CURRICULUM DESIGNS
FOR LEARNERS WITH PHYSICAL IMPAIREMENT
GRADE 4

VOLUME ONE:

- MATHEMATICS
- SCIENCE AND TECHNOLOGY
- AGRICULTURE
- HOMESCIENCE

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

REPUBLIC OF KENYA

UPPER PRIMARY LEVEL CURRICULUM DESIGNS

VOLUME ONE

MATHEMATICS
SCIENCE & TECHNOLOGY
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First Published in 2019

ISBN: 978-9966-31-824-4

Published and printed by Kenya Institute of Curriculum Development

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FOREWORD

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

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

The curriculum designs are developed to enable implementation of the Basic Education Curriculum Framework. The design contains the National Goals of Education and outline the upper primary (Grade 4,5and 6) learning outcomes. It also suggests a variety of learning experiences, assessment and links the strands to values, Pertinent and Contemporary Issues (PCIs) and to other activity areas.

It is my hope that educators in grade 4 will anchor their delivery to these Curriculum Designs.

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INTRODUCTION

The upper primary designs are meant for learners in Grade 4 to 6. They have taken cognizance of the various aspects of development of learners of that age cohort. The designs are comprehensive enough to guide the teachers to effectively deliver the curriculum.

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

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

LEARNING AREAS TIME ALLOCATION

#	**Learning Area**	**Lessons Per Week**
1.	Kiswahili Language or KSL for learners who are deaf	4
2.	English language	4
3.	Other Languages: **Optional** (Indigenous languages, Foreign Languages).	2
4.	Science and Technology	4
5.	Social Studies	3
6.	Mathematics	5
7.	Home science	3
8.	Agriculture	3
9.	Religious (CRE/IRE/ HRE)	3
10.	Creative Arts (Art, Craft, Music)	3 (2 Art and Craft ,1 music
11.	Physical and Health Education	5
12.	Pastoral Programme of Instruction (PPI)	1
	TOTAL	**40**

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

LEVEL LEARNING OUTCOMES FOR THE MIDDLE SCHOOL

By the end of the middle school the learner should be able to:

a) apply literacy, numeracy skills and logical thinking appropriately in self-expression;

b) communicate effectively in diverse contexts;

c) apply digital literacy skills appropriately for communication and learning in day to day life;

d) demonstrate social skills, spiritual and moral values for peaceful co-existence;

e) explore, manipulate, manage and conserve the environment effectively for learning and sustainable development;

f) practise hygiene, appropriate sanitation and nutrition to promote health;

g) demonstrate ethical behaviour and exhibit good citizenship as a civic responsibility;

h) manage pertinent and contemporary issues in society effectively;

i) demonstrate appreciation of the country's rich, diverse cultural heritage for harmonious living.

PREAMBLE

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

- Neurological impairments such as; cerebral palsy, spinal injuries, spina bifida, epilepsy.
- Musculo-skeletal impairments such as; Muscular Dystrophy, Amputation, poliomyelitis, Osteogenesis imperfecta condition.
- Chronic health impairments such as; asthma, sickle-cell anemia and juvenile hyperglycemia (high blood sugar) among others.
- Multiple disabilities.

Unlike learners without disabilities, learners with physical impairment experience motor difficulties that affect their posture, balance, Speech, ability to move, sit, write and manipulate learning materials. Therefore, adaptations have been made to enable the learner access curriculum for meaningful learning. These learners require special services, training, adapted equipment and materials, tools and facilities to achieve their educational goals in life. In addition, they will require assistance in the learning process especially in the practical oriented activities. The suggested physical assistance, relevant adaptations and more time will be required in actual learning experiences and in assessment where applicable and should be individualized. Physical assistance may include performing an activity with the learner's instructions, manipulation of various learning equipment, tools, materials, and facilitating mobility, grasping, and stabilizing the learners' body or parts of the body. Relevant adaptations mean making of resources usable to the learner, for example, adapting drawing and writing equipment, page turners and head pointers for easier use. It also means modifying the environment to suit the needs of the learner such as provision of modified tables and chairs, spacious classroom for ease of mobility, particularly for those on wheelchairs, provision of ramps for easier access to rooms and fitting of wide doors to allow for entry by wheel chair users and those with mobility difficulties.

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

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

Learners with conditions such brittle bones, muscular dystrophy, heart conditions, spinal cord injuries among others could be exempted from activities that are rigorous. The teacher is expected to come up with appropriate and relevant activities that will enable such learners to acquire the same concept.

It is also suggested that instructional and assessment time to vary according to the needs of the learner. The following adaptations have been suggested in assessment;

- Oral testing
- Audio recording
- A person writing or recording with learners' instructions (physical assistant)
- Use of adapted computers
- More time
  The target learner here is one with difficulties in writing or drawing or measurement.

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

MATHEMATICS

ESSENCE STATEMENT

Mathematics is a vehicle for 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 Science, Technology, Engineering and Mathematics (STEM) at the higher levels of Education cycle**.** Mathematics is also a learning area of enjoyment and excitement as it gives learners opportunities for creative work and fun.

GENERAL LEARNING OUTCOMES

By the end of Upper Primary, the learner should be able to:

1. Demonstrate mastery of number concepts by working out problems in day to day life;
2. Apply measurement skills to find solutions to problems in a variety of contexts;
3. Describe properties of geometrical shapes and spatial relationships in real life experiences;
4. Collect, represent and analyze data to solve problems;
5. Analyze information using algebraic expressions in real life situations.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
1.0 NUMBERS	**1.1 WHOLE NUMBERS (20Lessons)**	By the end of the sub strand, the learner should be able to; a) use place value and total value of digits up to tens of thousands in daily life situations, b) read and write numbers up to 10,000 in symbols in real life situations, c) read and write numbers up to 1,000 in words in day to day activities, d) order numbers up to 1,000 in different situations, e) round off numbers up to 1,000 to the nearest ten in different situations, f) identify factors or divisors of numbers up to 50 in different contexts, g) identify multiples of numbers up to 100 in different situations, h) use even and odd numbers up to 100 in different situations, i) represent Hindu Arabic numerals using Roman numerals up to 'X' in different situations,	• Learners in purposive pairs or groups to identify place value of up to tens of thousands using place value apparatus. Learners could identify orally or by pointing or writing or typing or stamping. Learners with speech difficulties could also use residual speech as they are lip read by peers or teacher aide or teacher, or sign, besides the above modes of communication. *(Apply this adaptation in all the subsequent activities where identification of numbers is involved under this sub strand).* • Learners in purposive pairs or groups to identify total values of digits up to ten thousand. • Learners in purposive pairs or groups or individually to read numbers up to 10,000 in symbols from a number chart. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to express own views. *(Apply this adaptation in all the subsequent activities where speech is involved under this sub strand). However, some other adaptations have also been made on specific learning experiences.* • Learners in purposive pairs or groups or individually to read and write numbers up	1. What do you consider when writing numbers in words? 2. How can you find the place value of a digit in a number? 3. How can you find the total value of a digit in a number?

		j) make patterns involving even and odd numbers in day to day life experiences, k) use ICT devices for learning and leisure, l) appreciate use of numbers in real life situations.	to 1,000 in words from a number chart. Learners with manipulation difficulties could use any alternative functional part of the body or assistive Technology such as multipurpose stamps, universal cuffs or adapted pens or pencils or adapted digital devices such as computers with expanded keyboards, key guards, sticky keys and head operated optical mouse or be assisted physically by peers or teacher aide or teacher (physical assistant) to write or stamp or mount or type given numbers under their instructions. Learners with manipulation difficulties should be given tasks which they perform according to their individual functional ability and more time could be required for them to complete tasks. Adjust glare on the screens of the adapted digital devices appropriately to suit learners with epilepsy and those who may be experiencing difficulties in vision. • Learners in purposive pairs to arrange numbers up to 1,000 in order from smallest to largest and largest to smallest using number cards and share with other groups. Learners with manipulation difficulties could use any alternative functional part of the body or assistive technology such as head or mouth pointers to arrange the number cards or use adapted digital devices such as computers with expanded keyboards, key guards, sticky	

			keys and or head operated optical mouse or be physically assisted by peers or teacher aide or teacher to arrange numbers using number cards or *Microsoft word* application under their instructions. Adjust glare on the screens of the adapted digital devices appropriately to suit learners with epilepsy and those who may be experiencing difficulties in vision. *(Apply these adaptations in all the subsequent activities that involve writing, drawing and arranging number cards and use of adapted ICT devices under this sub strand)*. • Learners in purposive pairs or groups or individually round off numbers up to 1,000 to the nearest ten and share with other groups. • Learners in purposive pairs or groups or individually to identify factors or divisors of numbers up to 50 and share with other groups. • Learners in purposive pairs or groups to identify multiples of numbers up to 100 and share with other groups. • Learners in purposive pairs or groups to identify even and odd numbers up to 100 and share with other groups. • Learners in purposive pairs or groups to represent Hindu Arabic numerals using Roman numerals up to 'X' using number charts. Learners with manipulation difficulties could use any alternative	

			functional part of the body to write or type or stamp or use alphabetic letter and number cards with multipurpose communication board to represent the Hindu Arabic numerals. • Learners in purposive pairs or groups to make patterns involving even and odd numbers and share with other groups. • Learners in purposive pairs or groups to visit mathematical sites in ICT devices and play digital games. Glare on the screens of the adapted ICT devices should be appropriately adjusted for learners with epilepsy and those who may be experiencing visual difficulties.	

Core Competencies to be developed:

- Critical thinking and problem solving: as learners identify place value, order numbers and round off numbers.
- Learning to learn: as learners read and write numbers.
- Digital literacy: as learners use ICT devices to learn and play digital games.

Pertinent and Contemporary Issues: • **Life Skills Issues:** The skills of knowing and living with others: as learners work in groups irrespective of their backgrounds. • **Social Economic Issues:** Financial literacy: as learners order and group different denominations such as coins in groups of tens or hundreds.	**Values:** • Respect: as learners work in pairs or groups. • Unity: as learners work towards achieving desired goals.
Link to other Learning Areas: Languages: as learners discuss in purposive pairs or groups.	**Suggested Community Service-Learning Activities:** • Learners to assist in sharing edible and non-edible items in multiples of given numbers in community functions.
Suggested Non-Formal Activities to Support Learning:	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes

• Learners to play number games and count items in the environment.	

Suggested Resources:
Place value apparatus, number charts, number cards , multiplication table, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Perso

Assessment Rubrics

Indicators	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Use place value up to ten thousands in daily life situations.	Learner uses place value up to ten thousands in daily life situations and beyond correctly.	Learner uses place value up to ten thousands in daily life situations.	Learner uses place value up to thousands in daily life situations.	Learner uses place value up to hundreds in daily lif situations with guidance.
Use total values up to ten thousands in real life situations.	Learner uses total values up to ten thousands in real life situations and beyond correctly.	Learner uses total values up to ten thousands in real life situations.	Learner uses total values up to thousands in real life situations.	Learner uses total values up to hundreds in real life situations with prompts.
Read and write numbers in symbols up to 10,000 in day today activities.	Learner reads and writes numbers in symbols up to 10,000 and beyond in day today activities correctly.	Learner reads and write numbers in symbols up to 10,000 in day today activities.	Learner reads and writes numbers in symbols up to 10,000 in day today activities with assistance.	Learner reads and writes numbers in symbols up to 1,000 in day today activities with guidance.
Read and write numbers in words up to 1,000 in day today activities.	Learner reads and writes numbers in words up to 1,000 and beyond in day today activities correctly.	Learner reads and writes numbers in words up to 1,000 in day today activities.	Learner reads and writes numbers in words up to 1,000 in day today activities with guidance.	Learner reads and writes numbers in words up to 100 in day today activities with assistance.
Order numbers up to 1,000 in different situations.	Learner orders numbers up to 1,000 and beyond in different situations neatly.	Learner orders numbers up to 1,000 in different situations.	Learner orders numbers up to 1,000 in different situations with prompts.	Learner orders numbers up to 100 in different situations with prompts.

Round off numbers up to 1,000 to the nearest ten in different situations.	Learner rounds off numbers up to 1,000 to the nearest ten and beyond in different situations neatly.	Learner rounds off numbers up to 1,000 to the nearest ten in different situations.	Learner rounds off numbers up to 1,000 to the nearest ten in different situations with guidance.	Learner rounds off numbers up to 100 to the nearest ten in different situations with much guidance.
Identify factors and divisors of numbers up to 50 in different contexts.	Learner identifies factors and divisors of numbers up to 50 and beyond in different contexts correctly.	Learner identifies factors and divisors of numbers up to 50 in different contexts.	Learner identifies factors and divisors of numbers up to 50 in different contexts with guidance.	Learner identifies factors and divisors of numbers u to 20 in different contexts with guidance.
Identify multiples of numbers up to 100 in different situations.	Learner identifies multiples of numbers up to 100 in different situations and beyond correctly.	Learner identifies multiples of numbers up to 100 in different situations.	Learner identifies multiples of numbers up to 100 in different situations with assistance.	Learner identifies multiple of numbers up to 50 in different situations with assistance.
Use even and odd numbers up to 100 in different situations.	Learner uses even and odd numbers up to 100 in different situations with ease.	Learner uses even and odd numbers up to 100 in different situations.	Learner uses even and odd numbers up to 100 in different situations with assistance.	Learner uses even and odd numbers up to 100 in different situations with a lot of assistance.
Represent Hindu Arabic numerals using Roman numerals up to 'x' in different situations.	Represent Hindu Arabic numerals using Roman numerals up to 'x' in different situations.	Represent Hindu Arabic numerals using Roman numerals up to 'x' in different situations.	Represent Hindu Arabic numerals using Roman numerals up to 'x' in different situations.	Represent Hindu Arabic numerals using Roman numerals up to 'x' in different situations.
Make patterns involving even and odd numbers up to 100	Learner makes patterns involving even and odd numbers up to 100 and beyond neatly.	Learner makes patterns involving even and odd numbers up to 100.	Learner makes patterns involving even and odd numbers up to 100 with prompts.	Learner makes patterns involving even and odd numbers up to 20 with guidance.
Use ICT devices for learning and leisure	Learner uses ICT devices for learning and leisure fast and neatly.	Learner uses ICT devices for learning and leisure.	Learner uses ICT devices for learning and leisure with guidance.	Learner uses ICT devices for leisure with a lot of guidance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	1.2 ADDITION (8 Lessons)	By the end of the sub strand, the learner should be able to: a) add up to two 4-digit numbers with single regrouping up to a sum of 10,000 in different situations, b) add up to two 4-digit numbers with double regrouping up to a sum of 10,000 in real life situations, c) estimate sum by rounding off numbers to the nearest ten in different situations, d) create patterns involving addition up to a sum of 10,000 in real life situations, e) use ICT devices for learning and enjoyment, f) appreciate application of addition of numbers in real life situations.	• Learners in purposive pairs or groups to add up to two 4-digit numbers with single regrouping up to a sum of 10,000. Learners with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as head or mouth pointers or multipurpose stamps to write or stamp or mount or arrange number and operation sign cards or head operated optical mouse and adapted ICT device with appropriate software such as calculator to work out and type own responses or be physically assisted by peers or teacher aide or teacher under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(These adaptations apply in all the subsequent activities where addition, writing, creating patterns and use of adapted ICT devices is involved under this sub strand)*. • Learners in purposive pairs or groups add up to two4-digit numbers with double regrouping up to a sum of 10,000. • Learners in purposive pairs or groups to estimate sum by rounding off numbers to be added to the nearest ten in different situations. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to give their estimates. *(Apply this adaptation in all the subsequent activities where speech is involved under this sub strand)*.	1. When do yo use addition in real life? 2. What do you consider when estimating answers in addition? 3. How do you form numbers patterns in addition?

			• Learners in purposive pairs or groups to create patterns involving addition up to a sum of 10,000. • Learners in purposive pairs or groups to play digital games involving addition.	

Core Competencies to be developed:

- Self-efficacy: as learners make reports in their groups.
- Critical thinking and problem solving: as learners add numbers, estimate and round off numbers and in making patterns.
- Creativity and imagination: as learners make patterns.
- Digital literacy: as learners use ICT devices to learn and play games on addition.

Pertinent and Contemporary Issues: • **Life Skills Issues:** The skills of knowing and living with others: as learners support one another while working in groups. • **Social Economic Issues:** Environmental Issues: as learners get the total of a variety of trees in the school compound.	**Values:** • Respect: as learners appreciate others. • Unity: as learners work towards achieving expected results. • Responsibility: as learners work in groups.
Link to other Learning Areas: • Languages as learners discuss in groups. • Home Science as learners mix ingredients. • Agriculture as learners add items such as seedlings, seeds or fertilizer.	**Suggested Community Service Learning Activities:** • Learners to assist in finding the number of items or people i community functions such as weddings or funerals. • Share with family members how to use ICT devices i operations.
Suggested Non-Formal Activities to Support Learning: • Learners to work out total scores in a game.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes

Suggested Resources:
Place value chart, adapted abacus, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Perso

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Add up to two 4-digit numbers with single regrouping in different situations.	Learner adds up to two 4-digit numbers with single regrouping and beyond in different situations with ease.	Learner adds up to two 4-digit numbers with single regrouping in different situations.	Learner adds up to two 4-digit numbers with single regrouping in different situations with prompts.	Learner adds up to two 4-digit numbers without regrouping in different situations with guidance.
Add up to two 4-digit numbers with double regrouping in real life situations.	Learner adds up to two 4-digit numbers with double regrouping and beyond in real life situations neatly.	Learner adds up to two 4-digit numbers with double regrouping in real life situations.	Learner adds up to two 4-digit numbers with double regrouping in real life situations with assistance.	Learner adds up to two 4-digit numbers with single regrouping in real life situations with a lot of assistance.
Estimate sums by rounding off in different situations.	Learner estimates sums by rounding off numbers to the nearest ten and beyond in different situations with ease.	Learner estimates sums by rounding off in different situations.	Learner estimates sums by rounding off in different situations with some assistance.	Learner attempts to estimate sums by rounding off in different situations with a lot of assistance.
Create patterns involving addition up to sum of 10,000.	Learner creates patterns involving addition up to sum of 10,000 and beyond in real life situations neatly.	Learner creates patterns involving addition up to sum of 10,000 in real life situations.	Learner creates patterns involving addition up to sum of 10,000 in real life situations with guidance.	Learner creates patterns involving addition up to sum of 1,000 in real life situations.
Use ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with assistance.	Learner uses ICT devices for enjoyment.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	1.3 SUBTRACTION (8 Lessons)	By the end of the sub strand, the learner should be able to: a) subtract up to 4-digit numbers without regrouping in real life situations, b) subtract up to 4-digit numbers with regrouping in real life situations, c) estimate difference by rounding off numbers to the nearest ten in real life situations, d) create patterns involving subtraction of numbers up to 10,000, e) use ICT devices for learning and enjoyment, f) appreciate application of subtraction of numbers in real life situations.	• Learners in purposive pairs or groups to subtract numbers up to 4-digit numbers without regrouping. Learners with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as head or mouth pointers or multipurpose stamps to write or stamp or mount or arrange number and operation sign cards or head operated optical mouse and adapted ICT devices with appropriate software such as calculator to work out and type own responses or be physically assisted by peers or teacher aide or teacher under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(These adaptations apply in all the subsequent activities where subtraction, writing, creating patterns and use of adapted ICT devices is involved under this sub strand).* • Learners in purposive pairs or groups or individually to subtract up to 4-digit numbers with regrouping. • Learners in purposive pairs or groups to estimate and work out difference by rounding off the numbers to the nearest ten. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point	1. When do you us subtraction in real life? 2. How do you estimate the difference of given numbers? 3. How do you create patterns involving subtraction?

			on a multipurpose communication board to give their estimates. *(Apply this adaptation in all the subsequent activities where speech is involved under this sub strand)*. • Learners in purposive pairs or groups to create patterns involving subtraction of numbers up to 10,000. Learners with manipulation difficulties could use any alternative functional part of the body or assistive technology such as head or mouth pointers to arrange the number cards or use adapted digital devices such as computers with expanded keyboards, key guards, sticky keys and or head operated optical mouse or be physically assisted by peers or teacher aide or teacher to carry out the tasks in this activity under their instructions. *(Apply these adaptations in all the subsequent activities that involve writing, drawing and arranging number cards under this sub strand)*. • Learners in purposive pairs or groups or individually to play digital games involving subtraction.	

Core Competencies to be developed:

- Creativity and imagination: as learners make patterns involving subtraction.
- Critical thinking and problem solving: as learners estimate answers in subtraction.
- Digital literacy: as learners play digital games involving subtraction.

Pertinent and Contemporary Issues:	**Values:**
• **Life Skills Issues:** The skills of knowing and living with others: as learners work in groups and pairs in making patterns. • **Social Economic Issues:**	• Responsibility: as learners undertake their tasks in groups. • Respect: as learners come up with common solutions.

Environmental issues: as learners help sort maize in the school farm and subtract the number of good maize in a given quantity of maize.	
Link to other Learning Areas • Languages as learners discuss in groups and in pairs.	**Suggested Community Service Learning Activities** • Learners may assist in distribution of items in community services or functions.
Suggested Non-Formal Activities to Support Learning • Learners to work out the difference in scores for various teams during play.	**Suggested modes of Assessment:** Oral questions, observation, written exercises, quizzes
Suggested Resources: Place value chart, adapted abacus, number cards , multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips	
Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Perso	

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Subtract up to 4-digit numbers without regrouping in real life situations.	Learner subtracts up to 4-digit numbers without regrouping and beyond in real life situations.	Learner subtracts up to 4-digit numbers without regrouping in real life situations.	Learner subtracts up to 4-digit numbers without regrouping in real life situations with some assistance.	Learner attempts to subtract up to 3-digit numbers without regrouping in real life situations with a lot of assistance.
Subtract up to 4-digit numbers with regrouping in real life situations.	Learner subtracts up to 4-digit numbers and beyond with regrouping in real life situations correctly.	Learner subtracts up to 4-digit numbers with regrouping in real life situations.	Learner subtracts up to 4-digit numbers with regrouping in real life situations with prompts.	Learner attempts to subtract up to 3-digit numbers with single regrouping from tens in real life situations.
Estimate difference by rounding off	Learner estimates difference by	Learner estimates difference by rounding	Learner estimates difference by rounding off	Learner attempts to estimate difference by rounding off

numbers to the nearest ten in real life situations.	rounding off numbers to the nearest ten and beyond in real life situations correctly.	off numbers to the nearest ten in real life situations.	numbers to the nearest ten in real life situations with guidance.	numbers to the nearest ten in real life situations with a lot of assistance.
Create patterns involving subtraction from up to 10,000.	Learner creates patterns involving subtraction from up to 10,000 and beyond artistically.	Learner creates patterns involving subtraction from up to 10,000.	Learner creates patterns involving subtraction from up to 10,000 with close guidance.	Learner creates patterns involving subtraction from up to 1,000 with much guidance.
Use ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and efficiently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with prompts.	Learner uses ICT devices for enjoyment with prompts.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	1.4 MULTIPLICATION (8 Lessons)	By the end of the sub strand, the learner should be able to: a) multiply up to a 2-digit number by multiples of 10 in different situations, b) multiply up to a 2-digit number by a 2-digit number without and with regrouping in real life situations, c) estimate products by rounding off numbers to the nearest ten in real life situations, d) create patterns involving multiplication with product not exceeding 100 in real life situations, e) use ICT devices for learning and enjoyment, f) appreciate application of multiplication of numbers in real life.	• Learners in purposive pairs or groups to multiply up to a 2-digit number by multiples of 10. Learners with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as head operated optical mouse and adapted ICT device with appropriate software such as calculator or be physically assisted by peers or teacher aide or teacher to carry out given tasks under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. In group activities, learners on positioning devices should be preferentially and appropriately positioned to avoid the development of secondary conditions such as contractures. • Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to give their estimates. *(These adaptations apply in all the subsequent activities where multiplication, writing, creating*	1. When do you use multiplication in real life? 2. How do you create patterns involving multiplication?

			patterns, estimating answers and use of adapted ICT devices and speech is involved under this sub strand). • Learners in purposive pairs or groups to multiply up to a 2-digit number by a 2-digit number. • Learners in purposive pairs or groups or individually to estimate and work out answers by rounding off numbers to the nearest ten with product not exceeding 1,000. • Learners in purposive pairs or groups to create patterns involving multiplication with product not exceeding 100. • Learners in purposive pairs or groups or individually to play digital games on multiplication.	

