns by ordering objects and numbers according to different criteria (addition, subtraction, size, shape, colour). • count numbers forward up to 50 and backwards from 30. • read and write numbers 1 to 50 in symbols and numbers 1 to 10 in words. • identify missing numbers in number patterns up to 20. • add a 2-digit number to a 1-digit number without regrouping with sum not exceeding 50. • subtract a 1-digit number from any a 2-digit number up to 50 without regrouping. • work out missing numbers in patterns involving addition and subtraction of whole numbers up to 50.	The learner demonstrates the eight skills	The learner demonstrates five to seven skills	The learner demonstrates two to four skills	The learner demonstrates one or no skill.

STRAND 2.0 MEASUREMENT

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Measurement	**2.1 Length (10 lessons)**	By the end of the sub-strand, the learner should be able to: a) collect objects of different lengths from the immediate environment, b) compare length of objects using longer than, shorter than and same as, c) measure length using arbitrary units, d) appreciate measuring length using arbitrary units.	● Learners are guided to collect objects of different lengths from the immediate environment. ● Learners with blindness are guided to safely explore long and short objects of contrasting textures and tactile labels. ● Learners compare objects to identify objects which are longer than, shorter than or same as other objects. ● Learners with blindness are guided to identify arbitrary units such as hand spans. ● Learners are given one on one hand on hand demonstration in order to measure lengths using arbitrary units such as hand spans or walking steps and discuss the measurements from the various groups. ● Learners measure lengths of different objects in their community or find audio resources such as audio books or recorded descriptions that describe length differences in their immediate environment.	1. Why do we compare the length of objects? 2. How do we measure the length of objects?

Core competencies to be developed:

- **Self-efficacy:** The learners demonstrate self-efficacy by confidently selecting and applying arbitrary units (e.g., hand spans or walking steps) for measuring length.
- **Digital Literacy:** The learner demonstrates digital literacy by effectively using digital tools to measure lengths.

Values:

- **Patriotism:** The learners foster a sense of community by encouraging learners to collect objects of different lengths from their immediate surroundings.

Pertinent and Contemporary Issues (PCIs):

- **Safety and Security:** Internet safety and security is reflected in responsible and ethical digital practices. The learner demonstrates awareness of online etiquette, copyright issues related to digital resources, and the importance of respecting digital content ownership.

Link to other learning areas:

- **Environmental Activities:** The learner measures lengths of different objects in their community or find audio resources such as audio books or recorded descriptions that describe length differences in their immediate environment.
- Language activities: The learner is given one on one hands-on demonstration in order to measure lengths using arbitrary units such as hand spans or walking steps and discuss the measurements from the various groups.

Suggested Learning Resources:

Textured objects of different heights, lengths, shapes, sizes, audio books, 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 Measurements	**2.2 Mass (10 lessons)**	By the end of the sub-strand, the learner should be able to: a) collect objects with different mass from the immediate environment, b) compare mass of two objects using heavier than, lighter than or same as, c) measure mass using arbitrary units, d) appreciate measuring mass using arbitrary units in the environment,	• Learners are guided to collect objects of different masses from the immediate environment • Learners with blindness are guided to safely explore heavy and light objects to determine those heavier than or lighter than and same as by holding them on either hands to feel their weight and then use tactile marks to label them while learners with low vision are guided to do so using objects of contrasting colours. • Learners identify an empty container of known mass in order to use it to measure the mass of other objects such as mass of beans, maize or flour as accurately as possible. Learners to be given a verbal description of the mass indicated on the containers or they be labelled in braille for tactual identification of mass written. • Learners are guided to play games involving mass using digital devices.	1. How can you compare the mass of two or more objects? 2. How can you show that an object is heavier than, lighter than or same as your mathematics textbook?

Core Competencies to be developed:

- **Communication and collaboration**: The learner develops the skill of effective group decision making as they discuss in groups and use safe objects to identify those heavier than, lighter than or same as.

Values:

- **Integrity:** The learner uses an identified empty container of known mass to measure the mass of other objects such as mass of beans, maize or flour as accurately as possible.

Pertinent and Contemporary Issues (PCIs):

- **Safety:** The learner collects safe objects of different mass from their immediate environment.

Links to other learning areas:

- **Environmental activities**: The learner is guided to collect objects of different masses from the immediate environment.
- **Movement and Creative activities:** The learner is guided to play games involving mass using digital devices.