Core Competencies to be developed:

- Critical thinking and problem solving: as learners estimate products in multiplication tasks.
- Creativity and imagination: as learners make patterns involving multiplication of numbers.
- Digital literacy: as learners play games involving multiplication.

Pertinent and Contemporary Issues:	**Values:**
• **Life Skills Issues:** The skills of knowing and living with others: as learners work in pairs and in groups. • **Social Economic Issues:** Environmental Issues: as learners collect and re-use waste or refuse in the compound to make patterns such as bottle tops used in multiplication**.**	• Unity as learners work in groups • Respect as learners take turns in group activities. • Love as learners discuss and respect each other's opinion in group discussions. • Responsibility as learners undertake their tasks individually, in purposive pairs or groups.
Link to other Learning Areas • Languages as learners discuss in groups and in pairs.	**Suggested Community Services Learning Activities**

• Agriculture as learners work out number of rows and number of seedlings in each row in a school garden.	• Learners may help in finding out total number of items in a group like total number of seedlings given the rows and number in each row.
Suggested Non-Formal Activities to Support Learning • Learners to work out the number of flowers in a flowerbed by considering the number of rows and columns.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes
Suggested Resources: Multiplication table, number cards , multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips	
Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person	

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Multiply up to a 2-digit number by multiples of 10 in different situations.	Learner multiplies up to a 2-digit number by multiples of 10 and beyond in different situations neatly.	Learner multiplies up to a 2-digit number by multiples of 10 in different situations.	Learner multiplies up to a 2-digit number by multiples of 10 in different situations with prompts.	Learner attempts multiplying single digit number by multiples of 10 in different situations with a lot of guidance.
Multiply up to a 2-digit number by a 2-digit number in real life situations.	Learner multiplies up to a 2-digit number by a 2-digit number and beyond in real life situations with ease.	Learner multiplies up to a 2-digit number by a 2-digit number in real life situations.	Learner multiplies up to a 2-digit number by a 2-digit number in real life situations with guidance.	Learner multiplies up to a 2-digit number by a single digit number in real life situations with a lot of assistance.
Estimate products in multiplication by rounding off numbers to the nearest ten in real life situations.	Learner estimates products in multiplication by rounding off numbers to the nearest ten and beyond in real life situations neatly.	Learner estimates products in multiplication by rounding off numbers to the nearest ten in real life situations.	Learner estimates products in multiplication by rounding off numbers to the nearest ten in real life situations with guidance.	Learner attempts estimating products in multiplication by rounding off numbers to the nearest ten in real life situations with a lot of guidance.
Create patterns involving multiplication with products not exceeding 100 in real life situations.	Learner creates patterns involving multiplication with products up to100 and beyond in real life situations artistically.	Learner creates patterns involving multiplication with products up to100 in real life situations.	Learner creates patterns involving multiplication with products up to100 in real life situations with assistance.	Learner creates patterns involving multiplication with products up to 50 in real life situations with a lot of guidance.
Use ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with prompts.	Learner uses ICT devices for enjoyment with assistance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	1.5 DIVISION (8 Lessons)	By the end of the sub strand, the learner should be able to: a) divide up to a 2-digit number by a 1-digit number without remainder in different situations, b) divide up to a 2-digit number by a 1-digit number with remainder in real life situations, c) use relationship between multiplication and division to work out problems in real life situations, d) use ICT devices for learning and leisure, e) appreciate application of division of numbers in real situations.	• Learners in purposive pairs or groups to divide up to a 2-digit number by 1-digit number without remainder using counters. Learners on positioning devices should be preferentially and appropriately positioned to avoid the development of secondary conditions such as contractures. Those with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to contribute in group discussions, while those with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as head operated optical mouse and adapted ICT device with appropriate software such as calculator or be physically assisted by peers or teacher aide or teacher to perform given tasks under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(These adaptations apply in all the subsequent activities where division, use of concrete objects in division, writing and use of adapted ICT devices is involved under this sub strand).*	When do you use division in real life?

			• Learners in purposive pairs or groups to divide a 2-digit number by a 1-digit number with remainder using counters. • Learners in purposive pairs or groups to divide a 2-digit number by a 1- digit number using the long form of division. • Learners in purposive pairs or groups to divide a 2-digit number by a 1-digit number using own strategies. • Learners in purposive pairs or groups to use relationship between multiplication and division in working out problems. • Learners in purposive pairs or groups or individually to play digital games involving division.	

Core Competencies to be developed:

- Critical thinking and problem solving: as learners estimate quotient in division and as they relate multiplication to division.
- Digital literacy: as learners play digital games involving division.

Pertinent and Contemporary Issues: • **Life Skills Issues:** The skills of knowing and living with others: as learners help each other in group work; The skills of knowing and living with others: as learners work in groups to come up with common solutions.	**Values:** • Responsibility: as learners work individually for the common goal of the group. • Respect: as learners accommodate each other's opinion in the group. • Unity: as learners work out in groups for a common purpose.
Link to other Learning Areas • Languages: as learners enhance communication skills.	**Suggested Community Service Learning Activities** • Learners to assist in sharing out items in equal groups during social functions.
Suggested Non-Formal Activities to Support Learning • Learners to distribute themselves into teams during play activities for example, football.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes.

Suggested Resources: Place value apparatus, number charts, number cards, multiplication table, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person.

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Divide up to a 2-digit number by a 1- digit number without remainder in different situations.	Learner divides a 2-digit number and beyond by a 1- digit number without remainder in different situations neatly.	Learner divides up to a 2-digit number by a 1-digit number without remainder in different situations.	Learner divides up to a 2-digit number by a 1-digit number without remainder in different situations with guidance.	Learner divides up to a 10 by one digit number without remainder in different situations with much guidance.
Divide up to a 2-digit by a 1-digit number with remainder in real life situations.	Learner divides a 2-digit number and beyond by a 1-digit number with remainder in real life situations neatly.	Learner divides up to a 2-digit by a 1-digit number with remainder in real life situations.	Learner divides up to a 2-digit by a 1-digit number with remainder in real life situations under guidance.	Learner divides up to a 2-digit number by a 1-digit number without remainder in real life situations with assistance.
Use relationship between multiplication and division to work out problems in real life situations.	Learner uses relationship between multiplication and division to work out problems in real life	Learner uses relationship between multiplication and division to work out	Learner uses relationship between multiplication and division to work out problems in real life	Learner attempts to use relationship between multiplication and division to work out problems in real life

	situations neatly and with ease.	problems in real life situations.	situations**.** with guidance.	situations**.** with a lot of assistance.
Use ICT devices for learning and leisure.	Learner uses ICT devices for learning and leisure, fast and confidently.	Learner uses ICT devices for learning and leisure.	Learner uses ICT devices for learning and leisure with assistance.	Learner uses ICT devices for leisure.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	1.6 FRACTIONS (6 Lessons)	By the end of the sub strand, the learner should be able to: a) represent a fraction with denominators not exceeding 12 as part of a whole and as part of a group in real life situations, b) represent and write fractions whose denominators do not exceed 12 in real life situations, c) identify the numerator and denominator in a fraction in real life situations, d) identify different types of fractions in real life, e) convert improper fractions to mixed fractions in different situations, f) convert mixed fractions to improper fractions in different contexts, g) use ICT devices for learning and enjoyment,	• Learners in purposive pairs or groups to represent fractions as part of a whole and as part of a group using concrete objects. Learners on positioning devices should be preferentially and appropriately positioned to avoid the development of secondary conditions such as contractures while those with short stature should have working surfaces such as tables lowered as they take part in this exercise. Those with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to give their views as they carry out group activities. Those with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as prosthesis or head or mouth pointers to fold or draw or shade or sort concrete objects or mount or use head operated optical mouse and adapted ICT device with appropriate software such as Microsoft paint to draw or copy paste diagrams that represent fractions as part of a whole and as part of a group or	1. When do you use fractions in real life? 2. How can you represent fractions?

		h) appreciate application of fractions in real life situations.	be physically assisted by peers or teacher aide or teacher to perform given tasks under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(These adaptations apply in all the subsequent activities where fractions, writing, mounting, drawing, shading and use of adapted ICT devices is involved under this sub strand).* • Learners in purposive pairs or groups to discuss the top and bottom numbers in a fraction and share with other groups. • Learners in purposive in pairs or groups to write fractions represented as part of whole or part of a group. • Learners in purposive pairs or groups to represent fractions as part of a whole or part of a group using cut outs, counters or clock face. • Learners in purposive pairs or groups or individually to represent proper, improper and mixed fractions as part of a whole or as part of a group using paper cut outs or counters. • Learners in purposive pairs or groups to convert improper fractions to mixed fractions.	

			• Learners in purposive pairs or groups to convert mixed fractions to improper fractions. • Learners in purposive pairs or groups or individually to play digital games involving fractions.	

Core Competencies to be developed:

- Critical thinking and problem solving: as learners convert fractions to mixed numbers.
- Digital literacy: as learners play digital games on fractions.
- Learning to learn: as learners explore fractions in daily life such as sharing fruits.

Pertinent and Contemporary Issues: • **Life Skills Issues:** The skills of knowing and living with others: as learners help each other in group work; as learners appreciate ethnic groups in Kenya as part of a whole nation. • **Social Economic Issues:** safety and security: as learners handle counters and concrete objects.	**Values:** • Responsibility as learners work for the common goal of the group. • Respect as learners come up with common solutions in a group.
Link to other Learning Areas • Languages as learners discuss in pairs and in groups.	**Suggested Community Service Learning Activities** • Learners may assist in allocating time for different activities or tasks in a day at home and community. • Learners share out whole items divided into equal parts at home with family members.
Suggested Non-Formal Activities to support Learning: • Learners to share items during play.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises,quizzes

Suggested Resources:
Number cards, equivalent fraction board, circular and rectangular cut-outs, adapted counters, clock face, adhesives such as cello tape, adapted coloured pencils or crayons, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Represent fractions as part of a whole in real life situations.	Learner represents fractions as part of a whole in real life situations neatly and with ease.	Learner represents fractions as part of a whole in real life situations.	Learner represents fractions as part of a whole in real life situations with assistance.	Learner represents ¼ and ½ as part of a whole in real life situations with guidance.
Represent and write fractions with denominators up to 12 in real life situations.	Learner represents and writes fractions with denominators up to 12 in real life situations neatly and with ease.	Learner represents and writes fractions with denominators up to 12 in real life situations.	Learner represents and writes fractions with denominators up to 12 in real life situations with guidance.	Learner represents and writing fractions with denominators up to 9 in real life situations with assistance.
Identify numerator and denominator in real life situations.	Learner identifies numerator and denominator in real life situations neatly and with ease.	Learner identifies numerator and denominator in real life situations.	Learner identifies numerator and denominator in real life situations with assistance.	Learner attempts identifying numerator and denominator in real life situations with a lot of guidance.
Represent fractions as part of a group in real life.	Learner represents fractions as part of a group in real life neatly and with ease.	Learner represents fractions as part of a group in real life.	Learner represents fractions as part of a group in real life with prompts.	Learner represents ½ and ¼ as part of a group in real life with assistance.
Identify types of fractions in different situations.	Learner identifies types of fractions in different situations neatly and with ease.	Learner identifies types of fractions in different situations.	Learner identifies types of fractions in different situations with assistance.	Learner identifies types of fractions in different situations with a lot of guidance.
Convert improper fractions to mixed fractions in different situations.	Learner converts improper fractions to mixed fractions in	Learner converts improper fractions to mixed fractions in different situations.	Learner converts improper fractions to mixed fractions in	Learner attempts converting improper fractions with single digit numerator and

	different situations correctly and with ease.		different situations with guidance.	denominator to mixed fractions in different situations with a lot of guidance.
Convert mixed fractions to improper fractions in different contexts.	Learner converts mixed fractions to improper fractions in different contexts with ease.	Learner converts mixed fractions to improper fractions in different contexts.	Learner converts mixed fractions to improper fractions in different contexts with guidance.	Learner attempts to convert mixed fractions to improper fractions in different contexts with a lot of assistance.
Use ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with prompts.	Learner uses ICT devices for enjoyment with guidance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	1.7 DECIMALS (10 Lessons)	By the end of the sub strand, the learner should be able to: a) identify a tenth and a hundredth in real life situations, b) represent decimals using decimal notation in given situations, c) identify place value of decimals up to hundredths in real life, d) order decimals up to hundredths in computation, e) use ICT devices for learning and leisure, f) appreciate use of decimals in real life situations.	• Learners in purposive pairs or groups to discuss where tenths and hundredths are used in real life situations. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to give own views. Learners on positioning devices should be preferentially and appropriately positioned to avoid the development of secondary conditions such as contractures. *(Apply these adaptations in all the subsequent activities which involve speech, group activities or demonstration under this sub strand).* • Learners in purposive pairs or groups to represent decimals using place value charts. Learners with short stature should be preferentially and appropriately positioned and also have working surfaces such as tables as well as place value charts lowered as they	How can you use decimals in real life situations?

			take part in this activity. Those with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as prosthesis or head or mouth pointers to draw or mount or arrange number cards on the multipurpose communication board or use head operated optical mouse and adapted ICT device such as computers with appropriate software such as *Microsoft word* to type or copy paste numbers that represent decimals or be physically assisted by peers or teacher aide or teacher to carry out given tasks under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(These adaptations apply in all the subsequent activities which involve writing, mounting and drawing, ordering decimal numbers and use of adapted ICT devices under this sub strand).*	

			• Learners in purposive pairs or groups to represent tenths and hundredths using place value charts. • Learners in purposive pairs or groups or individually to write tenths and hundredths using decimal notation on a place value chart. • Learners in purposive pairs or groups or individually to order given decimals in ascending and descending order. • Learners in purposive pairs or groups or individually to play digital games involving decimals.	

Core Competencies to be developed:

- Creativity and imagination: as learners represent decimals on place value chart.
- Critical thinking and problem solving: as learners order decimals.
- Digital literacy: as learners play digital games involving decimals.

Pertinent and Contemporary Issues: • **Social Economic Issues:** Safety and security: as learners use adapted digital devices; Financial literacy: as learners group money in different denominations.	**Values:** • Social justice: as learners from different backgrounds work together in groups. • Respect: as learners accommodate diverse views from the group members in discussions. • Unity: as learners work out tasks together in the group.
Link to other Learning Areas • Languages as learners discuss in pairs or groups.	**Suggested Community Service Learning Activities** • Learners may assist in reading measurements in decimals during games or in sports meets.
Suggested Non-Formal Activities to support Learning:	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes.

• Learners to represent decimals using paper cut-outs during play.	
Suggested Resources: 100 square grid, rectangular paper strips, place value chart on decimals, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, adhesives such as cello tape, pen or pencil holders or grips	
Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person	

Assessment Rubrics

Indicators	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Identify a tenth and a hundredth in real life situations.	Learner identifies a tenth and a hundredth and beyond in real life situations.	Learner identifies a tenth and a hundredth in real life situations.	Learner identifies a tenth and a hundredth in real life situations with prompts.	Learner attempts identifying a tenth and a hundredth in real life situations with much guidance.
Represent decimals using decimal notation in given situations.	Learner represents decimals using decimal notation in given situations with ease.	Learner represents decimals using decimal notation in given situations.	Learner represents decimals using decimal notation in given situations with assistance.	Learner attempts representing decimals using decimal notation in given situations with a lot of guidance.
Identify place value of decimals up to hundredths in real life.	Learner identifies place value of decimals up to hundredths and beyond in real life.	Learner identifies place value of decimals up to hundredths in real life.	Learner identifies place value of decimals up to hundredths in real life with prompts.	Learner attempts identifying place value of decimals up to hundredths in real life with much assistance.

Order decimals to hundredths in computation.	Learner orders decimals to hundredths and beyond in computation correctly.	Learner orders decimals up to hundredths in computation.	Learner orders decimals up to hundredths in computation with assistance.	Learner attempts ordering decimals up to hundredths in computation with a lot of guidance.
Use ICT devices for learning and leisure.	Learner uses ICT devices for learning and leisure fast and confidently.	Learner uses ICT devices for learning and leisure.	Learner uses ICT devices for learning and leisure with guidance.	Learner uses ICT devices for leisure with assistance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
2.0 MEASUREMENT	**2.1 LENGTH (10 Lessons)**	By the end of the sub strand, the learner should be able to: a) identify the centimetre as a unit of measuring length in real life situations, b) measure length in centimetres in real life situations, c) estimate and measure length in centimetres in real life situations, d) establish the relationship between metres and centimetres practically, e) convert metres to centimetres and centimetres to metres in real life situations, f) work out perimeter of plane figures in different contexts, g) work out addition of length in centimetres and metres in real life situations,	• Learners in purposive pairs or groups to identify the centimetre and mark out lengths of 1 centimetre using a ruler. Learners with speech difficulties could identify using residual speech as they are lip read by peers or teacher aide or teacher or point on the multipurpose communication board or write or type or stamp. *(Apply this adaptation in all the subsequent activities which involve speech such as discussions, identification, and estimation of length and conversion of units of measurement under this sub strand).* • Learners in purposive pairs or groups to measure length of a given object in centimetres using a metre rule or a tape measure. Learners with manipulation difficulties could use any alternative functional part of the body or assistive technology such as prosthesis to measure lengths using adapted metre rule or tape measure or metre strings with loops at the ends or be physically assisted by peers or teacher aide or teacher under their instruction. They could record their measurements by writing or typing or mounting or taking photos using adapted	1. How can you measure distance? 2. Why do we measure distance in real life?

		h) work out subtraction involving length in metres and centimetres in real life situations, i) work out multiplication involving metres and centimetres in real life situations, j) work out division involving metres and centimetres in real life situations, k) use ICT devices for learning and enjoyment, l) appreciate use of metres and centimetres in measuring distance in real life.	digital devices. *(Apply these adaptations in all the subsequent activities that involve measuring length, recording, and drawing, conversion of units of measurement, arranging number cards, addition, subtraction, multiplication and division of length under this sub strand).* • Learners in purposive pairs or groups or individually to estimate the length of a given object in centimetres. • Learners to measure actual length of the estimated length in centimetres. • Learners in purposive pairs or groups to measure length in metres and centimetres and establish the relationship between the units. • Learners in purposive pairs or groups use the relationship between centimetres and metres in real life situations. • Learners in purposive pairs or groups or individually to convert metres into centimetres and centimetres into metres. • Learners in purposive pairs or groups to work out perimeter of plane figures in different contexts. • Learners in purposive pairs or groups to work out addition and subtraction involving metres and centimetres in real life situations. • Learners in purposive pairs or groups to work out multiplication involving metres and centimetres in real life situations.	

			• Learners in purposive pairs or groups to work out division involving metres and centimetres in real life situations. • Learners in purposive pairs or groups to play digital games involving length. Learners with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as head operated optical mouse and adapted ICT device with appropriate software such as *calculator* or be physically assisted by peers or teacher aide or teacher to perform given tasks under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision.	

Core Competencies to be developed:

- Self-efficacy: as learners report their estimates.
- Critical thinking and problem solving: as learners estimate and confirm distances or lengths.
- Digital literacy: as learners play digital games.

Pertinent and Contemporary Issues:	**Values:**
• **Life Skills Issues:** Self-awareness: as learners estimate distance or length. Moral Education: as learners relate their estimates to actual measurement and when measuring heights of seedlings in school to monitor growth.	• Responsibility: as learners report accuracy of their measurements. • Respect: as learners accommodate different answers from each other in the group. • Integrity: as learners read own measurements.
Link to other Learning Areas • Languages: as learners participate in group discussions.	**Suggested Community Service Learning Activities**

• Home science: as learners measure length of different items for example clothing materials.	• Learners may assist in measuring length of items in the community that require accuracy. • Learners can measure and mark community playing fields.
Suggested Non-Formal Activities to Support Learning: • Learners to mark play areas.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes
Suggested Resources: Adapted Metre rule, 1 metre sticks, tape measure, metre strings with loops, number cards , multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips	
Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person	

Assessment Rubric

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Identify the centimetre as a unit of measuring length in real life situations.	Learner identifies the centimetre as a unit of measuring length in real life situations with ease.	Learner identifies the centimetre as a unit of measuring length in real life situations.	Learner identifies the centimetre as a unit of measuring length in real life situations with assistance.	Learner attempts identifying the centimetre as a unit of measuring length in real life situations with much guidance.
Measure length in centimetres in real life situations.	Learner accurately measures length in centimetres in real life situations.	Learner measures length in centimetres in real life situations.	Learner measures length in centimetres in real life situations with guidance.	Learner attempts to measure length in centimetres in real life situations with prompts.

Estimate and measure length in centimetres in real life situations.	Learner estimates and measures length in centimetres in real life situations and also assists peers.	Learner estimates and measures length in centimetres in real life situations.	Learner estimates and measures length in centimetres in real life situations with some guidance.	Learner attempts to estimate and measure length in centimetres in real life situations with a lot of guidance.
Establish the relationship between metres and centimetres practically.	Learner establishes the relationship between metres and centimetres practically with ease.	Learner establishes the relationship between metres and centimetres practically.	Learner establishes the relationship between metres and centimetres practically with minimal guidance.	Learner attempts establishing relationship between metres and centimetres practically with a lot of guidance.
Convert metres to centimetres in real life situations.	Learner converts metres to centimetres in real life situation neatly.	Learner converts metres to centimetres in real life situation.	Learner converts metres to centimetres in real life situation with assistance.	Learner attempts to convert metres to centimetres with assistance in real life situation with a lot of guidance.
Convert centimetres to metres in real life situations.	Learner converts centimetres to metres and beyond correctly in real life situations.	Learner converts centimetres to metres in real life situation.	Learner converts centimetres to metres in real life situations with prompts.	Learner attempts converting centimetres to metres in real life situations with prompts.
Work out perimeter of plane shapes in different contexts.	Learner works out perimeter of plane shapes in different contexts neatly and with ease.	Learner works out perimeter of plane shapes in different contexts.	Learner works out perimeter of plane shapes in different contexts with prompts.	Learner attempts to work out perimeter of plane shapes in different contexts.
Add length in metres and centimetres in real life situations.	Learner adds length in metres and centimetres in real life situations neatly and with ease.	Learner adds length in metres and centimetres in real life situations.	Learner adds length in metres and centimetres in real life situations with guidance.	Learner adds length in metres or centimetres in real life situations with much guidance.
Subtract length in metres and	Learner subtracts length in metres and	Learner subtracts length in metres and	Learner subtracts length in metres and	Learner subtracts length in metres or centimetres in real

centimetres in real life situations.	centimetres in real life situations neatly and with ease.	centimetres in real life situations.	centimetres in real life situations with assistance.	life situations with much assistance.
Multiply length in metres and centimetres in real life situations.	Learner multiplies length in metres and centimetres in real life situations neatly and with ease.	Learner multiplies length in metres and centimetres in real life situations.	Learner multiplies length in metres and centimetres in real life situations with guidance.	Learner multiplies length in metres or centimetres in real life situations with a lot of guidance.
Divide length in metres and centimetres in real life situations.	Learner divides length in metres and centimetres in real life situations neatly and with ease.	Learner divides length in metres and centimetres in real life situations**.**	Learner divides length in metres and centimetres in real life situations with assistance.	Learner divides length in metres or centimetres in real life situations with a lot of assistance.
Use ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with guidance.	Learner uses ICT devices for enjoyment with guidance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	2.2 Area (8 Lessons)	By the end of the sub strand, the learner should be able to; a) compare area of given surfaces by direct comparison, b) calculate area of squares and rectangles by counting unit squares, c) calculate area of squares and rectangles as a product of number of rows and columns, d) use ICT devices for learning and enjoyment, e) appreciate use of rows and columns in calculating area of squares and rectangles in real life situations.	• Learners in purposive pairs or groups to compare area of two surfaces directly by placing one surface on the other. Learners with manipulation difficulties could use any alternative functional part of the body or assistive technology such as head or mouth pointers or prosthesis to compare the area of two surfaces or use adapted digital devices such as computers with expanded keyboards, key guards, sticky keys, head operated optical mouse and appropriate software such as *Microsoft Word or Paint* to insert auto shapes of different sizes and shapes, place smaller ones on top of larger ones and compare their areas or be physically assisted by peers or teacher aide or teacher to carry out given tasks under their instructions. *(Apply these adaptations in all the subsequent activities that involve writing, drawing and arranging number cards mounting under this sub strand)*. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to express own views. *(These adaptations apply in all the subsequent activities which involve speech under this sub strand)*. • Learners in purposive pairs or groups to use unit square cut outs to cover a given surface. Learners with manipulation difficulties could require large	How can you work out area of different surfaces?

			cut out cards made of heavy gauge paper for enhanced manipulation. Different groups could use varied sizes of square cut outs. *(This adaptation also applies in all the subsequent activities that involve the use of paper cut- outs, arranging cards in rows and columns and counting paper cut outs under this sub strand).* • Learners in purposive pairs or groups to count the number of square unit cut outs used to cover the surface. • Learners in purposive pairs or groups to establish that area of a rectangle or a square is same as number of rows multiplied by number of columns. • Learners in purposive pairs or groups to work out area of squares and rectangles by multiplying number of rows and number of columns. • Learners in purposive pairs or groups play digital games involving area of rectangles and squares. Learners with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as head operated optical mouse and adapted ICT devices with appropriate software such as *calculator* or be physically assisted by peers or teacher aide or teacher to perform given tasks under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision.	
Core Competencies to be developed: • Communication and collaboration: as learners use unit squares to cover a given surface. • Digital literacy: as learners play digital games.				

<table>
<tr><td colspan="2">• Learning to learn: as learners explore areas of different shapes in their homes.</td></tr>
<tr><td>Pertinent and Contemporary Issues:
Social Economic Issues:
• Safety and security: Social cohesion as learners work out area of plain figures in pairs or groups;
• Environmental Issues: Environmental education as learners calculate area of their flower gardens in school and estimate the number of flowers in them.</td><td>Values:
• Respect: as learners accommodate each other's opinion as they work in pairs or groups in placing and counting square cut outs;
• Integrity: as learners calculates area in different contexts.</td></tr>
<tr><td>Link to other Learning Areas:
• Languages: as learners discuss in group activities.</td><td>Suggested Community Service Learning Activities
• Learners may assist in working out number of tiles to be used to cover the floor in their home or community hall.
• Learners may visit a farmer in the neighborhood and help work out area of land under different crops or livestock.
• Learners may work out area of tables at home and report to the teacher.</td></tr>
<tr><td>Suggested Non-Formal Activities:
• Learners to mark their areas of operation in different games for example netball.</td><td>Suggested modes of Assessment:
• Oral questions, observation, written exercises, quizzes</td></tr>
<tr><td colspan="2">Suggested Resources:
Square and rectangular cut-outs, adapted Metre rule, 1 metre sticks, tape measure, metre strings with loops, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips</td></tr>
<tr><td colspan="2">Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person.</td></tr>
</table>

Assessment Rubrics

Indicators	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Compare area of surfaces by direct comparison.	Learner compares area of surfaces by direct comparison with ease.	Learner compares area of surfaces by direct comparison.	Learner compares area of surfaces by direct comparison with little assistance.	Learner compares area of surfaces by direct comparison with a lot of guidance.
Calculate area of squares and rectangles by counting.	Learner calculates area of squares and rectangles through counting accurately and with ease.	Learner calculates area of squares and rectangles through counting.	Learner calculates area of squares and rectangles through counting with prompts.	Learner attempts calculating area of squares and rectangles through counting with a lot of guidance.
Calculate area of squares and rectangles as a product of number of rows and columns.	Learner calculates area of squares and rectangles as a product of number of rows and columns accurately and with ease.	Learner calculates area of squares and rectangles as a product of number of rows and columns.	Learner calculates area of squares and rectangles as a product of number of rows and columns with guidance.	Learner calculates area of either squares or rectangles as a product of number of rows and columns with guidance.
Use ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with assistance.	Learner uses ICT devices for enjoyment with guidance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	2.3 MASS (6 Lessons)	By the end of the sub strand, the learner should be able to: a) use a kilogram mass to measure masses of different objects practically,	• Learners in purposive pairs or groups to use one kilogram masses to measure masses of given objects using a beam balance. Learners with manipulation difficulties could use any alternative functional part of the body or assistive	How can you measure mass in kg?

		b) use ½ kg and ¼ kg masses to measure masses of different objects practically, c) add mass in kilograms in real life situations, d) subtract mass involving kilograms in real life situations, e) use ICT devices for learning and enjoyment, f) appreciate measuring mass of different objects.	technology such as universal cuffs with a stick or prosthesis to put masses of different objects on the beam balance. They could also be involved in recording the measurements using adapted digital devices such as computers with expanded keyboards, key guards, sticky keys and or head operated optical mouse or be physically assisted by peers or teacher aide or teacher to carry out given tasks under their instructions. The objects whose masses are being measured could be divided into smaller bits that learners with brittle bones and those with muscular dystrophy could easily handle. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(Apply these adaptations in all the subsequent activities that involve making different masses, measurement of mass, writing or typing and use of adapted ICT devices under this sub strand)* • Learners in purposive pairs or groups make a ½ kg mass and use it to measure mass of given objects using a beam balance. • Learners in purposive pairs or groups make a ¼ kg mass and use it to measure mass of given objects using a beam balance and an electronic balance. Learners with brittle bones, porous bones (osteoporosis) and those with muscular dystrophy should be	

			given less vigorous tasks in line with their individual functional ability. • Learners in purposive pairs or groups add mass in kilograms (kg). Learners with manipulation difficulties could use any alternative functional part of the body or appropriate Assistive Technology such as head or mouth pointers, multipurpose stamps, universal cuffs, adapted pens or pencils to write or stamp or mount their solutions to given problems; or use head operated optical mouse and adapted ICT devices such as computers with appropriate modifications and software such as *calculator* or be physically assisted by peers or teacher aide or teacher under their instructions. *(Apply this adaptation in all the subsequent activities that involve calculations such as addition and subtraction under this sub strand).* • Learners in purposive pairs or groups subtract mass in kilograms (kg). • Learners in purposive pairs or groups play digital games involving mass.	

Core Competencies to be developed:

- Communication and collaboration: as learners measure mass in ½ kg and ¼ kg.
- Digital literacy: as learners play a digital games involving mass.
- Critical thinking and problem solving: as learners prepare ½ kg and ¼ kg masses from 1 kg mass.

Pertinent and Contemporary Issues:	**Values:**
• **Life skill Issues:** Skill of knowing and living with others: Social cohesion as learners work in pairs or groups in measuring mass in ½ kg and ¼ kg. • **Social Economic Issues:**	• Respect: as learners work in groups or pairs in measuring mass. • Honesty: as learners give their measurements.

Animal welfare: as learners document mass of animal feeds consumed by each animal in school or home; Safety and security: as learners play with different objects in the school compound.	
Link to other Learning Areas • Home Science: as learners measure different ingredients. • Agriculture: as learners feed livestock.	**Suggested Community Service Learning Activities** • Learners may assist in measuring mass of food stuffs in community functions. • Learners may assist farmers in feeding animals with different masses of feeds.
Suggested Non-Formal Activities to support Learning: • Learners to play games using a seesaw.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes.
Suggested Resources: 1 kg mass, soil or sand, manual or electronic weighing machine, beam balance, number cards, multipurpose stamps, multipurpose communication board, universal cuffs with sticks, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips	
Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person.	

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Use a Kilogram mass to measure mass of different objects practically.	Learner accurately uses a Kilogram mass to measure mass of different objects practically.	Learner uses a Kilogram mass to measure mass of different objects practically.	Learner uses a Kilogram mass to measure mass of different objects practically with some assistance.	Learner attempts using a Kilogram mass to measure mass of different objects practically with a lot of guidance.
Use ½ kg and ¼ kg masses to measure mass	Learner uses ½ kg and ¼ kg masses to measure	Learner uses ½ kg and ¼ kg masses to	Learner uses ½ kg and ¼ kg masses to measure mass of	Learner uses either ½ kg or ¼ kg masses to measure mass of

of different objects practically.	mass of different objects practically with ease.	measure mass of different practically.	different objects practically with assistance.	different objects practically with a lot of assistance.
Add mass in kg in real life situations.	Learner adds mass in kg in real life situations neatly and with ease.	Learner adds mass in kg in real life situations.	Learner adds mass in kg in real life situations with guidance.	Learner attempts adding mass in kg in real life situations with a lot of guidance.
Subtract mass in kg in real life situations.	Learner subtracts mass in kg in real life situations neatly and with ease.	Learner subtracts mass in kg in real life situations.	Learner subtracts mass in kg in real life situations with prompts.	Learner attempts subtracting mass in kg in real life situations with a lot of assistance.
Use ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with guidance.	Learner uses ICT devices for enjoyment with prompts.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	2.4 VOLUME (6 Lessons)	By the end of the sub strand, the learner should be able to: a) work out volume of cubes and cuboids in real life situations, b) use ICT devices for learning and enjoyment, c) appreciate use of piling method in working out volume in real life.	• Learners in purposive pairs or groups or individually to pile cubes. Learners with manipulation difficulties could use any alternative functional part of the body or assistive technology such as universal cuffs with a stick or prosthesis to pile cubes or use adapted digital devices such as computers with expanded keyboards, key guards, sticky keys and or head operated optical mouse and appropriate software such as *Microsoft word* to insert, pile up cubes from the *auto shapes* or be physically assisted by peers or teacher aide or teacher to perform given tasks under their instructions. The cubes being used should be larger and made of heavy gauge paper for enhanced grip. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(Apply these adaptations in all the subsequent activities that involve speech, piling and counting cubes and cuboids, recording and use of ICT devices under this sub strand)* • Learners in purposive pairs or groups or individually to count the piles of cubes to determine the volume. Learners with speech difficulties could count orally or by signing pointing or writing or typing or stamping.	How can you work out volume of cubes and cuboids?

			(This adaptation applies in all the subsequent activities that involve counting and discussion). • Learners in purposive pairs or groups or individually to pile cuboids. • Learners in purposive pairs or groups or individually to count the piles of cuboids to determine the volume. • Learners in purposive pairs or groups or individually to use ICT devices to play games.	

Core Competencies to be developed:

- Communication and collaboration: as learners pile cubes and cuboids.
- Digital literacy: as learners play digital games.
- Learning to learn: as learners explore objects of different volumes at home or school or in their environment.

Pertinent and Contemporary Issues: • **Social Economic Issues:** Environmental education: as learners make the environment clean and neat; Safety and Security: as learners pile objects.	**Values:** • Honesty: as learners determine and report on the volume in the stacks of cubes and cuboids as they have counted. • Unity: as learners measure volume in groups.
Link to other Learning Areas: • Languages: as learners discuss in groups. • Agriculture: as learners learn how to stock hay in a store.	**Suggested Community Services Learning Activities** • Learners to be involved in stocking hay in a store and in arrangement of boxes in a store or shop.
Suggested Non-Formal Activities to support Learning: • Learners to pile up cubes and cuboids during play.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises.

Suggested Resources:
Cubes, cuboids, number cards, multipurpose stamps, multipurpose communication board, universal cuffs with sticks, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Work out volume of cubes in real life situations.	Learner works out volume of cubes in real life situations neatly and with ease.	Learner works out volume of cubes in real life situations.	Learner works out volume of cubes in real life situations with guidance.	Learner attempts working out volume of cubes in real life situations with a lot of assistance.
Work out volume of cuboids in real life situations.	Learner works out volume of cuboids in real life situations neatly and with ease.	Learner works out volume of cuboids in real life situations.	Learner works out volume of cuboids in real life situations with assistance.	Learner attempts working out volume of cuboids in real life situations with a lot of guidance.
Uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with some guidance.	Learner uses ICT devices for enjoyment with assistance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	2.5 CAPACITY (6 Lessons)	By the end of the sub strand, the learner should be able to: a) measure capacity in litres in real life situations, b) measure capacity in ½ litres and ¼ litres in real life situations, c) Add and subtract capacity in litres in real life situations, d) use ICT devices for learning and enjoyment, e) appreciate use of the litre as a unit of measuring capacity in real life situations.	• Learners in purposive pairs or groups to measure capacity of containers using a 1-litre container. Learners with manipulation difficulties could use any alternative functional part of the body or assistive technology such as universal cuffs or prosthesis to fill and empty as well as measure capacity of containers. Learners with muscular dystrophy and those with brittle bones could use smaller and lighter containers to scoop water as they fill 1 litre containers. Learners with manipulation difficulties could also use adapted digital devices such as computers with expanded keyboards, key guards and sticky keys as well as head operated optical mouse and appropriate software such as *Microsoft word* to record their measurements or be physically assisted by peers or teacher aide or teacher to carry out given tasks under their instructions. The containers being used should be lighter and with grips or handles. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication	How can you measure capacity in real life situations?

			board to give their responses. *(Apply these adaptations in all the subsequent activities that involve speech, measuring capacity, recording and use of adapted ICT devices under this sub strand).* • Learners in purposive pairs or groups or individually to make½ litre and ¼ litre containers through filling and emptying using a 1 litre container. Learners with manipulation difficulties could be given tasks to perform according to their individual level of ability or be physically assisted by peers or teacher aide or teacher in carrying out this activity under their instructions. • Learners in purposive pairs or groups to use ½ litre and ¼ litre containers to measure capacity of other containers. • Learners in purposive pairs or groups to add capacity involving litres in real life situations. Learners with manipulation difficulties could use any alternative functional part of the body to write or mount or stamp or arrange number and operation sign cards or use appropriate Assistive Technology such as head operated optical mouse and adapted ICT device with appropriate software such as *calculator* or be physically assisted by peers or teacher aide or teacher to perform given tasks under their instructions.*(Apply this adaptation in all the subsequent activities that involve addition and subtraction of capacity under this sub strand).*	

			• Learners in purposive pairs or groups to subtract capacity involving litres in real life situations. • Learner in purposive pairs or groups to play digital games involving capacity.	

Core Competencies to be developed:

- Communication and collaboration: as learners discuss and learn from one another.
- Critical thinking and problem solving: as learners make ½ litre and ¼ litre containers.
- Digital literacy: as learners play digital games.

Pertinent and Contemporary Issues: • **Social Economic Issues:** Safety and Security: as learners prepare ½ litre and ¼ litre containers; Environmental Issues: as learners make the environment clean and neat by avoiding spillage and wastage.	**Values:** • Honesty: when groups report according to their own finding. • Unity: as the Learners work in groups.
Link to other Learning Areas: • Languages: as learners discuss in groups. • Home Science: as learners conduct practical activities involving measurement of liquids.	**Suggested Community Service Learning Activities** • Learners may assist in measuring capacity in social functions.
Suggested Non-Formal activities to support Learning: • Learners to fill and empty containers during play.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes.

Suggested Resources:
1 litre containers, lighter containers of different sizes, containers with handles, sandy soil, water, number cards, operation sign cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person.

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Measure capacity in litres by filling and emptying in real life situations.	Learner measures capacity in litres by filling and emptying in real life situations with ease.	Learner measures capacity in litres by filling and emptying in real life situations.	Learner measures capacity in litres by filling and emptying in real life situations with assistance.	Learner attempts measuring capacity in litres by filling and emptying in real life situations with a lot of assistance.
Measure Capacity using ½ litres and ¼ litres in real life situations.	Learner measures capacity using ½ litres and ¼ litres in real life situations with ease.	Learner measures capacity using ½ litres and ¼ litres in real life situations.	Learner measures capacity using ½ litres and ¼ litres in real life situations with guidance.	Learner measures capacity using ½ litres in real life situations with a lot of assistance.
Add Capacity in litres in real life situations.	Learner adds capacity in litres in real life situations neatly and with ease.	Learner adds capacity in litres in real life situations.	Learner adds capacity in litres in real life situations with assistance.	Learner attempts adding capacity in litres in real life situations with a lot of guidance.
Subtract Capacity in litres in real life situations.	Learner subtracts capacity in litres in real life situations neatly and with ease.	Learner subtracts capacity in litres in real life situations.	Learner subtracts capacity in litres in real life situations with assistance.	Learner attempts subtracting capacity in litres in real life situations with a lot of guidance.
Uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with prompts.	Learner uses ICT devices for enjoyment with prompts.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	2.6 TIME **(10 Lessons)**	By the end of the sub strand, the learner should be able to: a) read and tell time in a.m. and p.m. in real life situations, b) estimate time using a.m. and p.m. in real life situations, c) convert units of time in real life situations, d) record time durations in hours and minutes in real life situations, e) work out time duration in real life situations, f) use ICT devices for learning and enjoyment, g) appreciate time in real life situations.	• Learners in purposive pairs or groups to read and tell time in a.m. and p.m. using digital and analogue clocks. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or write or type or stamp or point to tell time. *(Apply this adaptation in all the subsequent activities where speech such as estimating time using the shadow is involved under this sub strand).* • Learners in purposive pairs or groups to estimate time of the day using the shadow. • Learners in purposive pairs or groups to convert hours to minutes and minutes to hours. Learners with manipulation difficulties could use any alternative functional part of the body to write or stamp or mount or appropriate Assistive Technology such as head operated optical mouse and adapted ICT device with appropriate software such as calculator to convert units of time or be physically assisted by peers or teacher aide or teacher under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(These adaptations apply in all the subsequent activities which involve addition and subtraction of time, writing, typing, measuring and recording time, making clock faces, conversion of units of time and use of adapted ICT devices under this sub strand).* • Learners in purposive pairs or groups to convert hours to days and days to hours.	1. How can you tell time? 2. How can you find out time taken to do an activity?

			• Learners in purposive pairs or groups to convert days to weeks and weeks to days. • Learners in purposive pairs or groups to measure and record duration of events in hours and minutes using digital and analogue clocks. • Learners in purposive pairs or groups to work out addition involving units of time. • Learners in purposive pairs or groups to work out subtraction involving units of time. • Learners in purposive pairs or groups or individually to play digital games involving time.	

Core Competencies to be developed:

- Imagination and creativity: as learners estimate time using shadows.
- Learning to learn: as learners convert different units of time.
- Digital literacy: as learners play digital games.

Pertinent and Contemporary Issues: • **Life Skills Issues:** Effective decision making skills: as learners manage time; Effective decision making skills: as learners observe time in sports and games.	**Values:** • Integrity: as learners follow the scheduled routine in school. • Responsibility: as learners use the digital and analogue clocks in reading and telling time.
Link to other Learning Areas • Physical and Health Education: as learners time activities. • Languages: as learners participate in discussions. • Agriculture as learners observe time for feeding animals. • Science and Technology: as learners use the sun as source of light and also in estimating time duration of experiments.	**Suggested Community Service Learning Activities** • Learners may assist in maintaining correct time for taking medicine at home or school. • Learners to observe time at home and community activities. • Learners can assist farmers in planting, weeding or harvesting during the different seasons.

Suggested Non-Formal Activities to support Learning:	Suggested modes of Assessment:
• Learners to observe shadows and relate them to different times of the day.	• Oral questions, observation, written exercises, quizzes

Suggested Resources:
Analogue and digital clocks, digital watches, a.m. and p.m. charts, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Read time in a.m. and p.m. in real life situations.	Learner reads time in a.m. and p.m. in real life situations with ease.	Learner reads time in a.m. and p.m. in real life situations.	Learner reads time in a.m. and p.m. in real life situations with prompts.	Learner reads time in a.m. i real life situations with muc assistance.
Tell time in a.m. and p.m. in real life situations.	Learner tells time in a.m. and p.m. in real life situations with ease.	Learner tells time in a.m. and p.m. in real life situations.	Learner tells time in a.m. and p.m. in real life situations with assistance.	Learner attempts telling tim in a.m. or p.m. in real life situations with guidance.
Estimate time using a.m. and p.m. in real life situations.	Learner estimates time in real life situations accurately and with ease.	Learner estimates time using a.m. and p.m. in real life situations.	Learner estimates time in a.m. and p.m. in real life situations with assistance.	Learner attempts estimating time in a.m. or p.m. in real life situations with a lot of assistance.
Convert units of time in real life situations.	Learner converts units of time in real life situations with ease.	Learner converts units of time in real life situations.	Learner converts units of time in real life situations with prompts.	Learner attempts converting hours to minutes in real life situations with a lot of guidance.

Record time durations in hours and minutes.	Learner measures and records time durations in hours and minutes fast and accurately.	Learner measures and records time durations in hours and minutes.	Learner measures and records time in hours and minutes with guidance.	Learner measures time in hours with a lot of prompts.
Work out addition involving units of time.	Learner adds units of time accurately and with ease.	Learner adds units of time.	Learner adds units of time with guidance.	Learner adds time in hours with a lot of assistance.
Work out subtraction involving units of time.	Learner subtracts units of time with ease.	Learner subtracts units of time.	Learner attempts subtracting units of time.	Learner subtracts time in hours with prompts.
Uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with guidance.	Learner attempts using ICT devices for enjoyment with some assistance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	2.7 MONEY (8 Lessons)	By the end of the sub strand, the learner should be able to: a) convert shillings into cents and cents into shillings in different contexts, b) participate in shopping activities involving money practically, c) determine needs and wants in real life situations, d) practice savings in real life, e) work out questions involving money in real life situations, f) identify money people pay to the county government for provision of services, g) use ICT devices for learning and enjoyment, h) appreciate the use of money in real life.	• Learners in purposive pairs or groups or individually to convert shillings into cents and cents into shillings using real or imitation money. Learners with manipulation difficulties could use any alternative functional part of the body or appropriate assistive technology such as universal cuffs to handle money or record their finding; or be assisted by peers or teacher aide or teacher in this practical activity under their instructions. The imitation notes should be made of Manila paper or cement bags that cannot tear easily. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to give their views in this activity. *(These adaptations apply in all the subsequent activities which involve use of currency notes and coins or imitation notes, writing, mounting, stamping, use of digital devices and speech under this sub strand).* • Learners in purposive pairs or groups to role play shopping activities involving giving change and balance using real or imitation money. Learners with mobility difficulties could use Assistive Technology such as wheelchairs or calipers or orthotic boots or scooter boards to move. Those with short stature and those on positioning devices should be preferentially and appropriately positioned to take part during role play. Learners with muscular dystrophy or brittle	1. How can you save money?

			bones or anaemia or cardiac conditions could be given less vigorous roles according to their individual functional level of ability. *(These adaptations apply in all the subsequent activities which involve role play, demonstration, handling money, movement and speech under this sub strand). However, other adaptations have also been made on specific activities besides the above.* • Learners in purposive pairs or groups to discuss and prioritize needs and wants. • Learners in purposive pairs or groups to discuss savings at home. • Learners in purposive pairs or groups to discuss how to work out questions involving money. • Learners in purposive pairs or groups to discuss market fee, cess, parking fee, business permit as money people pay to county government for provision of services. • Learners in purposive pairs or groups or individually to play digital games involving money. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision.	

Core Competencies to be developed:

- Communication and collaboration: as learners do shopping activities, giving change and balance.
- Self-efficacy: as learners discuss and report on needs and wants.
- Creativity and critical thinking: as learners learn how to spend money using a simple budget.

Pertinent and Contemporary Issues:	**Values:**
• **Social Economic Issues:** Financial Literacy: as learners use money in coins and notes; as learners shop and discuss needs, wants and savings.	• Honesty: as learners spend or withdraw money as directed by parents. • Responsibility: as learners handle money given by parents.
Link to other Learning Areas	**Community Service Learning Activities**

• Home Science as learners purchase ingredients. • Languages as learners discuss in groups.	• Learners to assist family members in shopping activities that involv giving change and balance at home. • Learners work with parents to make home money banks.
Suggested Non-Formal activities to support learning: • Learners to practice shopping activities during play.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes

Suggested Resources:
Real money (currency notes and coins), imitation money, price list, number cards , multipurpose stamps, communication board, universal cuff head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Perso

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Convert shillings to cents in different contexts.	Learner converts shillings to cents in different contexts accurately and with ease.	Learner converts shillings to cents in different contexts.	Learner converts shillings to cents in different contexts with prompts.	Learner converts a shilling into 2 fifty cents in different contexts with guidance.
Convert cents to shillings in different contexts.	Learner converts cents to shillings in different contexts neatly and with ease.	Learner converts cents to shillings in different contexts.	Learner converts cents to shillings in different contexts with prompts.	Learner converts 2 fifty cents into a shilling in different contexts with a lot of guidance.
Participate in shopping activities involving money practically.	Learner role plays shopping activities involving money practically and with ease.	Learner role plays shopping activities involving money practically.	Learner role plays shopping activities involving money practically with assistance.	Learner role plays picking up purchased items during shopping activities with assistance.
Determine Needs and Wants in real life situations.	Learner prioritizes needs and wants in real life situations wisely and with ease.	Learner prioritizes needs and wants in real life situations.	Learner prioritizes needs and wants in real life situations with guidance.	Learner prioritizes wants in real life situations with guidance.