Suggested Learning Resources:

Empty containers, maize flour, sugar, salt, rice, any source of music, 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	**2.3 Capacity (12 lessons)**	By the end of the sub-strand, the learner should be able to: a) collect containers of different capacities from the immediate environment, b) compare capacity of two containers using more than, less than and same as, c) measure capacity using arbitrary units, d) re-use empty containers of different capacities to keep items. e) Appreciate the importance of capacity in day to day life.	• Learners are guided to collect objects of different capacities from the immediate environment by first being given orientation of the environment and probable location and verbal description of the objects. • In pairs, learners empty and fill water in different containers to establish which holds more, which holds less and which holds the same. Learners with blindness are given verbal descriptions of the phenomena that require the use of sight, verbal cues on holding the container and identifying the pouring and filling point, and on using the finger to note when full. • Learners carefully fill basins with water, using different small containers. The learners to count the number of small containers they use to fill the Basin. Learners with blindness are given verbal descriptions of the phenomena that require the use of sight, verbal cues on holding the container and identifying the pouring and filling point, and on using the finger to note when full. • Learners discuss and re-use containers of different capacity at home and school.	1. How can we find out which of two containers hold more, less or the same as? 2. Why is capacity important in our day-to-day activities?
Core Competencies to be developed: • **Creativity and imagination:** The learner demonstrates creativity and imagination by finding alternative and inventive uses for containers of different capacities.				
Values: • **Responsibility:** The learner regularly cleans and maintains, organises and stores the measuring containers in a designated place after each use.				

Pertinent and Contemporary Issues (PCIs):

- **Safety:** The learner carefully fills basins with water, using different small containers.

Link to other learning areas:

- **Environmental Activities:** The learner is e guided to collect objects of different capacities from the immediate environment Language Activities**:** The learner discuss and re-use containers of different capacity at home and school.

Suggested Learning Resources:

Empty containers, water

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question|(s)
2.0 Measurement	**2.4 Time (8 lessons)**	By the end of the sub-strand, the learner should be able to: a) identify days of the week, b) relate days of the week to various activities, c) identify months of the year, d) appreciate activities that are done on different days of the week.	● Learners are guided to sing songs/ rhymes related to days of the week. ● Learners can tell and write days of the week the way they follow each other. ● Learners identify activities that take place during the days of the week such as raising flags on Monday and Friday. ● Learners sing songs/rhymes related to the months of the year. ● Learners sing songs/rhymes related to the days of the week.	1. How are activities related to the days of the week? 2. How can you memorise days of the week?

Core competencies to be developed:

- **Citizenship:** The learner recognizes their role in participating in and respecting established community rituals, fostering a sense of civic responsibility through activities like flag-raising, and show respect for national symbols like the flag by acknowledging and participating in activities that involve its display on designated days.

Values:

- **Peace:** The learner harmoniously sing songs/ rhymes related to days of the week together.

Pertinent and Contemporary Issues (PCIs):

- **Patriotism:** The learner exhibits patriotism by actively participating in activities that symbolise national identity, such as the respectful raising of the flag on designated days.

Link to other learning areas:

- **Language Activities:** The learner sing songs/rhymes related to the months of the year and write days of the week the way they follow each other.

Suggested Learning Resources:

Print and braille poetry books, 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	**2.5 Money (8 lessons)**	By the end of the sub-strand, the learner should be able to: a) identify Kenyan currency coins, b) identify Kenyan currency note of sh.50, c) count currency coins one at a time, d) use money in buying up to 2 items without balance, e) appreciate the use of money in buying items from shops.	● Learners with blindness are guided to explore Kenyan currency coins sh.1, sh.5, sh.10, sh.20 and sh.40 to identify their characteristics using tactile cues. ● Learners with low vision recognise and sort different Kenyan currency coins sh.1, sh.5, sh.10, sh.20 and sh.40 according to their value. ● Learners with blindness are given step by step guidance to recognise a sh.50 note and tell its value. ● Learners with blindness are given verbal descriptions and cues to tell how many coins of sh.1, sh.5, sh.10, sh.20, sh. 40 by counting. ● Learners discuss the price of items in the model classroom shop up to sh.50.learners with blindness to be given prior orientation to the shop. ● In pairs, learners with low vision role play by buying up to 2 items from the model classroom shop without balancing. Learners with blindness are given one-on-one hands-on guidance on phenomena that require the use of sight.	1. How can you identify Kenyan currency coins and notes? 2. How is money used to buy items from the shop?

Core competencies to be developed:

- **Citizenship:** The learner develops the skill of ethical financial behaviour by learning to recognize and respect the value of different coins, laying the foundation for responsible financial conduct in the future as they recognize and sort out different Kenyan currency coins sh.1, sh.5, sh.10, sh.20 and sh.40 according to their value.

Values:

- **Integrity:** The learner role plays buying up to 2 items from the model classroom shop and paying the correct money.

Pertinent and Contemporary Issues (PCIs):

- **Financial Literacy**: The learner demonstrates an understanding of basic financial concepts by recognizing and sorting Kenyan currency coins based on their values (sh.1, sh.5, sh.10, sh.20, and sh.40).

Link to other learning areas:

- **Language activities**: The learner discuss the price of items in the model classroom shop up to sh.50.learners with blindness to be given prior orientation to the shop.