Practice savings in real life.	Learner practices saving in real life consistently.	Learner practices saving in real life.	Learner practices saving in real life with prompts.	Learner attempts practicing saving in real life with continuous assistance.
Work out questions involving money in real life situations.	Learner works out questions involving money in real life situations with ease.	Learner works out questions involving money in real life situations.	Learner works out questions involving money in real life situations with guidance.	Learner attempts working out questions involving money in real life situations with assistance.
Identify money people pay to county government for provision of services	Learner identifies money people pay to county government for provision of services with ease.	Learner identifies money people pay to county government for provision of services.	Learner identifies money people pay to county government for provision of services with prompts.	Learner attempts identifying money people pay to county government for provision of services with a lot of guidance.
Use ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and efficiently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with assistance.	Learner uses ICT devices for enjoyment with assistance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
3.0 GEOMETRY	**3.1 POSITION AND DIRECTION (4 Lessons)**	By the end of the sub strand, the learner should be able to: a) demonstrate a clockwise and an anti-clockwise turn in the environment, b) demonstrate a quarter turn, half turn and full turn in the environment, c) identify quarter, half and full turns in the environment, d) use ICT devices for learning and enjoyment, appreciate use of position and direction in real life situations	• Learners in purposive groups or pairs or individually to demonstrate a clockwise turn. Learners with mobility difficulties could turn using any alternative functional part of the body or appropriate assistive technology such as wheelchairs or be assisted by peers or teacher aide or teacher. Learners on positioning devices could show the direction of the turn by pointing or turning the head or torso or describing as a physical assistant (peer or teacher aide or teacher) carries out the activity. Learners with muscular dystrophy and those with brittle bones should be given lighter tasks according to individual level of ability. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to give their views in this activity. *(These adaptations apply in all the subsequent activities which involve movement, telling or demonstrating direction of various turns under this sub strand).* • Learners in groups or pairs or individually to demonstrate an anti-clockwise turn. • Learners in groups or pairs or individually to demonstrate a quarter turn in both directions. • Learners in groups or pairs or individually to demonstrate a half turn. • Learners in groups or pairs or individually to demonstrate a full turn. • Learners in groups or pairs or individually to play digital games involving position and direction.	How can you change your position?

			Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision.	

Core Competencies to be developed:

- Communication and Collaboration: as learners discuss in groups.
- Imagination and creativity: as learners make turns in given positions.
- Learning to learn: as learners make turns from previously observed parades.
- Digital literacy: as learners play digital games.

Pertinent and Contemporary Issues:

- **Social Economic Issues:**
  Safety and security: as learners observe vehicles while crossing roads;
  Environmental issues: as learners practice the turns in telling direction of physical features in the environment.

Values:

- Unity: as learners perform the turns in groups.
- Responsibility: as learners observe safety when crossing the road.

Link to other Learning Areas:

- Science and Technology: as learners study directions.
- Social Studies: as learners study position in maps.
- Music: as learners match, making different formations following given beats of a song.

Suggested Community Service Learning Activities:

- Learners to guide participants on how to make different turns during moves and parades in National days community celebrations.

Suggested Non-Formal Activities to support Learning:

- Learners to make different turns during singing games.

Suggested modes of Assessment:

- Oral questions, observation, written exercises, quizzes

Suggested Resources:
Analogue clock face, digital clock face, different objects in the environment, number cards , multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Demonstrate a clockwise and anti-clockwise turn in the environment.	Learner demonstrates a clockwise and anti-clockwise turn in the environment accurately and with ease.	Learner demonstrates a clockwise and anti-clockwise turn in the environment.	Learner demonstrates a clockwise and anti-clockwise turn in the environment with prompts.	Learner demonstrates a clockwise turn in the environment with guidance.
Demonstrate quarter, half and full turn in the environment.	Learner demonstrates quarter, half and full turns in the environment accurately and with ease.	Learner demonstrates quarter, half and full turns in the environment.	Learner demonstrates quarter and half turns in the environment with guidance.	Learner demonstrates quarter turns in the environment with prompts.
Identify quarter, half and full turn in the environment.	Learner identifies quarter, half and full turns in the environment with ease.	Learner identifies quarter, half and full turns in the environment.	Learner identifies quarter and half turns in the environment with guidance.	Learner identifies quarter turn in the environment with assistance.
Uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with guidance.	Learner uses ICT devices for enjoyment with guidance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
	3.2 ANGLES (4 Lessons)	By the end of the sub strand, the learner should be able to: a) identify angles in the environment, b) identify different types of angles in the environment, c) compare angles practically, d) use ICT devices for learning and enjoyment, e) appreciate use of angles in real life situations.	• Learners in purposive pairs or groups or individually to identify angles. Learners could identify orally or by signing or pointing or writing or typing. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to give their estimates *(Apply this adaptation in all the subsequent activities involving identification of angles and speech under this sub strand)*. • Learners purposive in pairs or groups to identify right angles. • Learners in purposive pairs or groups to identify acute angles. • Learners in purposive pairs or groups to identify obtuse angles. • Learners in purposive pairs or groups to identify reflex angles. • Learners in purposive pairs or groups to compare angles using a right angle. Learners with	Where can you find angles in the environment?

			manipulation difficulties could use any alternative functional part of the body or assistive technology such as head or mouth pointers or universal cuffs or prosthesis to compare angles. They could also use adapted digital devices such as computers with appropriate software such as Microsoft word and expanded keyboards, key guards, sticky keys and or head operated optical mouse or be physically assisted by peers or teacher aide or teacher to insert and compare angles under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(Apply these adaptations in all the subsequent activities that involve writing, drawing, mounting and use of adapted digital devices under this sub strand).* • Learners in purposive pairs or groups or individually to play digital games and learn more about angles.	
Core competencies to be developed: • Communication and collaboration: as learners compare angles. • Learning to learn: as learners identify angles. • Digital literacy: as learners play digital games.				

<table>
<tr><td>Pertinent and Contemporary Issues:
• Social Economic Issues:
Environmental education: as learners plant flowers and trees at school to demonstrate angles and shapes.
• Life Skills Issues:
The skill of knowing and living with others: as learners work in groups.</td><td>Values:
• Responsibility: as learners make accurate measurements.
• Respect: as learners take turns in group activities.</td></tr>
<tr><td>Link to other Learning Areas:
• Creative Art as learners draw angles.
• Agriculture as learners plant seeds at angles and in parallel rows.</td><td>Suggested Community Service Learning Activities:
• Learners to assist in making of furniture and house construction in the community.</td></tr>
<tr><td>Suggested Non-Formal activities to Support Learning:
• Learners to make toys of cars or dolls during play.</td><td>Suggested modes of Assessment:
• Oral questions, observation, written exercises, quizzes</td></tr>
<tr><td colspan="2">Suggested Resources:
Representation of different angles, different objects in the environment, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips</td></tr>
<tr><td colspan="2">Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person</td></tr>
</table>

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Identify Angles in the environment.	Learner identifies angles in the environment accurately and with ease.	Learner identifies angles in the environment.	Learner identifies angles in the environment with prompts.	Learner attempts to identify an angle in the environment with a lot of guidance.
Identify Right angles in the environment.	Learner identifies right angles in the environment accurately and with ease.	Learner identifies right angles in the environment.	Learner identifies right angles in the environment with some assistance.	Learner attempts to identify right angles in the environment with a lot of assistance.
Identify Acute angles in the environment.	Learner identifies acute angles in the environment correctly and with ease.	Learner identifies acute angles in the environment.	Learner identifies acute angles in the environment with prompts.	Learner attempts to identify acute angles in the environment with a lot of prompts.
Identify Obtuse angles in the environment.	Learner identifies obtuse angles in the environment correctly and with ease.	Learner identifies obtuse angles in the environment.	Learner identifies obtuse angles in the environment with cues.	Learner attempts to identify obtuse angles in the environment with a lot of assistance.
Identify Reflex angles in the environment.	Learner identifies reflex angles in the environment correctly and with ease.	Learner identifies reflex angles in the environment.	Learner identifies reflex angles in the environment with some assistance.	Learner attempts to identify reflex angles in the environment with a lot of guidance.
Compare angles practically.	Learner compares angles practically with ease.	Learner compares angles practically.	Learner compares angles practically with prompts.	Learner compares acute and right angles practically with a lot of guidance.
Uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with support.	Learner uses ICT devices for enjoyment with assistance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
	3.3 2-D SHAPES (6 Lessons)	By the end of the sub strand, the learner should be able to: a) identify different shapes in the environment, b) identify line of symmetry practically, c) make patterns using different shapes, d) identify properties of 2-D shapes practically, e) use ICT devices for learning and enjoyment, f) appreciate using shapes in real life situations.	• Learners in purposive pairs or groups or individually to identify shapes in the environment. Learners could identify orally or by signing or pointing or writing or typing. *(Apply this adaptation in all the subsequent activities involving identification of angles and speech under this sub strand).* • Learners in purposive pairs or groups to identify line of symmetry by folding the shape into two equal parts and identifying the fold line as line of symmetry. Learners with manipulation difficulties could use any alternative functional part of the body or assistive technology such as head or mouth pointers or universal cuffs or prosthesis to fold paper, cut out shapes and identify the line of symmetry. They could also use adapted digital devices such as computers with appropriate software such as *Microsoft word* and expanded keyboards, key guards, sticky keys and or head operated optical mouse or be physically assisted by peers or teacher aide or teacher to insert and divide auto shapes into two and identify lines of symmetry under their instructions. Adjust glare on the screens of the adapted ICT devices appropriately for learners with epilepsy and those who may be experiencing difficulties in vision. *(Apply these adaptations in all the subsequent activities that involve writing, drawing, identifying properties of angles and use of adapted digital devices under this sub strand).* • Learners in purposive pairs or groups or individually to make patterns using squares, rectangles and triangles. • Learners in purposive pairs or groups to identify properties of a square.	1. How can you identify a 2-D shape? 2. How can you make patterns using shapes?

			• Learners in purposive pairs or groups to identify properties of rectangles. • Learners in purposive pairs or groups to identify properties of a triangle. • Learners in purposive pairs or groups to use IT devices to learn more about 2-D shapes and make patterns. Light intensity should be controlled for learners with epilepsy and those with visual difficulties.	

Core competencies to be developed:

- Communication and collaboration: as learners identify different shapes.
- Learning to learn: as learners identify properties of different shapes.
- Digital literacy: as learners play digital games.

Pertinent and Contemporary Issues: • **Social Economic Issues:** Financial literacy: as learners make patterns for commercial use. • **Life skills Issues:** The skill of knowing and living with others: as learners make shapes of Kenya, national flag by arranging themselves in rows and columns.	**Values:** • Responsibility as learners report on properties of 2-D shapes.
Link to other Learning Areas: • Creative activities: as learners identify objects of different shapes in the environment for making structures such as animal cages. • Languages: as learners participate in group discussions.	**Suggested community service Learning activities:** • Learners may identify 2-D shapes form art work on the walls of community library or their home.
Suggested Non-Formal Activities to support Learning: • Learners to make different shapes for use during play.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes

Suggested Resources:
2-D paper cut outs of rectangles, circles and triangles of different sizes; number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Identify different shapes in the environment.	Learner identifies different shapes in the environment with ease.	Learner identifies different shapes in the environment.	Learner identifies different shapes in the environment with prompts.	Learner is able to identify two shapes in the environment with a lot of assistance.
Identify lines of symmetry practically.	Learner identifies lines of symmetry practically and with ease.	Learner identifies lines of symmetry practically.	Learner identifies lines of symmetry practically with guidance.	Learner identifies identifying lines of symmetry practically with a lot of guidance.
Make patterns using different shapes.	Learner creatively makes patterns using different shapes.	Learner makes patterns using different shapes.	Learner makes patterns using different shapes with guidance.	Learner attempts making a pattern using any shape.
Identify properties of squares.	Learner identifies properties of squares with ease.	Learner identifies properties of squares.	Learner identifies properties of squares with prompts.	Learner identifies any one of the properties of squares with much guidance.
Identify properties of rectangles.	Learner identifies properties of rectangles with ease.	Learner identifies properties of rectangles.	Learner identifies properties of rectangles with guidance.	Learner identifies any one of the properties of rectangles with much guidance.

Identify properties of triangle.	Learner identifies properties of triangles with ease.	Learner identifies properties of triangles.	Learner identifies properties of triangles with assistance.	Learner identifies any one of the properties of triangles with much guidance.
Uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with prompts.	Learner uses ICT devices for enjoyment with some assistance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
4.0 DATA HANDLING	**4.1 DATA (8 Lessons)**	By the end of the sub strand, the learner should be able to: a) represent data involving real life situations using frequency tables, b) work out questions involving frequency tables representing real life situations, c) identify where frequency tables are used in real life, d) use ICT devices for learning and enjoyment, e) appreciate use of frequency tables in representing data in real life situations.	Learners in purposive groups to collect and record data involving real life situations using tally marks. Learners with mobility difficulties could use Assistive Technology such as wheelchairs or scooter boards or crutches or orthotic boots to move as they collect data with assistance from peers or teacher aide or teacher as need may arise. Those with manipulation difficulties could use any alternative functional part of the body or assistive technology such as head or mouth pointers or adapted pens or pencils or multipurpose stamp, to write or stamp or use adapted digital devices such as smart phones, tablets or digital cameras or computers with expanded keyboards, key guards, sticky keys and or head operated optical mouse or be physically assisted by peers or teacher aide or teacher to collect and record data under their instructions. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or type or stamp or write or point on a multipurpose communication board to express own views as well as collect data. Glare on the screens of the adapted ICT devices should be appropriately adjusted for learners with epilepsy and those who may be experiencing visual difficulties.	How can you represent data?

			(Apply these adaptations in all the subsequent activities that involve writing, drawing, recording data, representing data and the use of adapted ICT devices under this sub strand). • Learners in purposive pairs or groups or individually to represent data collected from real life situations using frequency tables. • Learners in purposive pairs groups or individually to interpret frequency tables representing real life situations. • Learners in purposive pairs or groups or individually to work out questions involving frequency tables representing real life situations. • Learners in purposive pairs or groups to discuss where frequency tables are used. • Learners in pairs or groups or individually to use ICT devices and learn more on data collection.	

Core competencies to be developed:

- Communication and collaboration: as learners collect data.
- Learning to learn: as learners identify how to represent data.
- Digital literacy: as learners play digital games.

Pertinent and Contemporary Issues: • **Health Related Issues:** HIV and AIDS: as learners collect data on the number of patients on Anti-Retroviral Therapy from a nearby Health Facility. • **Social Economic Issues:** Environmental Issues: as learners collect data on number of trees in the school compound.	**Values:** • Love as learners help each other to collect data in groups. • Responsibility: as learners collect data using various Assistive Technology.
Link to other Learning Areas: • Languages: as learners discuss in groups. • Agriculture, Science and Technology: as learners collect data on the number of trees in school using adapted ICT devices.	**Suggested community service Learning activities:** • Learners may assist in collecting data on attendance or number of items in community functions.

Suggested Non-Formal Activities to support Learning:	Suggested modes of Assessment:
• Learners to represent different number of items using sticks as tallies practically. •	• Oral questions, observation, written exercises, quizzes,

Suggested Resources:
Data from different sources such health facility and school compound, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software such as smart phones, cameras or tablets, adapted pens or pencils, pen or pencil holders or grips.

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Represent data involving real life situations using frequency tables.	Learner represents data involving real life situations using frequency tables accurately and with ease.	Learner represents data involving real life situations using frequency tables.	Learner represents data involving real life situations using frequency tables with assistance.	Learner attempts to represent data involving real life situations using frequency tables with much guidance.
Work out questions involving frequency tables representing real life situations	Learner neatly works out questions involving frequency tables	Learner works out questions involving frequen	Learner works out questions involving frequency tables representing real life	Learner attempts working out questions involving frequency tables representing real

	representing real life situations.	representing real life situations.	situations with guidance.	life situations with a lot of guidance.
Identify where frequency tables are used in real life.	Learner confidently identifies where frequency tables are used in real life.	Learner identifies where frequency tables are used in real life.	Learner identifies where frequency tables are used in real life with assistance.	Learner attempts identifying where frequency tables are used in real life with a lot of assistance.
Uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and confidently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with prompts.	Learner uses ICT devices for enjoyment with guidance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
5.0 ALGEBRA	**5.1 USE OF LETTERS (6 Lessons)**	By the end of the sub strand, the learner should be able to: a) represent the unknown in real life situations using letters, b) form algebraic expressions to represent real life situations, c) simplify algebraic expressions representing real life situations, d) use ICT devices for learning and enjoyment, e) appreciate the use of algebraic expressions.	• Learners in purposive pairs or groups or individually to represent the unknown in real life situations using letters. Learners with manipulation difficulties could use any alternative functional part of the body or assistive technology such as head or mouth pointers or adapted pens or pencils or multipurpose stamp, to write or stamp or mount or arrange letter and operation sign cards to represent the unknown; or use adapted digital devices such as computers with expanded keyboards, key guards, sticky keys, head operated optical mouse and appropriate software such as *Microsoft word* or be physically assisted by peers or teacher aide or teacher to represent the unknown using letters under their instructions. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or write or type or stamp or point on a multipurpose communication board to express own views in group activities. Glare on the screens of the adapted ICT devices should be appropriately adjusted for learners with epilepsy and those who may be experiencing visual difficulties. *(Apply these adaptations in all the subsequent activities that involve writing, drawing, forming and simplifying algebraic expressions and the use of adapted ICT devices under this sub strand).* • Learners in purposive pairs or groups or individually to form algebraic expressions to represent real life situations.	How can you simplify algebraic expressions?

			• Learners in purposive pairs or groups or individuals to simplify algebraic expressions representing real life situations. • Learners in purposive pairs or groups or individually to play digital games involving algebraic expressions	

Core competencies to be developed:

- Learning to learn: as learners represent the unknown using letters.
- Communication and collaboration: as learners form algebraic expressions.
- Digital literacy: as learners play digital games.

Pertinent and Contemporary Issues: • **Life skills Issues:** The skills of knowing and living with self: as learners represent the unknown using letters in real life situations. The skills of knowing and living with others: as learners work in pairs or groups. • **Social Economic Issues:** Environmental Issues: as learners group objects or litter from the environment using letters.	**Values:** • Responsibility: as learners represent the unknown using letters. • Love: as learners work and help each other in group activities.
Link to other Learning Areas: • Languages: as learners represent the unknown using letters.	**Suggested Community Service Learning Activities:** • Learners may assist in sorting litter in the community.
Suggested Non-Formal Activities to support Learning: • Learners to represent items using letters during play.	**Suggested modes of Assessment:** • Oral questions, observation, written exercises, quizzes

Suggested Resources:
Information from different sources, alphabetic letter cards, operation sign cards, adhesives such as cello tapes and or glue, masking tape, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

Other related Other related service providers: Physiotherapist, Occupational Therapist, Speech Therapist, Teacher Aide, Resource Person

Assessment Rubrics

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Represent unknown in real life situations using letters.	Learner represents unknown in real life situations using letters neatly and with ease.	Learner represents unknown in real life situations using letters.	Learner represents unknown in real life situations using letters with guidance.	Learner attempts representing unknown in real life situations using letters with a lot of guidance.
Form algebraic expressions to represent real life situations.	Learner forms algebraic expressions to represent real life situations neatly and with ease.	Learner forms algebraic expressions to represent real life situations.	Learner forms algebraic expressions to represent real life situations with prompts.	Learner attempts forming algebraic expression to represent real life situations with a lot of assistance.
Simplify algebraic expressions representing real life situations.	Learner simplifies algebraic expressions representing real life situations neatly and with ease.	Learner simplifies algebraic expressions representing real life situations.	Learner simplifies algebraic expressions representing real life situations with little assistance.	Learner attempts simplifying algebraic expressions representing real life situations with a lot of prompts.
Uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment fast and efficiently.	Learner uses ICT devices for learning and enjoyment.	Learner uses ICT devices for learning and enjoyment with guidance.	Learner uses ICT devices for enjoyment.

SUGGESTED ASSESSMENTS

Assessment may be through oral, aural, written or observation following the assessment rubrics.

SUGGESTED RESOURCES

STRAND	SUB STRAND	SUGGESTED RESOURCES
NUMBERS	Whole numbers	Place value apparatus, number charts, number cards, multiplication table, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Addition	Place value chart, adapted abacus, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Subtraction	Place value chart, adapted abacus, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Multiplication	Multiplication table, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Division	Multiplication table, place value apparatus, number charts, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Fractions	Equivalent fraction board, Circular and rectangular cut outs, counters, clock face, number cards, , adapted counters, clock face, adhesives such as cello tape, adapted coloured pencils or crayons, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Decimals	100 square grid, rectangular paper strips, place value chart on decimals, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital

		devices with appropriate software, adapted pens or pencils adhesives such as cello tape, pen or pencil holders or grips
MEASUREMENT	Length	Adapted Metre rule, 1 metre sticks, tape measure, metre strings with loops, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Area	Square and rectangular cut-outs, adapted Metre rule, 1 metre sticks, tape measure, metre strings with loops, number cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Mass	1 kg mass, soil or sand, manual or electronic weighing machine, beam balance, number cards, multipurpose stamps, multipurpose communication board, universal cuffs with sticks, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Volume	Cubes, cuboids, number cards, multipurpose stamps, multipurpose communication board, universal cuffs with sticks, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Capacity	1 litre containers, lighter containers of different sizes, containers with handles, sandy soil, water, number cards, operation sign cards, multipurpose stamps, multipurpose communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Time	Analogue and digital clocks, digital watches, a.m. and p.m. charts, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Money	Real money (currency notes and coins), imitation money, price list, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
GEOMETRY	Position and direction	Analogue clock face, digital clock face, different objects in the environment, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
	Angles	Representation of different angles, different objects in the environment, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

	2-D shapes	2-D paper cut outs of rectangles, circles and triangles of different sizes; number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips
DATA HANDLING	Data	Data from different sources such health facility and school compound, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software such as smart phones, cameras or tablets, adapted pens or pencils, pen or pencil holders or grips
ALGEBRA	Use of letters	Information from different sources, alphabetic letter cards, operation sign cards, adhesives such as cello tapes and or glue, masking tape, number cards, multipurpose stamps, communication board, universal cuffs, head or mouth pointers, adapted digital devices with appropriate software, adapted pens or pencils, pen or pencil holders or grips

NOTE

Human resources as teacher aide, therapists are very necessary for learners with physical impairment.

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, Adapted computers,

SUGGESTED NON-FORMAL ACTIVITIES

STRAND	SUB STRAND	SUGGESTED NON-FORMAL ACTIVITIES
Numbers	Whole Numbers	Learners to play number games and count items in the environment.
	Addition	Learners to work out total scores in a game.
	Subtraction	Learners to work out the difference in scores for various teams during play.
	Multiplication	Learners to work out the number of flowers in a flower bed by considering the number of rows and columns.
	Division	Learners to distribute themselves into teams during play activities e.g. football.
	Fractions	Learners to share items during play.
	Decimals	Learners to represent decimals using paper cut outs during play.
Measurement	Length	Learners to mark play areas.
	Area	Learners to mark their areas of operation in different games e.g. netball.
	Mass	Learners to play games using a sea saw.

STRAND	SUB STRAND	SUGGESTED NON-FORMAL ACTIVITIES
	Volume	Learners to pile up same items during play.
	Capacity	Learners to fill and empty containers during play.
	Time	Learners to observe shadows and relate them to different times of the day.
	Money	Learners to practice shopping activities during play.
Geometry	Position and Direction	Learners to make different turns during singing games.
	Angles	Learners to make toys of cars or dolls during play.
	2-D Shapes	Learners to make different shapes for use during play.
Data Handling	Data	Learners to represent different number of items using sticks as tallies practically.
Algebra	Use of letters	Learners to represent items using letters during play.

SCIENCE AND TECHNOLOGY

ESSENCE STATEMENT

Science and Technology is a learning area which engages in the human pursuit to understand the relationships between the living and non-living universe. Science is a discipline that deals with explanations and predictions about nature and the universe while Technology is the application of science to create devices that can solve problems and do tasks.

The achievement of Vision 2030 greatly depends on Science, Technology and Innovation. Sessional Paper No.1 of 2005 highlights the fact that for a breakthrough towards industrialisation, achievement of the desired economic growth targets and social development, a high priority needs to be placed on the development of human capital through education and training by promoting the teaching of sciences and information technology. This is also highlighted in the Sessional Paper 14, 2012 which stresses the need for sustainable basic and higher education, with an emphasis on Science, Technology and Innovation (ST&I). This makes it necessary for Science and Technology to be taught in Upper Primary Education level.

This learning area builds on the competencies introduced at the lower primary under the learning area of Environmental Activities and equips the learner with pre-requisite skills which are required in Integrated Science and Pre-technical and Pre-career studies at the lower secondary level. These enable learners prepare for Science, Technology, Engineering and Mathematics (STEM) in subsequent levels of education cycle. Inquiry based learning (IBL), Project based learning (PBL), Problem based learning (PBL) and Social Scientific Issue learning (SSI) approaches will be employed throughout the learning experiences in this area as advocated for by John Dewey's social constructivist theory which emphasizes the learner should be given an opportunity to learn through hands-on activities. Engineering design shall be used as a pedagogical strategy to bridge science concepts with other learning areas to solve simple open-ended problems, develop creative thinking and analytical skills among learners, make decisions, and consider alternative solutions to address a variety of situations.

LEARNING OUTCOMES

By the end of upper primary the learner should be able to:

- Interact with the environment for learning and sustainable development.
- Apply digital literacy skills appropriately for communication, learning and enjoyment.
- Appreciate the contribution of science and technology in the provision of innovative solutions.
- Use scientific knowledge to observe, explain the natural world,
- Make functional discoveries that impact individuals and the wider society.
- Use innovative approaches as well as critical thinking and problem solving skills to stimulate scientific inquiry, at the local, national and global levels for lifelong learning.
- Appreciate the contribution of science and technology in the provision of innovative solutions.

Strands

1. Living things
2. Environment
3. Digital Technology
4. Matter
5. Force and Energy
6. Earth and Space.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
1.0: LIVING THINGS	1.1: Plants 1.1.1: Characteristics of plants. (5 lessons)	By the end of the sub strand the learner should be able to; a) identify living and non-living things in the environment; b) identify the characteristics of plants as living things; c) observe characteristics of plants in environment; d) demonstrate responsibility while handling plants; e) grow some plants found in the locality.	• Learners could move in the school compound and the neighbourhood to observe, discuss and record evidence that plants; feed, grow, breathe, reproduce, remove waste, move, respond to changes in their environment and die. Learners with mobility difficulties could use appropriate assistive technology-mobility devices such as wheelchairs; with or without assistance from peers or teacher aide or teacher. Those with speech difficulties could be lip read as they use residual speech, or sign or point or write or type their views; while those with missing limbs, amputees and others with manipulation difficulties could use alternative functional parts of their body or appropriate assistive technology such as computers with expanded keyboards and appropriate software that enhance manipulation by use of head/ mouth pointers, toes or audio command or be assisted by peers or teacher aide or teacher to record their observation. Safety precaution measures should be taken for learners with asthma against strong scented plants as well as those with brittle bones against rugged terrains as they move. (Apply these adaptations in all the subsequent activities that involve movement, use of speech, manipulation,	1. What makes plants living things? 2. What are the main features of plant?

			recording and exposure to strong scents under this strand). • Learners use digital devices to observe, discuss and record evidence that plants; feed, grow, breathe, reproduce, remove waste materials, move, respond to changes in their environment and die. Learners with manipulation difficulties, including those with missing limbs and amputees could use alternative functional parts of their body or appropriate assistive technology such as head/ mouth pointers, prosthesis, among others to operate the digital devices with assistance where necessary from peers or teacher aide or teacher. For learners with epilepsy and those with visual difficulties, reduce light intensity (glare) on the digital devices. (Apply this adaptation in all the activities where the use of digital devices or water is involved under this strand). • In purposive groups, learners are guided to observe safety precautions when handling plants (Examples: practise use of gloves, forceps, goggles, tongs, and overcoats). **Project:** With the help of parents, learners plant seeds, observe as they grow and record the changes taking place as the plants grow to maturity. Learners with manipulative difficulties such as those with cerebral palsy or amputees could use any other functional parts of their body or assistive technology such as head/ mouth pointers, or adapted	

			digital devices to record their observation or be assisted by peers or teacher aide or teacher. Safety precaution could be observed for learners with brittle bones against fractures as they use forceps and tongs. (The adaptations made in this sub strand also apply in all the subsequent activities where movement, manipulation, such as writing, use of digital devices and water is involved under this strand. However, besides these adaptations, other adaptations have also been made on specific activities).	

Core competencies to be developed:

- Critical thinking: as they identify plants.
- Communication and Collaboration: as they work in purposive groups and share information.
- Digital literacy: as they use digital devices to take pictures and observe the characteristics of plants.

Links to pertinent and contemporary issues: • Environmental sustainability when taking care of plants as they handle and observe parts of plants. • Disaster risk reduction while handling different types of plants (poisonous and non-poisonous).	**Links to Values:** • Responsibility by taking care of plants. • Respect as they respond to one another's views. • Love as they support each other in groups.
Links to other Learning areas: • Agriculture as they observe plants as crops. • Social studies as they care for the plants.	**Suggested Community Service Learning Activities:** • Identifying plants in his/her environment. • Taking care of plants in the community.
Suggested non-formal activities to support learning: • Learners plant trees or care for plants in the school environment during club time.	**Suggested modes of assessment:** Oral questions, observation, project work, taking photos, audio-visual recording, checklist

Suggested learning resources:

Gloves, forceps, goggles, tongs, overcoats; writing materials such as adapted pens/ pencils, head/ mouth pointers; adapted digital devices such as cameras, computers/ tablets, smart [illegible]oks; ambulatory devices such as wheelchairs, callipers, wall [illegible] boards;

Other related service providers: Physiotherapists, Occupational Therapists, Teacher Aides, Resource Persons

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify the characteristics of plants as living things.	Identifies the characteristic of plants as living things and also assists others.	Identifies the characteristic of plants as living things.	Identifies the characteristic of plants as living things with assistance.	Has difficulties identifying the characteristic of plants as living things.
Demonstrate responsibility while handling plants.	Demonstrates responsibility while handling plants and also guides peers.	Demonstrates responsibility while handling plants	Attempts demonstrating responsibility while handling plants.	Has difficulty demonstrating responsibility while handling plants.
Grow some plants found in the locality.	Grows some plants found in the locality Consistently	Grows some plants found in the locality.	Sometimes grows some plants found in the locality	Has difficulties growing some plants found in the locality.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	1.2 Animals 1.2.1 Characteristics of animals	By the end of the sub strand the learner should be able to; a) identify the characteristics of animals as living things; b) observe characteristics of animals in the environment; c) distinguish between the vertebrates and invertebrates; d) demonstrate responsibility while handling animals;	• Learners move in the school compound and the neighbourhood to observe and record evidence that animals; move, feed, grow, reproduce, remove waste, and respond to changes in their environment and die. Apply adaptation made in 1.1 bullet one on mobility and manipulation here. • Learners use digital devices to observe, discuss and record evidence that animals: feed, grow, breathe, reproduce, remove waste materials, move, respond to changes in their environment and die. Apply adaptation made in 1.1 bullet two on digital devices here. • In purposive groups, learners discuss the main difference between vertebrates and invertebrates. Learners with speech difficulties could be lip read as they use residual speech, or sign or point or write or type or use multipurpose communication board to express own views. • In purposive groups, learners are guided to observe safety	1. What makes animals living things? 2. Which ways do animals differ from each other?

	(8 lessons)		precautions when handling animals (Examples: practise use of gloves, forceps, goggles, tongs, and overcoats). **Project:** With the help of parents, learners make a portfolio of vertebrate and invertebrates animals	

Core competencies to be developed:

- Critical thinking while identifying characteristics of animals.
- Communication and Collaboration as they work in purposive groups.
- Digital literacy as they use digital devices to observe animals.

Links to pertinent and contemporary issues: • Environmental sustainability by taking care of animals. • Disaster risk reduction by avoiding dangerous animals.	**Links to Values:** • Demonstrate responsibility by caring for animals in the environment. • Respect as they respond to one another's views.
Links to other learning areas: • Agriculture: as they take care of animals. • Mathematics: as they group animals based on their characteristics. • Home Science: as they use safety gears while interacting with animals.	**Suggested Community Service Learning Activities:** • Identifying animals in the environment. • Caring for animals in their community.
Suggested non-formal activities to support learning: • Learners feed animals in the school compound during their free time and during the 4k club. • Learners draw different types of animals during their free time.	**Suggested Modes of Assessment:** Oral questions, written exercise, observation, teacher made assessment, checklist, peer assessment among others.

Suggested Learning Resources:
Assistive technology (adapted pens/ pencils, pen/ pencil grips, book holders and page turners, head/ mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices); pictures, video clips, audios and charts on animals, their characteristics and products; Multipurpose communication board; ambulatory devices such as wheelchairs, callipers, walkerss, crutches, scooter boards; gloves, forceps, goggles, tongs, overcoats

Other related service providers: such as Physiotherapists, Occupational therapists, teacher aides, resource persons

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify the characteristics of animals in the environment as living things.	Accurately identifies the characteristics of animals in the environment as living things.	Identifies the characteristics of animals in the environment as living things.	Identifies a few characteristics of animals in the environment as living things.	Identifies a few characteristics of animals in the environment as living things with a lot of assistance.
Observe the characteristics of animals in the environment.	Observes the characteristics of animals in the environment with ease.	Observes the characteristics of animals in the environment.	Observes some characteristics of animals in the environment.	Makes little effort in observing characteristics of animals in the environment.
Distinguish between vertebrates and invertebrates	Accurately distinguishes between vertebrates and invertebrates and assist others.	Distinguishes between vertebrates and invertebrates.	Distinguishes between vertebrates and invertebrates with assistance.	Distinguishes only vertebrates when assisted.
Demonstrate responsibilities while handling animals.	Perfectly demonstrates responsibilities while handling animals	Demonstrates responsibilities while handling animals	Demonstrates responsibilities while handling animals with prompts.	Has difficulties in demonstrating responsibilities while handling animals.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	1.3 : Human body 1.3.1: Digestive system (12) lessons	By the end of the sub strand the learner should be able to: a) identify parts of the digestive system; b) describe functions of the different parts of the digestive system; c) develop curiosity in taking care of teeth; d) model the four different types of teeth.	• In purposive groups, learners are guided to use adapted digital devices and visual aids to observe and identify parts of the digestive system (mouth, teeth, oesophagus, stomach, small intestines, liver, pancreas, large intestines, rectum, and anus). Apply adaptations in sub-sub strand 1.1.1 bullet 2 here and in bullet 4 below. • In purposive groups learners are guided to identify and discuss the functions of parts of the digestive system the mouth, oesophagus, stomach, small intestines, large intestines, rectum, and anus). Apply adaptations in sub-sub strand 1.1.1 bullet 1 here. • In purposive groups learners are guided to demonstrate the use of different types of teeth (Incisors, Canines, Pre-molars and Molars) using locally available food items (e.g. sugar cane, carrots, fruits, tubers), and digital devices. Learners with cerebral palsy who may have difficulties in chewing and swallowing and those with tooth cavities could be given softer	1. How are the different parts of the digestive system suited to their functions? 2. How are the four types of teeth suited to their different functions?

			food items. Light intensity should be moderated for learners with epilepsy and those with visual difficulties, • In purposive groups, learners are guided to draw or model the four types of teeth using locally available materials. Learners with manipulation difficulties such as those with missing limbs, amputees, muscular dystrophy and those with jerky movement of the limbs could use any alternative functional part of their body or mount or model or stamp or copy paste using adapted digital devices.	

Core competencies to be developed:

- Critical thinking while identifying different parts of the digestive system and the four types of teeth.
- Communication and Collaboration as they work in groups.
- Digital literacy as they use digital devices to observe and identify functions of parts of the digestive system/ the four types teeth.

Links to Pertinent and Contemporary Issues: • Environmental sustainability as they collect materials for modelling. • Disaster risk reduction by taking care as they model the teeth.	**Links to values** • Responsibility as they care for the models and materials. • Respect for one another as they work in purposive groups.
Links to other learning areas: • Creative Arts when modelling four types of teeth. • Mathematic activities as they group teeth based on their structure and functions • Home Science as they take care of their teeth.	• **Suggested Community Service Learning Activities:** Advocate for the right use of teeth in their community.
Non-formal activities to support learning	**Suggested assessment modes**

• Learners learn how to care for the teeth during home science club.	Observation, checklists, video recording, taking photos, written or typed work, portfolio.
Suggested Learning Resources: Assistive technology (adapted pens/ pencils, pen/ pencil grips, book holders and page turners, head/ mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices); pictures, video clips, audios and charts on animals, their characteristics and products; Multipurpose communication board; ambulatory devices such as wheelchairs, callipers, walkers, crutches, scooter boards; gloves, forceps, goggles, tongs, overcoats, types of food such as carrots and sugarcanes, adapted books, universal cuff, glue and manila paper.	
Other related service providers: such as Physiotherapists, Occupational therapists, teacher aides, resource persons.	

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify parts of the digestive system.	Identifies parts of the digestive system with ease.	Identifies parts of the digestive system.	Identifies some parts of the digestive system.	Identifies some parts of the digestive system with prompts.
Describe functions of different parts of the digestive system.	Accurately and consistently describes functions of parts of the digestive system.	Describes different functions of the digestive system.	Attempts describing different parts of the digestive system.	Attempts describing functions of different parts of the digestive system with assistance.
Develop curiosity has he/she takes care of teeth.	Efficiently develops curiosity as he/she takes care of teeth.	Develops curiosity as he/she takes care of teeth.	Sometimes develops curiosity as he/she takes care of teeth.	Shows a bit of curiosity as he/she takes care of teeth.
Model the four different types of teeth.	Models the four different types of teeth with ease.	Models the four different types of teeth.	Attempts modelling the four different types of teeth.	Has difficulty modelling the four different types of teeth.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
2.0: ENVIRONMENT	2.1: Air Pollution **(12 lessons)**	By the end of the sub strand the learner should be able to: a) State the meaning of the terms "pollution" and "air pollution"; b) identify air pollutants in his/her environment; c) distinguish between clean and polluted air in his/her environment; d) identify effects of air pollution on living things; e) identify ways of reducing air pollution; f) make a functional air pollution detector; g) make a functional dust mask using locally available materials; h) appreciate the importance of clean air in his/her environment.	• In purposive groups, learners are guided to discuss the meaning of the terms "pollution" and "air pollution". Learners with speech difficulties could use residual speech as they are lip read, or point or write or sign or type or use a multipurpose communication board to express own views. (Apply this adaptation in all the subsequent activities under this strand where speech is required). • **Learners to be guided as they use visual aids and digital devices to identify and record the meaning of "pollution" and "air pollution". Learners with manipulative difficulties such as those with missing limbs, amputees and those with cerebral palsy could use alternative functional parts of their body or appropriate assistive technology such as adapted computers with appropriate software which enhance manipulation by use of head/ mouth pointers, toes or audio command or be assisted by peers or teacher aide or**	1. What is pollution? 2. What is air pollution? 3. What are the causes of air pollution? 4. How can you reduce air pollution?

			teacher as they perform the above tasks. Learners with short stature and those on wheelchairs could be allowed preferential seating while those with floppiness, spinal injury and those with spinal curvature could require appropriate positioning devices such as adapted chairs or desks, prone wedges and straps. For learners with epilepsy and those with visual difficulties, light intensity (glare) should be controlled on the digital devices. (Apply these adaptations for learners with manipulation difficulties, those with floppiness, short stature, spinal curvature, spinal injuries and those with epilepsy in all the subsequent activities involving manipulation, recording and use of digital devices under this strand). • In purposive groups, learners move around the school and neighbourhood to observe, identify and record air pollutants (bad smell, dust, smoke). Learners with mobility difficulties could use appropriate mobility devices such as wheelchairs, walkers, crutches with or without assistance from peers or teacher aide or teacher.	

			Learners with fine motor difficulties such as those with muscular Dystrophy could use appropriate assistive technology such as adapted digital devices to record their observation. Learners with asthma should be kept away from triggers such as smoke, dust and strong scent (Apply these adaptations for learners with manipulation difficulties and those with epilepsy in all subsequent activities which involve exposure to triggers such as dust, water and strong scent under this strand).Learners to be guided as they use visual aids and digital devices to identify and record air pollutants. • In purposive groups, learners move around the school and neighbourhood to observe and identify clean and polluted air (toilets, dusty area, smoky areas and decomposing matter). Apply the adaptations in bullet 3 above here and in 7 below. • Learners to be guided as they use visual aids and digital devices to identify and record air pollutants (Apply the adaptation in bullet 2 above here and in 6 and 8 below). • Learners to be guided as they use visual aids and digital devices to	

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			distinguish between clean and polluted air. • In purposive groups, learners move around the school and neighbourhood to observe, identify and record the effects of air pollution on living things (breathing problems, irritation of eyes, visibility and growth of plants) • In purposive groups, learners to use visual aids and digital devices to identify the effects of air pollution on living things. • Learners are guided to identify and discuss ways of reducing air pollution (proper disposal of waste; Ventilation; Use of Ventilation Improved Pit latrines; sprinkling ash in pit latrines; Sprinkling water on dusty grounds). (Apply adaptation on speech in bullet 1 above here). In purposive groups, learners are guided to observe safety precautions when working in air polluted environment (Example: practise use of dust masks, goggles, overcoats). Safety precaution should be observed for learners with epilepsy and asthma as they work in polluted environment. **Project 1:** In purposive groups, learners are guided to make a simple air pollution detector using a clean white piece of cloth.	

			Project 2: Learners are guided to make a functional dust mask using locally available materials. In projects 1 and 2 above, learners with manipulation difficulties such as Learners with missing limbs, amputees and those with cerebral palsy could use any alternative functional parts of their body or appropriate assistive technology such as prosthesis, universal cuffs, adapted cutting tools with handles or be assisted by peers or teacher aide or teacher to perform given tasks. They should be allowed to perform according to their individual functional ability (The adaptations made in this sub strand apply in all the subsequent activities which involve manipulation, speech, mobility, identification and recording and use of digital devices under this strand).	

Core competencies to be developed:

- Citizenship when reducing air pollution in his/her environment.
- Digital literacy as he/she searches for information about air pollution.
- Critical thinking when deciding on ways of reducing air pollution.
- Problem solving when reducing air pollutants in his/her environment.

Links to Pertinent and Contemporary Issues:	**Links to Values:**
• Environmental conservation as he/she reduces air pollution. • Health Education as he/she identifies health problems associated with air pollution. • Safety as he/she makes the dust masks.	• Responsibility as he/she reduces air pollution. • Love as they appreciate others work.

Links to other Learning areas: • Agriculture: as they use compost pits to dispose waste matter which turns into manure. • Home Science: as they use dust masks when cleaning the compound. • Mathematics: as they measure when making pollution detectors and functional dust masks.	**Suggested Community Service Learning Activities:** • Planting trees and grass to reduce dust. • Proper disposal of waste in his/her environment.
Suggested non-formal activities to support learning: • Learners to establish the difference between clean and polluted air in the school compound. • Plating of trees in the school compound to clean the air during environmental club.	**Suggested modes of assessment:** Oral questions, observation, project work, portfolio, audio-visual recording, teacher-made assessment, Peer assessment.
Suggested Learning Resources: Writing materials such as pen, pencils, adapted pens/ pencils, head/ mouth pointers; adapted digital devices such as cameras, computers/ tablets, smart phones, e-books; ambulatory devices such as wheelchairs, callipers, walkers, crutches, scooter boards; masks, goggles, overcoats, clean white pieces of cloth; school-kitchen, toilets, rubbish pit, internet, textbooks	
Other related service providers: Physiotherapists, Occupational therapists, teacher aides, Resource persons	

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
State the meanings of the terms pollution and air pollution.	States the meanings of the terms pollution and air pollution successfully.	States the meanings of the terms pollution and air pollution.	Sometimes states the meanings of the terms pollution and air pollution.	Sometimes state the meanings of the terms pollution and air pollution with assistance.
Identify air pollutants in his/her environment.	Correctly and consistently identifies air	Identifies air pollutants in his or her environments.	At times identifies air pollutants in his or her environment	Has difficulties in identifying air pollutants in his/her environment.

	pollutants in his /her environment			
Distinguish between clean and polluted air in his/her environment.	Accurately distinguishes between clean and polluted air in his/her environment.	Distinguishes between clean and polluted air in his/ her environment.	Occasionally distinguishes between clean and polluted air in his/her environment.	Distinguishes between clean and polluted air in his/her environment only with assistance.
Identify effects of air pollution on living things.	Identifies the effects of air pollution on living things and assist others.	Identifies the effects of air pollution on living things.	Identifies the effects of air pollution on living things with prompts.	Identifies the some effects of air pollution on living things with guidance.
Identify ways of reducing air pollution.	Explicitly identifies ways of reducing air pollution.	Identifies ways of reducing air pollution.	Sometimes identifies ways of reducing air pollution.	Identifies ways of reducing air pollution with assistance.
Make a simple air pollution detector.	Correctly and neatly makes a simple air pollution detector.	Correctly makes a simple air pollution detector.	Makes a simple air pollution detector with cues.	Makes a simple air pollution detector with a lot of guidance.
Make a functional dust mask using locally available materials.	Correctly and consistently makes a functional dust mask using locally available materials**.**	Makes a functional dust mask using locally available materials.	Makes a functional dust mask using locally available materials with guidance.	Makes a functional dust mask using locally available materials with a lot of assistance.
Appreciating the importance of clean air in his/her environment	Totally appreciates the importance of clean air in his/her environment.	Appreciates the importance of clean air in his/her environment.	Sometimes appreciates the importance of clean air in his/her environment	Appreciates the importance of clean air in his/her environment when reminded.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	2.2: Water Pollution (11 lessons)	By the end of the sub strand the learner should be able to: a) States the term "water pollution"; b) identify water pollutants in his/her environment; c) distinguish between clean and polluted water in his/her environment; d) identify effects of water pollution on living things; e) identify ways of reducing water pollution; f) make a functional water filter using locally available materials; g) appreciate the importance of clean	• In purposive groups, learners are guided to discuss the meaning of the term "water pollution". • Learners to be guided as they use visual aids and digital devices to explore the meaning of the term "water pollution". • In purposive groups, learners move around the school and neighbourhood to observe, identify and record water pollutants (soil and waste). • Learners to be guided as they use visual aids and digital devices to observe, identify and record water pollutants. • In purposive groups, learners move around the school and neighbourhood to observe and identify clean and polluted water (water in a pit, open pools, ponds, rivers, sewers and watering troughs). • Learners to be guided as they use visual aids and digital devices to	1. What causes water pollution? 2. What are the effects of water pollution? 3. How can water pollution be reduced?

		water in his/her environment.	differentiate between clean and polluted water. • In purposive groups, learners move around the school and neighbourhood to observe, identify and record the effects of water pollution on living things (waterborne diseases, death of plants and animals that live in water). • In purposive groups, learners to use visual aids and digital devices to identify the effects of water pollution on living things. • In purposive groups, learners are guided to identify and discuss ways of reducing water pollution (proper disposal of waste; proper disposal of dirty water). • In purposive groups, learners are guided to observe safety precautions when working in water polluted environment (Example: practise use of gumboots and gloves). • **Project:** In purposive groups, learners are guided to make a functional water filter using locally available materials (Apply the adaptations in sub strand 2.1 above here). Precaution measures could be taken for learners with epilepsy against triggers such as depths, heights and water (Apply these adaptations in all the subsequent activities under this strand where water, heights or depths are involved).	

Core competencies to be developed:

- Citizenship when reducing water pollution in the environment.
- Digital literacy as he/she searches for information about water pollution.
- Critical thinking when deciding on ways of reducing water pollution
- Problem solving when reducing water pollutants in his/her environment.