Suggested Learning Resources:

Kenyan currency in coins, notes, dummy currency in coins, notes

Suggested Assessment Rubrics

LEVEL / INDICATOR	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to: • compare lengths of objects using longer than, shorter than and same as. • Compare mass of two objects using heavier than, lighter than and same as. • to compare capacity of two containers using more than, less than and same • identify and relate days of the week to various activities. • to identify months of the year. • identify Kenyan currency coins sh.1, sh. 5, sh.10, sh. 20 and sh. 40 and sh. 50 note. • identify Kenyan currency coins sh.1, sh. 5, sh.10, sh. 20 and sh. 40 and sh. 50 note. • count currency coins of sh.1, sh.5, sh.10, sh.20, sh.40 one at a time.	The learner demonstrates the eight skills	The learner demonstrates the five to seven skills	The learner demonstrates the two to four skills	The learner demonstrates one or no skills

STRAND 3.0 GEOMETRY

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0Geometry	**3.1 Lines (6 lessons)**	By the end of the sub-strand, the learner should be able to: a) identify straight lines in different situations, b) draw straight lines on different surfaces, c) identify curved lines in different situations, d) draw curved lines on different surfaces, e) recognise straight and curved lines from real objects in the environment.	• Learners with blindness are given one on one activities that will enhance awareness of position of self in relation to how it is oriented in space. • Learners stand behind one another facing the same side and identify what they have formed as a straight line by giving learners with blindness embossed/tactile cues on where to stand and a step-by-step guide on walking along the formed line. • Learners are guided to mark two points on the ground and using a stick to join the two points to make a straight-line learner with blindness are given one on one hands on guidance on phenomena that require the use of sight. • Learners with low vision practice drawing straight lines on the ground and in their books while learners with blindness use glue and strings to fix thread on a surface forming a straight line. • Learners with low vision form a semi-circle and one of them to draw a line around it and identify the semi- circle drawn as a curved line while learners with blindness move along the formed semi-circle while being given verbal cues on the curved line formed. • In groups, learners with low vision practice drawing or making curved lines on the ground	1. How do you make a line? 2. How are lines important in our life?

			and on different surfaces ● Learners look for and identify lines from different objects in the environment.	

Core-Competencies to be developed:

- **Learning to learn:** The learner develops spatial reasoning and coordination skills, coupled with a learning-to-learn mind set, as learners mark two points on the ground and use a stick to join the two points to make a straight line.

Values:

- **Unity:** The learner stands behind one another facing the same side and identify what they have formed as a straight line.
- **Love:** The learner works in groups and shares resources to draw lines on the ground.

Pertinent and Contemporary Issues (PCIs):

- **Self- awareness:** The learner uses their hands to draw straight and curved lines.

Link to other learning areas:

- **Movement and Creative Activities:** The learner practises drawing or making curved lines on the ground and on different surfaces.

Suggested Learning Resources:

Open place, strings, glue, sticks, tape measure, ruler, found objects

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Geometry	**3.2 Shapes (6 lessons)**	By the end of the sub-strand, the learner should be able to: a) identify rectangles, triangles and circles in objects from the environment, b) make patterns involving rectangles, triangles, and circles, c) appreciate the beauty of patterns in different fabrics.	● Learners with blindness engage in repetitive exploration of shapes with verbal description of their characteristics and familiarisation labels for familiarisation. Learners with low vision observe various shapes of appropriate colours for familiarisation. ● Learners with low vision are guided on identification of shapes with contrasting colours to use safe objects from the environment to recognize different shapes such as rectangles, triangles and circles. ● Learners are guided to make patterns of their choice using the three shapes. ● In pairs, learners with low vision make patterns, colour them and share with other groups for peer review.	1. Why do some shapes look the same? 2. How are patterns made from rectangles, circles and triangles?
Core-Competencies to be developed: ● **Creativity and imagination:** The learner develops the skill of exploration and engage in creative thinking by actively making patterns involving rectangles, triangles, and circles, demonstrating the ability to use these shapes innovatively in artistic expression as they independently make patterns of their choice using rectangles, triangles and circles.				
Values: ● **Love:** The learner in groups make patterns, colour them and share with other groups.				
Pertinent and Contemporary Issues (PCIs): ● **Environmental awareness:** The learner uses safe objects from the environment to recognize different shapes such as rectangles, triangles and circles.				

Link to other learning areas:

- **Creative Activities:** The learner makes patterns, colour them and share with other groups.
- **Environmental activities:** The learner is guided on identification of shapes with contrasting colours to use safe objects from the environment to recognize different shapes such as rectangles, triangles and circles.

Suggested Learning Resources:

Coloured objects of different shapes

ASSESSMENT RUBRICS

LEVEL / INDICATOR	**Exceeds Expectations**	**Meets Expectations**	**Approaches Expectations**	**Below Expectations**
Ability to: • draw straight lines in the environment, • identify curved lines in the environment, • identify shapes in an object (rectangles, triangles, circles, ovals), • make patterns involving three shapes (rectangles, triangles, circles, ovals).	The learner demonstrates the 4 skills	The learner demonstrates three skills	The learner demonstrates the two skills.	The learner demonstrates one or no skill.

APPENDIX 1: 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

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

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

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

2) **Implementation of CSL Activity**

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

3) Reflection on the CSL Activity

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

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

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

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

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

Assessment of the CSL Activity

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