Links to pertinent and contemporary issues:	**Links to Values**
• Environmental conservation as learners reduces water pollution. • Health Education as learners identifies health problems associated with water pollution. • Safety as learners make a water filter.	• Responsibility as learners reduces water pollution. • Love for each other as they appreciate other people's work.
Links to other Learning areas: • Home Science as learners filter water.	**Suggested Community Service Learning Activities:** • Proper disposal of waste in his/her environment. • Use of water filter to obtain clean water for domestic use in the community.
Suggested non-formal activities to support learning: • Learners visit the school kitchen, bathrooms and sewage and explain the differences between this water and water from the school tank or from the water taps; • Learners prepare trenches to drain dirty water in the school. • Learners clean gutters of their classrooms to harvest clean water during club time.	**Suggested modes of assessment:** Oral questions, observation, project work, portfolio, written exercise, audio-visual recording, teacher made assessments.

Suggested learning resources:
Gumboots, gloves, writing materials such as pen, pencils, adapted pens/ pencils, head/ mouth pointers/ pen/ pencil grips; adapted digital devices such as cameras, computers/ tablets, internet, smart phones, e-books; ambulatory /supportive devices such as wheelchairs, callipers, crutches, scooter boards; multipurpose communication boards, universal cuffs, multipurpose stamps; pieces of cloth, old sieves, sticks, strings, rubber bands, strands of thread, adhesives such as glue.

Other related service providers: Physiotherapist, C apists, Teacher Aide, Resource R

Assessment Rubric				
Indicator	**Exceeds expectation**	**Meets expectation**	**Approaches expectation**	**Below expectation**
State the meaning of the term water pollution.	Precisely states the meaning of the term water pollution.	States the meaning of the term water pollution.	States the meaning of the term water pollution with prompts.	Has difficulties stating the meaning of the term water pollution.
Identify water pollutants in his/her environment.	Correctly and consistently identifies water pollutants in his/her environment.	Identifies water pollutants in his/her environment.	Identifies some water pollutants in his/her environment.	Identifies some water pollutants in his/her environment with a lot of guidance.
Distinguish between clean and polluted water in his or her environment.	Explicitly distinguishes between clean and polluted water in his or her environment.	Distinguishes between clean and polluted water in his or her environment.	Distinguishes between clean and polluted water in his or her environment with prompts.	Can only distinguishes between clean and polluted water in his or her environment with a lot of support.
Identify effects of water	Effectively identifies the effects of water pollution on living things.	Identifies the effects of water pollution on living things.	Identifies some effect of water pollution on living things.	Has difficulty identifying the effects of water pollution on living things.

pollutions in living things.				
Identify ways of reducing water pollution.	Identifies and explains ways of reducing water pollution.	Identifies ways of reducing water pollution.	Identifies some ways of reducing water pollution.	Identifying some ways of reducing water pollution with prompts.
Make a functional water filter using locally available materials	Makes a functional water filter using locally available materials and also guides peers.	Makes a functional water filter using locally available materials.	Attempts making a functional water filter using locally available materials.	Has difficulty making a functional water filter using locally available materials.
Appreciating the importance of using clean water in his/her environment.	Consistently shows appreciation for the importance of using clean water in his/her environment	Shows appreciation for importance of using clean water in his/ her environment.	Sometimes shows appreciation for importance of using clean water in his/her environment.	Sometimes shows appreciation for importance of using clean water in his/her environment when reminded.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
3.0: DIGITAL TECHNOLOGY	3.1 Digital devices (7 lessons)	By the end of the sub strand the learner should be able to; a) State the meaning of term "digital device"; b) identify the various digital devices in his/her locality; c) identify different parts of digital devices in his/her locality; d) state the functions of the various parts of a digital device; e) demonstrate proper connection of parts of digital devices; f) demonstrate proper use of digital devices in their day to day life; g) model external parts of a digital device	• In purposive groups, learners are guided to discuss the meaning of the term "digital device". Learners with speech difficulties could use residual speech as they are lip read or sign or write or type or use a multipurpose communication board to express own views. • In purposive groups, learners are guided to observe and identify orally or point or write or draw or type the various digital devices in their locality (Desk top computer, Laptop, Mobile phone, TVs, Radios, Tablets, iPads). • In purposive groups, learners are guided to observe and identify the various parts of digital devices using real objects and/or visual aids (for example: key board/touch pad, mouse, monitor, CPU, cables). (adaptation in bullet 2 applies here) • In purposive groups, learners to ...s the functions of the various digital device. (Apply the	1. What are some of the electronic gadget used at home? 2. What are the main parts of a digital device? 3. What are the functions of the main parts of a computer?

		using locally available materials.	adaptation for speech in bullet 1 above). • In purposive groups, learners are guided to connect parts of the digital devices in their locality. Learners with manipulation difficulties such as Learners with missing limbs, amputees and those with cerebral palsy could use any alternative functional parts of their body or appropriate assistive technology such as prosthesis, universal cuffs or be assisted by peers or teacher aide or teacher to perform given tasks. They should be allowed to perform according to their individual functional ability. (Apply this adaptation in bullet 6 and project below). • Learners to practice proper use of digital devices (typing, taking photos, play stations, recording videos and audios). **Project:** In purposive groups, learners to model external parts of a digital device using locally available materials. (Adaptations made in this sub strand applies in all the subsequent activities where manipulation, speech, observation, identification and the use of digital devices is involved under this strand).	
Core competencies to be developed: • Digital literacy as they use digital devices				

<table>
<tr><td colspan="2">
• Critical thinking and Problem solving as they identify and connect the components of a digital device.
• Communication and Collaboration as they work in groups.
• Imagination and Creativity as they model parts of a digital device.
• Learning to learn by properly connecting the different parts for use.
</td></tr>
<tr><td>Links to Pertinent and Contemporary Issues:
• Safety when handlings digital devices.</td><td>Links to Values:
• Responsibility as they handle digital devices.</td></tr>
<tr><td>Links to other Learning Areas:
• Creative Art when modelling;
• Mathematics when matching parts of the digital devices.</td><td>Suggested Community Service Learning Activities:
• Connection of digital devices for use in the community.</td></tr>
<tr><td>Suggested non-formal activities to support learning:
• Learners assemble all the school computers in the school computer laboratory and test them to confirm that they are working during computer club.</td><td>Suggested modes of assessment:
Oral questions, observation, project work, portfolio, checklists, teacher made assessment, photo shooting, audio-visual recording</td></tr>
<tr><td colspan="2">Suggested Learning Resources:
Writing materials such as pen, pencils, adapted pens/ pencils, head/ mouth pointers; adapted digital devices such as Television sets, Digital Versatile Disk (DVDs), set top boxes cameras, Desktop computer,/ tablets, Laptop, Mobile phone, TVs, Radios, Tablets, iPads, key board/touch pad, mouse, monitor, CPU, cables, smart phones, e-books, real parts of various digital devices such as key board/touch pad, mouse, monitor, processor, cables; multipurpose communication boards, universal cuffs, multipurpose stamps, extension sockets</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapist Occupational Therapist, Resource Person (ICT Technician), Teacher aide</td></tr>
</table>

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
State the meaning of the term "digital device".	Distinctly states the meaning of the term "digital device".	States the meaning of the term "digital device".	States the meaning of the term "digital device" with minimal assistance.	Has difficulty stating the meaning of the term "digital device".
Identify various digital devices in his or her locality.	Correctly and consistently identifies digital devices in his or her locality.	Identifies the various digital devices in his or her locality.	Identifies some digital devices in his or her locality.	Identifies only two digital devices in his or her locality.
Identify different parts of digital devices in his/her locality.	Identifies the different parts of digital devices in his or her locality with ease.	Identifies the different parts of digital devices in his or her locality.	Identifies some parts of digital devices in his or her locality.	Identifies a few different parts of digital devices in his or her locality.
State the functions of the various parts of a digital device.	States the function of the various parts of a digital device with accuracy.	States the function of the various parts of a digital device.	States the function of some parts of a digital device.	Has difficulty stating the function of the various parts of a digital device.
Demonstrate proper connection of parts of digital devices.	Demonstrates proper connection of parts of digital devices and also assists peers.	Demonstrates proper connection of parts of digital devices.	Demonstrates proper connection of parts of digital devices with prompts.	Demonstrates proper connection of parts of digital devices with a lot of assistance.
Demonstrate proper use of digital devices in their day to day life.	Accurately and consistently demonstrates proper use of digital devices in their day to day life.	Demonstrates proper use of digital devices in their day to day life.	Sometimes demonstrates proper use of digital devices in their day to day life.	Demonstrates proper use of digital devices in their day to day life with maximum assistance.
Model external parts of a digital device using locally available materials.	Correctly models all external parts of a digital device using locally available materials with ease.	Models external parts of a digital device using locally available	Models a number of external parts of a digital device using locally available materials.	Models a number of external parts of a digital device using locally available materials with

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
	3.2 Coding (5 lessons)	By the end of the sub strand the learner should be able to: a) state the meaning of the term "coding"; b) identify coded patterns; c) play simple puzzle games.	• In purposive groups, learners are guided to discuss the meaning of the term "coding". (Apply adaptations made in sub strand 3.1 bullet 1 and 4 here and also in bullets 2 and 3 below). • In purposive groups, learners are guided to observe, identify and discuss locally available coded patterns (for example: arrangement of leaves, how birds make nests, arrangement of shapes on a football and tennis ball, Sudoku in Mathematics, Word puzzle in English). • Use digital devices to observe, identify and discuss different coded patterns (For example: fun and games). Apply adaptations made in sub strand 3.1 bullet 3 here and also in bullet 5 below. • In purposive groups, learners are guided to play simple puzzle games (for example: fitting in missing parts to complete the whole; re-assembling dismantled parts to complete the whole, word puzzles). • Use digital devices to solve simple terns (for example: computer es and puzzles).	1. What is coding?

<table>
<tr><td colspan="2">Core competencies to be developed:
• Digital literacy as they use digital devices.
• Critical thinking and Problem solving as they play puzzle games.
• Communication and Collaboration as they work in purposive groups.
• Imagination and Creativity as they play puzzle games.
• Learning to learn by using digital devices to play puzzle games.</td></tr>
<tr><td>Links to Pertinent and Contemporary Issues :
• Safety when handlings digital devices</td><td>Link to values:
• Responsibility as they handle digital devices and other learning aids.</td></tr>
<tr><td>Links to other Learning Areas:
• Creative Art when modelling parts of digital devices.
• Mathematics when sorting and matching different objects.
• English as they solve word puzzles.</td><td>Suggested Community Service Learning Activities:
• Connecting and operating digital devices at school and community functions.</td></tr>
<tr><td>Suggested non-formal activities to support learning:
• Learners are guided to fill the puzzle in the children's pull out of the local newspaper; learners to practice coding games on the play station in the school computer.</td><td>Suggested modes of assessment:
Observation, oral questions, checklist, teacher made assessment, audio-visual recording, photo shooting</td></tr>
<tr><td colspan="2">Suggested learning resources:
Word puzzle games, Sudoku game, writing materials such as pen, pencils, adapted pens/ pencils, pen/pencil grips, page turners, book holders, head/ mouth pointers; adapted digital devices such as Television sets, Digital Versatile Disk(DVDs), set top boxes cameras, computers/ tablets, smart phones, e-books, real parts of various digital devices such as key board/touch pad, mouse, monitor, processor, cables; digital devices such as adapted computers and smart phones, Universal Serial Bus cables, projectors, cameras, head/ mouth pointers, multipurpose communication boards, universal cuffs, multipurpose stamps; extension sockets, newspapers</td></tr>
<tr><td colspan="2">Other related service providers such as Physiotherapists, Occupational Therapists, Resource Persons, Teacher Aide,</td></tr>
</table>

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
State the meaning of term "coding".	States and explains the meaning of the term "coding".	States the meaning of the term "coding".	States the meaning of the term "coding" with prompts.	Has difficulty stating the meaning of the term "coding".
Identify coded patterns.	Accurately and consistently identifies coded patterns.	Identifies coded patterns.	Identifies some coded patterns.	Identifies some coded patterns with assistance.
Play simple puzzle games.	Plays simple puzzle games with accuracy and assist peers.	Plays simple puzzle games.	Plays some simple puzzle games.	Plays some simple puzzle games with guidance

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
4.0 MATTER	4.1: States of matter 4.1.1: Understanding matter (6 lessons)	By the end of the sub strand the learner should be able to; a) identify the three states of matter; b) investigate different states of matter to show their characteristics; c) categorise substances in his/her environment into the three states of matter; d) observe safety when working with different materials; e) show curiosity while categorising different materials according to their states.	• In purposive groups, learners to observe and identify solids, liquids and the presence of air in their environment. Learners could identify orally or point or write or draw or type their responses. • In purposive groups, learners to use visual aids and digital devices to identify the three states of matter (solids, liquids, gases). Learners with manipulation difficultiessuch as those with amputation, missing limbs or those with cerebral palsy especially those with jerky movements could use any other alternative parts of their body or appropriate assistive technology to operate the digital devices. Learners with spinal curvature such as those with scoliosis, learners with spinal injury and those with floppiness could require appropriate positioning devices. For learners with epilepsy and those with visual difficulties, light intensity could be controlled on the digital devices. • Learners to work in purposive groups to investigate the characteristics of different states of matter (shape, volume and mass). Learners with manipulation difficulties such as those with missing limbs, amputees and those with cerebral palsy could use any alternative functional	1. What are the characteristics of matter? 2. How can we show that there is air around us?

			parts of their body or appropriate assistive technology such as prosthesis, universal cuffs or be assisted by peers or teacher aide or teacher to perform given tasks. Safety precaution could be observed for learners with manipulative difficulties such as those with brittle bones, muscular dystrophy, osteoporosis by giving them lighter masses and volumes as well as those with asthma and epilepsy against triggers such as dust and water. • Learners to manipulate different materials to show the characteristics of the three states of matter (filling balloons with air; filling containers of different shapes with water; filling containers with pebbles, soil and stones). (Apply adaptations on bullet 3 above here). • Learners to observe different substances in the locality and group them into the three states of matter. (Apply adaptations on bullet 1 above here). • Learners to use digitals devices to demonstrate the characteristics of the three states of matter. (Apply the adaptations made in bullet 2 above here and in bullet 6 below) • Learners are guided on how to take precautions when handling different s. (Adaptations made in this sub	

			strand also apply in all the subsequent activities which require speech, demonstration, manipulation, use of visual aids and digital devices, recording, writing, drawing, typing and triggers to chronic health impairments under this strand. However, some specific adaptations have also been made on specific activities).	

Core competencies to be developed:

- Communication and collaboration as they work in groups.
- Digital literacy as they use digital devices to investigate and categorise different materials into the three states of matter.

Links to pertinent and contemporary issues: • Safety as they work with different materials. • Environmental Sustainability by caring for different materials while investigation the different states of matter. • Disaster Risk Reduction as they take precautions while manipulating different materials.	**Links to Values:** • Responsibility as they manipulate materials. • Respect as they respect other people's opinions. • Love as they appreciate other people's work. • Integrity by caring for the materials used in the learning process.
Link to other learning areas: • Agriculture: as they identify air as a component of soil. • Mathematics: as they learn on volume, mass and shape. • Home science: as they wash hands after handling different materials.	**Suggested community service learning activities:** • With parental guidance, learners identify the uses of solids, liquids and gases at home.
Suggested non-formal activities to support learning: • Learners to put water in a bucket, then fill the same bucket with soil and balloons inflated with air. Learners then compare the three states of matter in terms of their shape, volume and mass during science club.	**Suggested modes of assessment:** Oral questions, observation, written work, checklist, teacher made assessment, audio-visual recording, photo shooting

Suggested learning resources: Balloons, pebbles, stones, containers of various sizes, objects of different shapes, water/porridge, soil; writing materials such as pen, pencils, adapted pens/ pencils, pen/pencil grips, page turners, book holders, head/ mouth pointers; adapted digital devices such as cameras, computers/ tablets, smart phones, e-books, cameras, universal cuffs, multipurpose communication boards, multipurpose stamps; extension sockets, internet connectivity
Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aides, Resource Person

Assessment Rubric

Indicator	**Exceeds expectation**	**Meets expectation**	**Approaches expectation**	**Below expectation**
Identify the three states of matter.	Identifies and explains the three states of matter.	Identifies the three states of matter.	Identifies two states of matter.	Identifies only one tstate of matter.
Investigate different states of matter to show their characteristics.	Correctly investigates different states of matter to show their characteristics.	Investigates different states of matter to show their characteristics**.**	Investigates different states of matter to show their characteristics with prompts**.**	Investigate different states of matter to show their characteristics with a lot of assistance**.**
Categorise substances in his/her environment into the three states of matter.	Correctly and consistently categorises substances in his/ her environment into the three states of matter.	Categorises substances in his/ her environment into the three states of matter.	Categorises some substances in his/ her environment into the three states of matter.	Categorise some substances in his/ her environment into the three states of matter with maximum guidance.

Observe safety when working with different materials.	Keenly observes safety when working with different materials.	Observes safety when working with different materials.	Observes safety when working with different materials with guidance.	Has difficulty observing safety when working with different materials.
Show curiosity while categorising different substances according to their states.	Strongly shows curiosity while categorising different materials according to their states	Shows curiosity while categorising different materials according to their states.	Sometimes shows curiosity while categorising different materials according to their states.	Shows curiosity while categorising different materials according to their states only when assisted.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	4.2: Properties of matter 4.2.1: Floating and sinking **(8 lessons)**	By the end of the sub strand the learner should be able to: a) demonstrate sinking and floating using different materials; b) identify objects that can float and those that can sink in water; c) identify factors that affect floating and sinking of objects in water; d) make a floater using locally available materials; e) appreciate use of floaters as life savers.	• In purposive groups, learners are guided to use objects to demonstrate sinking and floating of different materials. (Apply the adaptations in sub-sub strand 4.1.1, bullet 3 above here and in bullets 5, 6, 8 and project below). • In purposive groups, learners use visual aids and digital devices to observe and record sinking and floating of different materials. (Apply the adaptations in sub-sub strand 4.1.1, bullet 2 above here and in bullet 4 and 7 below). • Learners are guided to observe and classify objects in their environment into those that float and those that sink in water. (Apply the adaptations in sub-sub strand 4.1.1, bullet 1 above here). • Learners are guided as they use digital devices in observing and classifying objects into those that float and those that sink in water. • Learners are guided to investigate how shape and type of materials affects sinking or floating of an object (for example: normal bottle tops, crushed bottle tops, same quantity of plasticine in different shapes).	1. Why do some materials float and others sink? 2. How are floaters useful in our lives?

			• In purposive groups learners are guided on how to make floaters to sink and sinkers to float. • Learners are guided to use digital devices to observe the use of floaters as life savers. • In purposive groups learners are guided on how to use floaters as life savers. **Project**: In purposive groups learners make floaters using locally available materials such as rubber tubes, wood or plastics.	
Core competencies to be developed: • Critical thinking as they identify factors that affect floating and sinking of objects. • Communication and collaboration as learners investigate and discuss observations. • Imagination and creativity as they make floaters. • Digital Literacy as they apply the digital devices to investigate floating and sinking of objects. •				
Links to pertinent and contemporary issues: • Life skills while using floaters as life savers; • Disaster risk reduction by using floaters to prevent drowning. •			**Links to Values:** • Love as they appreciate other learner's work. • Respect as they respect other learner's opinions.	
Link to other Learning Areas: • Creative Art as they make floaters. • Physical and Health Education as they swim. •			**Community service learning:** • Learners are guided by adults on how to use floaters as life savers.	
Suggested non-formal activities to support learning: • Learners put water in a drum in the school compound and collect assorted materials to test whether they sink or float in the water during games time.			**Suggested modes of assessment:** Oral questions, observation, project work, audio-visual recording, teacher made assessment, checklists	

Suggested Learning Resources: Life savers, inflated motor vehicle tyre tubes, pieces of timber, 3ply, rubber tubes, wood, plastics bottle tops, water, crushed bottle tops, plasticine, balloons, pebbles, soil, stones; photos or recorded video on floating and sinking; writing materials such as pen, pencils, adapted pens/ pencils, pen/pencil grips, page turners, book holders, head/ mouth pointers; adapted digital devices such as cameras, computers/ tablets, smart phones-books, cameras, head/ mouth pointers, multipurpose communication boards, universal cuffs, multipurpose stamps; extension sockets
Other related service providers: Physiotherapists, Occupational Therapists, Teacher Aide, Resource Person

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Demonstrate sinking and floating using different materials.	Outstandingly demonstrates sinking and floating using different materials.	Demonstrates sinking and floating using different materials.	Demonstrates sinking and floating using different materials with prompts.	Demonstrates sinking and floating using different materials with a lot of assistance.
Identify objects that can float and those that can sink in water.	Precisely identifies objects that can float and those that can sink in water.	Identifies objects that can float and those that can sink in water.	Sometimes can identifies objects that can float and those that can sink in water.	Identifies objects that can float and those that can sink in water with prompts.
Identify factors that affect floating and sinking of objects in water.	Correctly and consistently identifies factors that affect floating and sinking of objects in water.	Identifies factors that affect floating and sinking of objects in water.	Identifies some factors that affect floating and sinking of objects in water.	Identifies some factors that affect floating and sinking of objects in water with guidance.
Make a floater using locally available materials.	Correctly and neatly makes a floater using	Makes a floater using locally available materials.	Makes a floater using locally	Has difficulty making a floater using locally available materials.

	locally available materials.		available materials with assistance.	
Appreciate use of floaters as life savers.	Strongly demonstrates appreciation for use of floaters as life savers.	Demonstrates appreciation for use of floaters as life savers.	Sometimes demonstrates appreciation for use of floaters as life savers.	Demonstrate appreciation for use of floaters as life savers when reminded.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
5.0: FORCE AND ENERGY	5.1 **:** Force 5.1.1: Force and its effects (4 lessons)	By the end of the sub strand the learner should be able to: a) state the meaning of the term "force"; b) demonstrate the effects of force on an object; c) observe safety precautions when dealing with force; d) appreciate effects of force in everyday life.	• In purposive groups, learners are guided to carry out activities to show the meaning of the term "force". Learners with manipulation difficulties such as those with missing limbs, amputees and those with gross motor difficulties could use alternative functional parts of their body or appropriate assistive technology such as head/ mouth pointers, pen/ pencil grips, universal cuffs, prostheses or be assisted by peers or teacher aide or teacher to perform given tasks. Safety precaution could be observed for learners with brittle bones and muscular dystrophy by giving them lighter tasks. (*Apply these adaptations in all the subsequent activities where manipulation, recording and demonstration of force is involved under this strand).* • In purposive groups, learners to demonstrate and observe the effect of a force on an object (for example: change of direction of movement, change of shape of an object, start and stop movement of an object). • Learners to use digital devices to observe force at work (e.g. wheel barrow, tug of war, pulling and pushing a hand-cart, ox - cart, pushing a bicycle). Learners with manipulation difficulties such as those with	1. What is force? 2. What are the effects of force in everyday life?

			amputation, missing limbs or those with cerebral palsy especially those with jerky movements could use any other alternative parts of their body or appropriate assistive technology to operate the digital devices. Learners with spinal curvature such as those with scoliosis, learners with spinal injury and those with floppiness could require appropriate positioning devices. For learners with epilepsy and those with visual difficulties, light intensity could be controlled on the digital devices. • Learners are guided to discuss safety precautions to observe when dealing with force. Learners with speech difficulties could use residual speech as they are lip read or sign or write or type or use a multipurpose communication board to express own views. (Apply adaptations made in this sub strand in all the subsequent activities which require manipulation, recording, and drawing, use of digital devices, demonstration, speech or use of force under this strand. However, besides these adaptations, other specific adaptations have also been made on specific learning activities).	
Core competencies to be developed: • Communication and Collaboration as they carry out activities in groups. • Digital literacy as they use computing devices to search. • Play and observe demonstrations of force.				

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- Critical thinking as they carry out activities to reveal the meaning of the term “force”; Creativity and imagination as they illustrate and demonstrate the meaning and effects of force.

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Links to Pertinent and contemporary issues:

- Disaster Risk Reduction when they observe safety precautions while demonstrating the effects of force on objects.
- Health Education as they clean hands after handling of objects when demonstrating the effect of force.

</td><td>

Link to Values:

- Cooperation as they carry out activities in purposive groups.
- Responsibility as they care for each other while demonstrating the effect of force
- Unity as they carry out tasks together.

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Links to other Learning Areas:

- Agriculture: as they pull the cart and pushing a bicycle.
- Home science: as they push kitchen appliances.
- Physical and Health Education as they work with gym equipment.

</td><td>

Suggested Community Service Learning Activities:

- Participating in tug of war; Observing pulling and pushing a hand-cart, ox cart, pushing a bicycle in the locality.

</td></tr>
<tr><td>

Suggested non-formal activities to support learning:

- Learners to practice tug of war in the field to demonstrate force during game and sport.
- Learners could also practice tearing pieces of paper or pulling elastic bands to demonstrate force during games time.

</td><td>

Suggested modes of assessment:
Oral questions, audio-visual recording, observation, photo shooting, teacher made assessment, checklists

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<tr><td colspan="2">

Suggested learning resources: Wheelbarrow, hand cart, ox-cart, rope for tug of war game, camera, smart phones, balls, springs, recorded videos on effects of force, prostheses, photos or recorded video; writing materials such as pens, pencils, adapted pens/ pencils, pen/pencil grips, page turners, book holders, head/ mouth pointers, multipurpose stamps,; adapted digital devices such as cameras, computers/ tablets, multipurpose communication boards, universal cuffs

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Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aides, Resource Person.

</td></tr>
</table>

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
State the meaning of the term force.	States the meaning of the term 'force' and assist peers.	States the meaning of the term 'force'.	States the meaning of the term 'force' with prompts.	States the meaning of the term 'force' with a lot of support.
Demonstrate the effects of force on an object.	Demonstrates the effects of force on an object with ease.	Demonstrates the effects of force on an object.	Demonstrates the effects of force on an object with assistance.	Has difficulty demonstrating the effects of force on an object.
Observe safety precautions when dealing with force.	Correctly and consistently observes safety precautions when dealing with force.	Observes safety precautions when dealing with force.	Observes some safety precautions when dealing with force.	Observes a few safety precautions when dealing with force.
Appreciate effects of force in everyday life.	Strongly and consistently appreciates effects of force in everyday life.	Appreciate the effects of force in everyday life	Occasionally appreciate the effects of force in everyday life	Appreciates the effects of force in everyday life only when reminded.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
	5.2: Energy 5.2.1: Sound energy (5 lessons)	By the end of the sub strand, the learner should be able to: a) demonstrate that sound travels in all directions from a source; b) demonstrate that sound can be reflected; c) make a sound producing instrument from locally available materials.	• Learners are guided to carry out an activity to demonstrate that sound travels in all directions from the source. (Adaptations in sub-sub strand 5.1.1, bullet 2 above apply here). • Learners are guided to use audio aids and digital devices to observe and record the travelling of sound in all directions from a source. (Adaptations in sub-sub strand 5.1.1, bullet 3 above apply here and bullet 4 below). • Learners move to a place where they can observe reflected sound or Echo (for example a cliff, a large hall, a forest, a valley, between tall buildings). Learners with mobility difficulties could use appropriate mobility devices such as wheelchairs, crutches or be assisted by peers or teacher aide or teacher. Safety precaution could be observed for learners with brittle bones to avoid injuries as they move; for learners with epilepsy and those with asthma, to avoid areas with potential triggers such as heights, dust or strong scents respectively. • Learners to use audio aids and digital devices to observe and record the reflection of sound. **PROJECT**: In purposive groups, learners to make a sound producing instrument from locally available materials (for example: bell, wind instruments among others).	How does sound travel?

<table>
<tr><td colspan="2">Core competencies to be developed:
• Communication and Collaboration as they carry out activities in groups.
• Imagination and Creativity as they make sound producing instrument.</td></tr>
<tr><td>Links to Pertinent and contemporary issues:
• Safety when handling materials and objects.</td><td>Links to Values:
• Responsibility by taking care of the equipment and tools.
• Love as they work in purposive groups.</td></tr>
<tr><td>Links to other learning areas:
• Music: as they make and use sound producing instruments.
• Home Science: as they wash hands after the learning activities.</td><td>Suggested Community Service Learning Activities:
• Learners to identify and operate/ use different sound producing instruments in their locality with parental guidance.</td></tr>
<tr><td>Suggested Non-formal activities to Support Learning:
• Learners create an empty classroom and practice reflection of sound (Echo) during drama time.</td><td>Suggested modes of assessment:
Checklist, oral questions, observation, , audio-visual recording, project work</td></tr>
<tr><td colspan="2">Suggested Learning Resources: Drums, whistles, shakers, large empty room, bells, guitars, piano keyboard, bell, wind instruments, recorded videos, camera, mobility devices such as wheelchairs, scooter boards, callipers; mouth/head pointers, universal cuffs, page turners, book holders, prostheses, multipurpose stamps, multipurpose communication boards, adapted learner digital devices such as computers with expanded key boards, key guards, sticky keys, larger screens; computer software such as audio-to-texts, speech synthesisers, screen readers, internet</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person</td></tr>
</table>

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Demonstrate that sound travels in all directions from a source.	Correctly and consistently demonstrates that sound travels in all directions from a source.	Demonstrates that sound travels in all directions from a source.	Sometimes demonstrates that sound travels in all directions from a source.	Has difficulty demonstrating that sound travels in all directions from a source.
Demonstrate that sound can be reflected.	demonstrates and give examples to show that sound can be reflected	Demonstrates that sound can be reflected.	Occasionally demonstrates that sound can be reflected.	Makes little efforts in demonstrating that sound can be reflected.
Make a sound producing instrument from locally available materials.	Correctly and neatly makes a sound producing instrument from locally available materials.	Makes a sound producing instrument from locally available materials.	Makes a sound producing instrument from locally available materials with minimal assistance.	Makes a sound producing instrument from locally available materials with maximum assistance.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
	5.2.1: Light energy **(6 lessons)**	By the end of the sub strand, the learner should be able to: a) demonstrate that light travels in a straight line; b) demonstrate the transmission of light through different materials; c) classify materials into transparent, translucent and opaque.	• Learners to carry out activities to show that light travels in a straight line. Safety precaution should be observed for learners by keeping their naked eyes from bright light. • Learners to use visual aid and digital devices to observe and record the travelling of light in a straight line (Apply the adaptations made in sub-sub strand 5.2.1 bullet 2 here and in bullet 4 below). • Learners to demonstrate, observe and record the transmission of light through different materials. (Apply the adaptations made in sub-sub strand 5.2.1 bullet 1 here). • Learners to use visual aids and digital devices to observe and record the transmission of light through different materials. • Learners to classify materials in their locality into: transparent, translucent or opaque. (Apply the adaptations made in sub-sub strand 5.2.1 bullet 1 here and in the project below). **Project:** Learners to make a screen for projection of still images.	1. How does light move from the source to its surroundings? 2. How does light behave when shone on different materials?
Core competences to be developed: • Digital literacy as learners interact with digital devices to observe different behaviour of light. • Critical thinking as learners classify different objects into either transparent, translucent or opaque.				

<table>
<tr><td colspan="2">

Creativity and imagination as learners make a screen for projecting pictures.
Communication and Collaboration as learners work together in groups.

</td></tr>
<tr><td>Links to pertinent and contemporary issues:
Safety where learners use personal protection equipment as they make the screen.
Personal hygiene is observed as they clean their hands after interacting with different objects from the environment.</td><td>Links to Values:
Unity by learners working together as they do their project.
Responsibility by learners carrying out the assigned tasks in the respective groups.
Respect by learners respecting each other's opinion as they work together in their groups.</td></tr>
<tr><td>Links to other Learning areas: Home Science when lighting up the home; Mathematics when taking measurements of materials to make the screen.</td><td>Suggested Community Service Learning Activities:
Learners to be guided by family members to classify locally available materials as either transparent, translucent or and opaque</td></tr>
<tr><td>Suggested non-formal activities to support learning:
Learners drill holes through three cardboards, arrange them in line then shine a candle light at the hole of one of the cartons at night to show that light travels in a straight line. Learners use a torch at night to show that light travels in a straight line.</td><td>Suggested modes of assessment:
Oral questions, observation, checklists, Taking photos, audio-visual recording</td></tr>
<tr><td colspan="2">Suggested Learning Resources:
Sources of light such as (torches, mobile phones, candles, matches, light from the sun); shiny surfaces such as mirrors, transparent, translucent or opaque objects, white cotton piece of cloth, adhesives such as glue or cello tape, empty cartons or cardboards, recorded videos on how light travels, camera, opaque objects, wheelchairs, scooter boards, callipers, crutches, head/mouth pointers, universal cuffs, page turners, book holders, prostheses, multipurpose stamps, multipurpose communication boards, adapted learner digital devices such as computers with expanded key boards, key guards, sticky keys, larger screens; computer software such as audio-to-text, speech synthesisers, screen readers</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person</td></tr>
</table>

Assessment Rubric

Indicators	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Demonstrate that light travels in a straight line.	Demonstrates that light travels in a straight line and also guides peers.	Demonstrates that light travels in a straight line.	Demonstrates that light travels in a straight line with assistance.	Has difficulty demonstrating that light travels in a straight line.
Demonstrate the transmission of light through different materials.	Demonstrates the transmission of light through different materials with ease.	Demonstrates the transmission of light through different materials.	Sometimes demonstrates the transmission of light through different materials.	Demonstrate the transmission of light through different materials only when guided.
Classify materials into transparent, translucent and opaque.	Precisely classifies materials into transparent, translucent and opaque.	Classifies materials into transparent, translucent and opaque.	Classifies materials into transparent, translucent and opaque with minimal intervention.	Has difficulty classifying materials into transparent, translucent and opaque.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
	5.2.3. Heat energy **(7 lessons)**	By the end of the sub strand the learner should be able to; a) demonstrate conduction of heat; b) identify poor and good conductors of heat; c) identify uses of poor and good conductors; d) make oven gloves and fireless cooker from locally available materials.	• Learners to perform experiments to demonstrate conduction of heat. Learners with manipulation difficulties and those with amputation or missing limbs could use any alternative functional parts of their body or appropriate adapted assistive technology such as head/ mouth pointers, prostheses, tongs with larger insulated handles or be assisted by their peers or teacher aide or teacher to perform tasks according to their individual level of ability. Learners with brittle bones and those with muscular dystrophy could be given lighter tasks Safety precaution could be observed for learners with epilepsy and those with numbness as they work with fire. • Learners to use digital devices to observe and record how conduction of heat takes place. (Apply the adaptations made in sub-sub strand 5.2.1 bullet 2 here, in bullet 4 and 6 below). • Learners to investigate and identify poor and good conductors of heat. Learners with speech difficulties could identify orally or by pointing or signing, or writing or using a multipurpose communication board. (Apply the adaptations made in bullet 1 above here and bullet 5 and in project 1 and 2 below). • Learners use digital devices to observe and record poor and good conductors of heat. • [illegible] to demonstrate and discuss the uses of [illegible]or conductors of heat.	1. How does heat move from one point to another in solids?

			• Learners to use digital devices to observe and record the uses of good and poor conductors of heat **Project 1**: Learners to make oven gloves using locally available materials **Project 2**: Learners to make a fireless cooker	

Core competences to be developed:

- Critical thinking and problem solving as they perform experiment to demonstrate conduction of heat.
- Imagination and Creativity when making the oven gloves and fireless cooker.
- Communication and Collaboration as learners work in groups.
- Digital literacy in the use of digital media in demonstrating and observing conduction of heat.

Links to pertinent and contemporary issues: • Safety in the use of personal protective equipment (PPE) and taking care when using various objects during their demonstrations of conduction of heat; • Environmental education in the use of fireless cooker made from locally available materials. • Life skills: decision making and problem solving as they perform the projects for local use.	**Links to Values:** • Unity as they work in groups. • love as they perform the experiments together • Responsibility by being careful and diligent while carrying out experiments.
Links to other Learning areas: • Creative Arts: as they use tools and equipment to carry out the projects. • Home Science: as they knit the gloves as well as observe hygiene while working.	**Suggested Community Service Learning:** • Entrepreneurship as they acquire basic skills of selling and saving. • Financial literacy through sale of fireless cookers and gloves. • Simple research on heat transfer and its applications.
Suggested non-formal activities to support learning: • Learners use metal rod with candle wax fitted at different positions, then heat the rod at one end to illustrate conduction of heat during science club. • Learners make fireless cookers and use it to keep their packed lunch warm.	**Suggested modes of assessment:** Checklists, oral questions, video recording, portfolio, project, audio-visual recording.

Suggested Learning Resources: Sources of heat such as: matches, candles, lanterns, 'jiko' and charcoal, firewood; good conductors of heat such as metal rods, copper strips, nails, metallic spoons/forks; poor conductors of heat such as wood, plastic; petroleum jelly, wax, margarine, pins, pair of tongs, wooden clips, recorded videos, adapted digital devices such as computers, internet connectivity, camera, smart phones; wheelchairs, scooter boards, callipers, crutches, head/mouth pointers, universal cuffs, page turners, book holders, prostheses
Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person.

Assessment Rubric

Indicators	**Exceeds expectation**	**Meets expectation**	**Approaches expectation**	**Below expectation**
Demonstrate conduction of heat.	Demonstrates conduction of heat with confidence.	Demonstrates conduction of heat.	Makes an effort to demonstrate conduction of heat.	Has difficulty demonstrating conduction of heat.
Identify poor and good conductors of heat.	Identifies poor and good conductors of heat and also assists peers.	Identifies poor and good conductors of heat.	Identifies some poor and good conductors of heat.	Identifies a few poor and good conductors of heat.
Identify uses of poor and good conductors of heat	Identifies and explains uses of poor and good conductors of heat.	Identifies uses of poor and good conductors of heat.	Identifies some uses of poor and good conductors of heat.	Identifies uses of poor and good conductors with a lot of guidance.
Make oven groves and fireless cooker from locally available materials.	Makes neat oven gloves and fireless cooker from locally available materials.	Makes oven gloves and fireless cooker from locally available materials.	Make oven gloves and fireless cooker from locally available materials with minimal assistance.	Makes only oven gloves from locally available materials.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
	5.3 Machines 5.3.1: Levers (8 lessons)	By the end of the sub strand the learner should be able to: • identify the lever as a machine used in everyday life; • identify levers used in the locality; • identify parts of a lever; • make a see saw; • make a functional beam balance using the locally available materials; • show curiosity to use levers to make work easier.	• Learners are guided to identify levers as simple machines. (Apply the adaptations made sub-sub strand 5.2.1, bullet 1 above here and bullet 5, 7 and in project below). • Learners are guided to use visual aids and digital devices to identify levers as simple machines. (Apply the adaptations made in sub-sub strand 5.2.1 bullet 2 here and in bullet 4 and 6 below). • Learners are guided to identify different levers used in the locality (Apply the adaptations made in sub-sub strand 5.1.1 bullet 4 here and in bullet 4 and 6 below). • Learners use digital devices to observe and record different levers (For example: see saw, beam balance, wheel barrow, spade, spoon, fishing rod and scissors). • In purposive groups, learners are guided to identify and record parts of a lever. • Learners use digital devices to observe and identify parts of a lever. Light intensity should be controlled for learners with epilepsy. • In purposive groups, learners are guided to make and use a see saw **Project**: In groups, learners are guided to make and use a functional beam balance using locally available materials.	1. How are levers useful in our everyday life? 2. what locally materials are used to make a seesaw?

<table>
<tr><td colspan="2">Core competencies to be developed:
• Critical thinking as they identify levers in the community.
• Communication and collaboration as they work in groups.
• Imagination and creativity as they make a beam balance and a see saw.</td></tr>
<tr><td>Links to pertinent and contemporary issues:
• Safety as they take care while making and using levers.</td><td>Links to Values:
• Responsibility as they work in groups and handle levers.</td></tr>
<tr><td>Links to other learning areas:
• Agriculture: as they make Farm tools.
• Home Science: as they use cutlery; spoons, bottle openers.
• Physical and Health Education: as they play on the see saw.</td><td>Suggested Community Service Learning Activities:
• Guided identification and safe use of levers in the community</td></tr>
<tr><td>Suggested non-formal activities to support learning:
• Learners play on seesaws during their free time; Learners use a wooden bar to move objects such as an empty drum or cylindrical jerry cans of water on the ground during games time.</td><td>Suggested modes of assessment:
Oral questions, observation, checklist, project work, audio-visual recording, photo shooting</td></tr>
<tr><td colspan="2">Suggested learning resources:
Pair of tongs, bottle openers metal rods, pieces of timber, logs, old tyres, strings, oil tubs, nails, beam balance, see-saw, wheelbarrow, spade, spoons, fishing rod, flag post, wooden clips, recorded videos, adapted digital devices such as computers, internet connectivity, camera, smart phones; wheelchairs, scooter boards, callipers, crutches, head/mouth pointers, universal cuffs, multipurpose stamps page turners, book holders, prostheses</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Persons.</td></tr>
</table>

Assessment Rubric

Indicators	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify the lever as a machine used in everyday life.	Identifies the lever as a machine used in everyday life with ease.	Identifies the lever as a machine used in everyday life.	Identifies the lever as a machine used in everyday life with assistance.	Has difficulties identifying the lever as a machine used in everyday life.
Identify levers used in the locality.	Consistently identifies levers used in the locality.	Identifies levers used in the locality.	Identifies some levers used in the locality.	Identifies some levers used in the locality with guidance.
Identify parts of a lever.	Accurately identifies parts of a lever.	Identifies parts of a lever.	Identifies parts of a lever with guidance.	Has difficulties identifying parts of a lever.
Make a see saw	Makes a see saw and assist peers.	Makes a see saw.	Makes little effort in making a see saw.	Makes a see saw with a lot of assistance.
Making a functional beam balance using locally available materials.	Makes a functional beam balance using the locally available materials and also guides others.	Makes a functional beam balance using the locally available materials.	Makes a functional beam balance using the locally available materials with support.	Sometimes makes a functional beam balance using the locally available materials with prompts.
Show curiosity to use levers to make work easier.	Strongly shows curiosity while using levers to make work easier	Shows curiosity while using levers to make work easier.	Shows curiosity while using levers to make work easier with prompts.	Show curiosity while using levers to make work easier with a lot of assistance.

Strand	Sub Strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
6.0: EARTH AND SPACE	6.1: Weather and Sky 6.1.1: Weather conditions **(8 lessons)**	By the end of the sub strand, the learner should be able to: a) identify bodies observed in the sky during day and night; b) record types of clouds in the sky during the day; c) identify activities done during different weather conditions; d) make a weather clock; e) make a weather chart; f) appreciate the importance of weather conditions within the locality.	• Observe and record features of the sky at day time and during the night. Learners with mobility difficulties could use assistive technology such as wheelchairs, crutches with or without assistance from peers or teacher aide or teacher. Learners with manipulation difficulties such as those with missing limbs, amputees and those with cerebral palsy (jerky movements) could use any alternative functional parts of their body or appropriate assistive technology such as multipurpose stamps, universal cuffs to record their observation by typing or writing or drawing or mounting or stamping or be assisted by peers or teacher aide or teacher. • Learners are guided to observe the sky and record types of clouds (Cumulus, Nimbus Cirrus, and Stratus). (Apply the adaptations made in bullet 1 above here and in project 1 and 2 below). • Learners to use visual aids and adapted digital devices to observe and identify different types of clouds. Learners with manipulation difficulties such as those with amputation, missing limbs or those [illegible] cerebral palsy especially those with	1. What can be observed in the sky during the day? 2. Which are the activities done in the locality during wet and dry weather conditions?

			jerky movements could use any other alternative parts of their body or appropriate assistive technology to operate the digital devices. Learners with spinal curvature such as those with scoliosis, learners with spinal injury and those with floppiness could require appropriate positioning devices. For learners with epilepsy and those with visual difficulties, light intensity should be controlled on the digital devices. Learners with speech difficulties could observe and identify clouds by pointing or signing or writing or drawing. • Learners are guided to compare activities carried out during different weather conditions (drying, winnowing, flying kites, growing crops, harvesting crops) • Learners use digital devices to observe and compare activities carried out during different weather conditions. (Apply the adaptations made in bullet 3 above here). **Project 1:** In groups, learners are guided to make weather clock to record changes of weather. **Project 2**: Learners are guided to develop a weather chart for recording changes of weather on a daily basis.	

<table>
<tr><td colspan="2">Core competencies to be developed:
• Digital literacy as they search for information about other conditions of weather.
• Critical thinking as learners think of activities which can be done during different weather conditions.
• Creativity and imagination as learners fill the weather chart and make predictions</td></tr>
<tr><td>Links to pertinent and contemporary issues:
• Life skills when identifying different activities for different weather conditions.
• Environmental education while identifying conditions of weather</td><td>Links to Values:
• Responsibility by taking care of the environment.
• As they appreciate other people's opinion as learners work in groups.
• Unity when learners carry out tasks in groups.</td></tr>
<tr><td>Links to other learning areas:
• Social studies: as they learn on weather.
• Creative Art: as they make weather charts and weather clock.
• Agriculture: as they record farm activities during different weather conditions</td><td>Suggested Community Service Learning Activities:
• predicting weather with guidance of family members to identify activities to do at home and the clothes to wear</td></tr>
<tr><td>Suggested non-formal activities to support learning:
• Learners could observe and record different types of cloud outside during their free time during science club.
• Learners use weather charts and weather clocks to measure changes of weather in their school over a period of one term during science club.</td><td>Suggested modes of assessment:
Oral questions, checklists, observation, audio-visual recording, photo shooting</td></tr>
<tr><td colspan="2">Suggested Learning Resources:
Weather clock, weather chart, kites, textbooks, internet connectivity, pieces of cardboards/ cartons, tuck pins, adhesives such as glue or cello tape,3ply, cotton wool, water colours, charcoal dust, recorded videos, adapted digital devices such as computers, camera, smart phones; wheelchairs, scooter boards, callipers, crutches, head/mouth pointers, universal cuffs, page turners, book holders, prostheses</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person</td></tr>
</table>

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify bodies observed in the sky during day and night.	Identifies and describes bodies observed in the sky during day and night.	Identifies bodies observed in the sky during day and night.	Identifies some bodies observed in the sky during day and night.	Identifies the sun during the day.
Records types of clouds in the sky during the day.	Correctly and consistently record types of clouds in the sky during the day.	Records types of clouds in the sky during the day.	Occasionally records types of clouds in the sky during the day.	Records types of clouds in the sky during the day with directions.
Identify activities done during different weather conditions.	Identifies activities done during different weather conditions with ease.	Identifies activities done during different weather conditions.	Identifies some of the activities done during different weather conditions.	Identifies very few activities done during different weather conditions.
Make a weather clock.	Correctly and neatly makes a weather clock.	Makes a weather clock.	Makes a weather clock with assistance.	Has difficulties making a weather clock.
Make a weather chart	Precisely makes a weather chart.	Makes a weather chart.	Makes a weather chart with minimal guidance.	Makes a weather chart with a lot of assistance.
Appreciate the importance of weather conditions within the locality	Strongly appreciates the importance of weather conditions within the locality.	Appreciates the importance of weather conditions within the locality.	Appreciates for the importance of weather conditions within the locality with cues.	Appreciates for the importance of weather conditions within the locality only when reminded.

LIST OF NON-FORMAL ACTIVITIES AND LEARNING RESOURCES

No	Strand	Sub strand	Sub-sub strand	Suggested Non-formal Activities	Suggested learning resources
1	**Living things**	**Plants**	Characteristics of Plants	Learners visit a forest in the locality to observe assorted trees. Learners prepare tree nurseries and watch and record plants grow in the school compound	Protective clothing, gloves, forceps, goggles, tongs, overcoats, videos, digital devices, internet, textbooks, tree nurseries, real assorted plants
		Animals	Characteristic of Animals	Learners visit and observe animals in the locality, collect animal waste, identify and collect samples of the food they eat	Gloves, forceps, goggles, tongs, overcoats, videos, digital devices, internet, textbooks, assorted animals
		Human body	Teeth	Learners to look at other's teeth and identify the four types of teeth. Learners to draw and model the types of teeth	Sugar cane, carrots, fruits, tubers
2	**Environment**	**Pollution in the environment**	Air pollution	Learners to establish the difference between clean and polluted air in the environment. Digging of pits for litter disposal. Plating of trees in the school compound to clean the air	Dust masks, goggles, overcoats, piece of white cloth, digital devices, internet, textbooks
			Water pollution	Learners visit the school kitchen, bathrooms or sewage. They explain the differences between and water from the	Gumboots, gloves, digital devices, internet, textbooks

No	Strand	Sub strand	Sub-sub strand	Suggested Non-formal Activities	Suggested learning resources
				school tank, or from the water taps They prepare trenches to drain dirty water in the school. They clean gutters of their classrooms to harvest clean water.	
3	**Digital Technology**	**Digital devices**	Digital devices	Learners assemble all the school computers in the school computer laboratory and test them to confirm that they are working	Computers, tablets, I pads, laptop, radios, TV, mobile phone, cameras, internet, textbooks
			Coding	Learners are guided to fill the puzzle in the children's pull out of the local newspapers. Learners to practice coding games on the play station in the school computer	Prototypes, Computers, tablets, iPads, laptop, radios, TV, mobile phones, cameras, internet, textbooks, newspapers
4	**Matter**	**States of matter**	Understanding matter	Learners to put water in a bucket, fill the same bucket with soil and balloons inflated with air. Learners then compare the 3 states of matter in terms of their shape, volume and mass	Filling containers with pebbles, soil and stones, balloons, digital devices, internet.
		Properties of Matter	Floating and sinking	Learners put water in a drum in the school compound and collect [illegible]rted materials to test	Rubber tubes, wood or plastics, plasticine, bottle tops, digital devices,

No	Strand	Sub strand	Sub-sub strand	Suggested Non-formal Activities	Suggested learning resources
				whether they sink or float in the water	
5	**Force and Energy**	**Force**	Force and its Effects	Learners to practice tug of war in the field to demonstrate force and its effects	Wheel barrow, tug of war rope, a hand-cart, ox cart, a bicycle, digital devices, internet, and assorted objects.
		Energy	Sound energy	Learners create an empty classroom and practice reflection of sound (echo)	Sound producing instrument, textbooks, internet, digital devices.
			Light energy	Learners drill holes through 3 cardboards, arrange them in line then shine a candle light at the hole of one carton at night to show light travels in a straight line Learners use a torch at night to show that light travels in a straight line	Transparent, translucent or opaque objects, textbooks, internet, digital devices, card boards, source of light such as a torch.
			Heat energy	Learners use metal rod with candle wax fitted at different	Good and bad conductors of heat, digital devices,

No	Strand	Sub strand	Sub-sub strand	Suggested Non-formal Activities	Suggested learning resources
				Learners make fireless cookers and use it to keep their packed lunch warm	wooden bars, and plastic materials.
		Machines	Levers	Learners go out to the field and demonstrate levers by using a wooden bar to roll a drum full of water from one point to another	See saw, beam balance, wheel barrow, spade, spoon, fishing rod and scissors, textbooks, digital devices, internet.
6	**Earth and Space**	**Weather and sky**	Weather conditions	Learners use weather charts and weather clocks to measure changes of weather in the school over a period of one term	Weather clock, weather chart, textbooks, internet, and digital devices.

AGRICULTURE

ESSENCE STATEMENT

Kenya requires competent human resource for its agro-based economy. Agriculture as a learning area will build on competencies introduced in lower primary Early Years Education under environmental activities in an effort to contribute to human resource development. Learning in this area will involve practical and experiential learning activities to develop applicable competences for sustainable agriculture. The curriculum will focus on developing skills for production of indigenous and exotic crops and domestic animals through innovative agricultural practices. It will also encourage sustainable use of resources enhance food security. The acquired knowledge, skills and attitudes will form a foundation for development of agricultural competencies for lower secondary and beyond.

GENERAL LEARNING OUTCOMES

By the end of the course, the learner should be able to:

1. Participate actively in agricultural activities for environmental conservation.
2. Use scarce agriculture resources through innovative practices to contribute towards food security.
3. Develop appropriate skills in rearing of small domestic animals as an agricultural enterprise for self-sustainability and economic development.
4. To apply technological skills, digital and media resources for enhancing practically sustainable agricultural practices.
5. To appreciate agriculture as a worthy niche for hobby, career development, further education and training.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
1.0 CONSERVING OUR ENVIRONMENT	**1.1 Soil** (9 lessons) **1.1.1. Soil particles**	By the end of the sub-strand the learner should be able to: a) distinguish types of soil based on particle sizes using sieves of different pore sizes; b) investigate the ability of different types of soil to hold water using porous containers; c) compare particle sizes of soil to its ability to hold water; d) develop curiosity in investigating physical properties of different types of soil.	• Learners could collect soil samples from their local environment. Learners with mobility and those with manipulation difficulties could use alternative functioning parts of the body or appropriate assistive devices or be assisted by peers or teacher aide or teacher. Safety precautions could be observed for learners with asthma against cold and dust. Learners with brittle bones and those with muscular dystrophy could be allowed to perform according to ability level tasks. • In purposive groups or pairs, learners could conduct an experiment to observe particle sizes of different soils (sand, clay and loam) using sieves of different pore sizes. (Adaptations made in 1 above apply here and in the subsequent activities for learners with mobility difficulties, muscular dystrophy and those with brittle bones). • In purposive groups or pairs, learners could share experiences on observations	1. How can we determine the ability of different soils to hold water?

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			made in the experiment on particle sizes of different soils. Learners with speech difficulties could use residual speech or be lip read or point or sign or type or nod or use multipurpose communication board or be allowed more time to share their views. (Apply this adaptation in all the subsequent activities where the use of speech is required under this sub-strand). • In purposive groups or pairs, learners could conduct an experiment to observe the ability of soils to hold water (sand, clay and loam) using porous containers. • In purposive groups or pairs learners could share experiences on observations made in the experiment on ability of soil to hold water. • In purposive groups or pairs, learners could relate particle sizes to ability of soil to hold water.	

Strands	Sub-strands	Specific learning outcomes	Suggested learning experience	Key inquiry question
	1.1.2 Uses of soil in Farming	By the end of the sub-strand the learner should be able to: a) compare the ability of different soils to hold water to their uses in farming; b) explain the uses of sand, loam and clay in farming; c) appreciate the relationship between the structures of clay, sand and loam to their uses.	• Learners could visit nearby farms and explore the uses of different types of soil in relation to their ability to hold water. Learners with mobility difficulties could use appropriate assistive devices like wheelchairs, crutches, calipers to move to the farms with or without assistance from peers or teacher aide or teacher. Learners with speech difficulties could use residual speech or sign or type or write or use a multipurpose communication board or be allowed more time to express own views. (Apply these adaptations in all the subsequent activities where movement and speech are involved under this sub-strand). • Learners could watch a video clip on crops growing on different types of soil. Light intensity could be controlled/moderated for learners with epilepsy. • In purposive groups or pairs, learners could discuss the uses of soil in farming.	1. How can we use sand, clay and loam soils in farming?

	1.1.3 Compost manure	By the end of the sub-strand the learner should be able to: a) identify suitable materials for making compost manure; b) prepare compost manure by heap method; c) explain the meaning of compost manure; d) appreciate the importance of compost manure in farming.	• Learners could observe stimulus materials such as video, photos or pictures on preparation and use of compost manure. Light intensity (glare) could be controlled/moderated for learners with epilepsy. • Learners could collect suitable materials for making compost manure in their environment. Learners with mobility and those with manipulation difficulties could use alternative functional parts of the body or appropriate assistive devices or be assisted by peers or teacher aide or teacher. Learners with brittle bones and those with muscular dystrophy could be allowed to perform lighter tasks as per their level of ability. • In purposive groups or pairs, learners could prepare compost manure using heap method. • In purposive groups or pairs, learners could discuss the meaning of compost manure. • Learners could collaborate with their parents or guardians to make compost	

			manure for use in their farms or kitchen gardens.	

Core competencies to be developed:

- **Communication and collaboration** will be developed as learners work and share in groups.
- **Critical thinking and problem solving** will be developed as learners determine organic wastes and use it to improve soil fertility.

Links to pertinent and contemporary issues: • **Social Economic Issues: Environmental Awareness:** This is developed as learners use soil as a resource in the environment and organic wastes as useful products in agriculture.	**Core values:** • **Unity** is nurtured as learners work in groups.
Links to other learning areas: • **Science and technology:** as the learners carry out experiments. • **Mathematics:** as the learners take measurements.	**Suggested community service learning activities:** • Learners could collaborate with their parents or guardians to make compost manure for use in their farms or kitchen gardens.
Suggested non-formal activities to support learning: • Learners make compost manure with peers in 4k club; • Learners take photos of different soil types in school.	**Suggested modes of assessment:** Oral questions and answers, teacher made assessment, observation, checklist,

Suggested learning resources: Different types of soils, adapted containers, water, wheelchairs, calipers, crutches, prosthesis.

Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person.

Assessment rubric				
Indicator	**Exceeding expectations**	**Meeting expectation**	**Approaching expectation**	**Below expectation**
Distinguishing soil types based on particle sizes	Consistently and correctly determines types of soil based on particle sizes.	Correctly determines types of soil based on particle sizes	Sometimes determines types of soil based on particle sizes.	The learner has difficulty in determining types of

				soil based on particle sizes.
Ability to investigate water holding capacity of different soil types	Consistently and correctly determines water holding capacity of different soil types.	Correctly determines water holding capacity of different soil types.	Sometimes determines water holding capacity of different soil types.	The learner has difficulty in determining water holding capacity of different soil types.
Ability to relate particle sizes to water holding capacity of different soils	Consistently and correctly relates particle sizes to water holding capacity of different soils.	Correctly relates particle sizes to water holding capacity of different soils.	Sometimes relates particle sizes to water holding capacity of different soils.	The learner has difficulty in relating particle sizes to water holding capacity of different soils.
Relating different types of soils to their uses	Consistently and correctly relates different types of soil to their uses.	Correctly relates different types of soils to their uses.	Sometimes relates different types of soils to their uses.	The learner has difficulty in relating different types of soils to their uses.
Choice of suitable materials for making compost manure	Consistently and correctly chooses suitable materials for making compost manure.	Correctly chooses suitable materials for making compost manure.	Sometimes chooses suitable materials for making compost manure.	The learner has difficulty in choosing suitable materials for making compost manure.
Procedure for making compost using heap method	Consistently and correctly applies the procedure for making compost using heap method.	Correctly applies the procedure for making compost using heap method.	Sometimes applies the procedure for making compost using heap method.	The learner has difficulty in applying the procedure for making compost using heap method.
Participation in making compost manure	Consistently and actively participates in making compost manure.	Actively participates in making compost manure.	Sometimes participates in making compost manure.	The learner less participates in making compost manure.

Strands	Sub-strands	Specific learning outcomes	Suggested learning experiences	Key inquiry question
	1.2. Water (5 lessons) **1.2.1 Uses of water in farming**	By the end of the sub-strand the learner should be able to: a) participate in watering plants and animals in the immediate environment; b) identify different uses of water in farming; c) appreciate the importance of water in farming.	• In purposive groups or pairs, learners could participate in various age-based agricultural-related uses of water in the school such as watering flower beds, plants, seedbeds and watering animals. Safety precaution measures could be observed for learners with epilepsy and those with asthma against triggers. • Learners could visit the neighbouring farms to observe how water is used for farming purposes. Learners with mobility and those with manipulation difficulties could use alternative functioning parts of the body or appropriate assistive devices. • Learner could observe a video clip on uses of water in the farm. Light intensity could be controlled/moderated for learners with epilepsy • In purposive groups or pairs, learners could brainstorm or share experiences on uses of water in the farm for agricultural activities. Learners with speech difficulties could	1. What are the uses of water in the farm?

			communication board or be allowed more time to express self.	
	1.2.2 Water conservation in farming	By the end of the sub-strand the learner should be able to: a) carry out drip irrigation to water plants in the school compound; b) describe irrigation drip irrigation as a way of conserving water; c) appreciate use of drip irrigation in conserving water in the farm.	• Learners could watch a video clip on irrigation of crops through drip irrigation Light intensity should be controlled/moderated for learners with epilepsy. • In purposive groups or pairs, learners could carry out drip irrigation in school using bottles. Learners with brittle bones and those with muscular dystrophy could perform lighter tasks according to their ability level. Safety precautions to be observed for learners with epilepsy and asthma against triggers like water and cold respectively. (Apply these adaptations in all activities which involve mobility, manipulation and the use of water under this sub-strand). • In purposive groups or pairs, learners could carry out drip irrigation in the school using a 5 to 10-metre-long perforated plastic pipe.	1. What are the different ways in which drip irrigation is used to conserve water in farming? 2. What is drip irrigation?

Assessment Rubric

			• In purposive groups, learners discuss meaning and innovative ways of drip irrigation Learners with speech difficulties could use residual speech or sign or nod or use multipurpose communication board. • Learners could collaborate with their parents or guardians to adopt drip irrigation in their gardening practices at home.	

Core competencies to be developed: Communication and collaboration: This will be developed as learners work in groups during irrigation activities.
Critical thinking and problem solving: This will be developed as learners use locally available materials in conserving scarce water resources for irrigation.

Links to pertinent and contemporary issues: **Social Economic Issues**: **Environmental Awareness** This will be achieved as learners recognize water as a scarce resource in the environment. It will also be achieved as learners re-use waste bottles in drip irrigation.	**Core Values:** • **Unity** is nurtured as learners work and relate in groups**.** • **Responsibility** is developed as learners care for plants in group activities.
Links to other learning areas: **Science and technology** as learners re-use waste bottles to carry out drip irrigation.	**Suggested community service learning activities:** Learners could work together with their parents or guardians to irrigate plants using drip irrigation method to conserve water.
Suggested non-formal activities to support learning: Learners could participate in watering plants at school.	**Suggested mode of assessment:** Question and answer, observation, checklist, audio-visual recording

Suggested learning resources: bottles, plastic pipes, water, adapted containers, wheelchairs, crutches, calipers, prosthesis

Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person.

Indicator	Exceeding expectations	Meeting expectations	Approaching expectations	Below expectation
Participation in watering plants and domestic animals	The learner is able to participate in watering plants and animals in the immediate environment consistently.	The learner is able to participate in watering plants and animals in the immediate environment.	The learner is able to participate in watering plants and animals in the immediate environment with minimal guidance.	The learner has difficulty in participating in watering plants and animals in the immediate environment.
Ability to identify different uses of water in farming	The learner is able to identify different uses of water in the farm and assist others.	The learner is able to identify different uses of water in the farm.	The learner is able to identify different uses of water in the farm with prompts.	The learner has difficulty in identifying different uses of water in the farm.
Ability to use drip irrigation	The learner is able to consistently and accurately demonstrate drip irrigation using bottle and perforated plastic pipes.	The learner is able to demonstrate drip irrigation using bottle and perforated plastic pipes.	The learner is able to demonstrate drip irrigation using bottle and perforated plastic pipes with some assistance.	The learner has difficulty in demonstrating drip irrigation using bottle and perforated plastic pipes.

Assessment rubric

Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Ability to identify small wild animals	The learner is able to identify and draw small wild animals that destroy crops and farm animals.	The learner is able to identify small wild animals that destroy crops and domestic animals.	The learner is able to identify small wild animals that destroy crops and domestic animals with minimal assistance.	The learner has difficulty in identifying small wild animals that destroy crops and domestic animals.
Explains damages caused by small wild animals in the farm	The learner explains damages caused by small wild animals in the farm and gives control measures.	The learner explains damages caused by small wild animals in the farm.	The learner attempts explaining damages caused by small wild animals in the farm.	The learner has difficulty in explaining the damages caused by small wild animals in the farm.
Construct a scare crow using locally available materials	The learner is able to construct a scare crow using locally available materials and also guides peers.	The learner is able to construct a scare crow using locally available materials.	The learner attempts constructing a scare crow using locally available materials.	The learner less participates in constructing a scare crow using locally available materials.
Uses a scare crow to keep off small wild animals from the farm	The learner uses a scare crow to keep off small wild animals from the farm and guides peers in installation.	The learner uses a scare crow to keep off small wild animals from the farm.	The learner attempts using a scare crow to keep off small wild animals from the farm.	The learner has difficulty in using a scare crow to keep off small wild animals from the farm.
Uses digital resources to acquire information on small wild animals	The learner uses digital resources to acquire information on small wild animals and also guides peers.	The learner uses digital resources to acquire information on small wild animals.	The learner attempts using digital resources to acquire information on small wild animals.	The learner has difficulty in using digital resources to acquire information on small wild animals.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
	1.4. Growing Fruits trees (14 lessons) **1.4.1 Fruit Seed Collection**	By the end of the sub-strand the learner should be able to: a) identify places where fruit tree seeds could be obtained; b) collect fruit tree seeds from the local environment.	• In purposive groups or pairs, learners could suggest various places where seeds of fruit trees such as guava and tree tomato could be obtained. Learners with speech difficulties could use residual speech or be lip read or sign or type or write or use a multipurpose communication board or allowed more time to express own views. (Apply these adaptations in activity 2 below for learners with speech difficulties). • With help of the parents or guardians, learners could collect seeds of fruits such as guava and tree tomato. Learners with mobility and those with manipulation difficulties could use alternatives functional parts of the body, use appropriate assistive devices like wheelchairs, crutches or head/ mouth pointers respectively or be assisted by peers or teacher aide, or teacher to perform given tasks.	Where could we collect fruit seeds from?
	1.4.2 Fruit Seed Preparation	By the end of the sub-strand the learner should be able to: a) prepare fruit seeds for planting	• Learners could extract seeds from the fruits such as guava and tree tomato using appropriate means. Learners with mobility and those with manipulation	How are fruit seeds prepared for planting?

		b) appreciate the importance of preparing seeds for planting	difficulties could use alternative functioning parts of the body or appropriate assistive devices or be assisted by peers or teacher aide, or teacher to move. Safety precaution could be observed for learners with epilepsy against triggers like water and those with asthma against strong scents or cold. (Apply these adaptations in all the subsequent activities which involve manipulation, use of digital devices, movement, strong scents, fumes or water under this sub-strand). • Learners could clean the extracted seeds in water. • Learners could sort bad seeds for disposal and retain the good seeds. • Learners appropriately sun-dry the good clean seeds and protect them from birds.	
	1.4.3 Fruit Tree Nursery Bed	By the end of the sub-strand the learner should be able to: a) prepare a nursery bed for establishing fruit seedlings; b) sow seeds into a nursery bed; c) manage a fruit tree nursery bed up to transplanting;	• In purposive groups or pairs, learners could select suitable site for establishing a fruit tree nursery bed (container nursery or ground nursery bed) • In purposive groups or pairs, learners to prepare and set up the nursery bed. Learners with mobility and those with manipulation difficulties could	1. How are fruit seeds established in a nursery?

		d) select fruit tree seedlings for sale and transplanting purposes; e) sell food seedlings to earn income.	use alternative functioning parts of the body or appropriate assistive devices or be assisted by peers or teacher aide, or teacher. Safety precaution could be observed for learners with epilepsy against triggers like water and those with asthma against strong scents or cold. (Apply these adaptations in all the subsequent activities which involve manipulation, use of digital devices, movement, strong scents, fumes or water under this sub-strand). • In purposive groups or pairs, learners could sow the seeds into the nursery bed such as guava and tree tomato. • In purposive groups or pairs, learners could care for fruit seedlings by carrying out practices such as mulching, watering, thinning and weeding in the nursery bed. • Learners to select appropriate fruit tree seedlings for the purpose of sale and transplanting. • Learners to sell surplus fruit tree seedlings to school fraternity, parents and neighbouring community.	

			• In class, learners discuss and appropriately manage money obtained from sale of fruit tree seedlings.	
	1.4.4 Transplanting	By the end of the sub-strand the learner should be able to: a) prepare seedlings for transplanting; b) transplant the seedlings to the seedbed.	• In purposive groups or pairs, learners could prepare seedlings for transplanting (reduce watering, remove shade) Learners with mobility and those with manipulation difficulties could use alternative functioning parts of the body or appropriate assistive technology or be assisted by peers or teacher aide, or teacher to move. Safety precaution could be observed for learners with epilepsy against triggers like water and those with asthma against strong scents or cold. (Apply these adaptations in all the subsequent activities which involve manipulation, use of digital devices, movement, strong scents, fumes or water under this sub-strand). • In purposive groups or pairs, learners to prepare planting holes. • Learners could transplant the seedlings from the nursery bed to the field.	1. How can we prepare fruit seedlings for transplanting ? 2. How are fruit seedlings transplanted from the nursery?

	1.4.5 Care for Young Fruit Trees	By the end of the sub-strand the learner should be able to: a) protect the fruit tree seedlings from damage; b) water the fruit tree seedlings to supplement moisture; c) apply mulch to the fruit tree seedlings to conserve water; d) carry out weeding for the seedlings.	• In purposive groups or pairs, learners could construct shades to protect the fruit tree seedlings from damages. Learners with mobility and those with manipulation difficulties could use alternative functioning parts of their body or appropriate assistive devices or be assisted by peers or teacher aide, or teacher. Safety precaution should be observed for learners with epilepsy against triggers like water and those with asthma against strong scents or cold. (Apply these adaptations in all the subsequent activities which involve manipulation, use of digital devices, movement, strong scents, fumes or water under this sub-strand). • In purposive groups or pairs, learners could take turns to water the seedlings using drip irrigation method to conserve water. • In purposive groups or pairs, learners could apply mulch material to the seedlings to conserve moisture • Learners could weed for the growing seedlings. • Learners could engage their parents or guardians and th...	How can we take care of fruit seedlings after transplanting?

			community members by supplying surplus fruit tree seedlings.	

Core competencies to be developed:

- **Communication and collaboration:** This will be developed as learners share and consult on tasks in growing fruits.
- **Self-efficacy:** This will be developed as learners conduct selected activities in the project and earning income from sales of fruit tree seedlings.

Links to pertinent and contemporary issues: • **Life skills issues: The skills of knowing and living with others:** This is achieved as learners work and interact in groups or pairs. • **Social economic issues:** **Environmental awareness**: as learners plant trees to conserve the environment.	**Core Values:** • **Respect** is developed and nurtured as learners express themselves and respect peers' opinions; • **Responsibility** is developed as learners care for young fruit trees.
Links to other learning areas: **English** is enhanced as learners communicate with each other and express themselves during learning experiences.	**Suggested community service-learning activities:** Learners could plant fruit trees seedlings with someone at home.
Suggested non-formal activities to support learning: Learners could visit an Agricultural show to observe ways of caring for young fruit trees.	**Suggested modes of assessment:** Question and answer, observation, teacher made assessment, photo shooting, audio-visual recording

Suggested learning resources:
Water, watering cans, adapted containers of different sizes, jembe (hoes), panga (machetes), sticks, pesticides (safety precaution to be observed), calipers, wheelchairs, crutches, prosthesis**,** appropriately adapted digital devices

Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person.

Assessment Rubric

Indicator	Exceeding expectations	Meeting expectations	Approaching expectation	Below expectation
Collection of fruit seeds	Appropriately and effectively collects fruit seeds.	Appropriately collects fruit seeds.	Sometimes collects fruit seeds.	Has difficulty in collecting fruit seeds.
Preparation of fruit seeds	Consistently and correctly applies the right procedure in preparing fruit seeds.	Correctly applies the right procedure in preparing fruit seeds.	Sometimes applies the right procedure in preparing fruit seeds.	Has difficulty in applying the right procedure in preparing fruit seeds.
Establishment of a nursery bed	Consistently and correctly applies the right procedure in establishing a fruit tree nursery bed.	Correctly applies the right procedure in establishing a fruit tree nursery bed.	Sometimes applies the right procedure in establishing a fruit tree nursery bed.	Has difficulty in applying the right procedure in establishing a fruit tree nursery bed.
Taking care of fruit tree seedlings in a nursery bed	Consistently and correctly takes care of fruit tree seedlings in a nursery bed.	Correctly takes care of fruit tree seedlings in a nursery bed.	Sometimes takes care of fruit tree seedlings in a nursery bed.	Has difficulty in taking care of fruit tree seedlings in a nursery bed.
Selling fruit tree seedlings	Consistently and correctly identifies suitable fruit tree seedlings and offers them for sale.	Correctly identifies a suitable fruit tree seedling and offers them for sale.	Sometimes correctly identifies suitable fruit tree seedlings and offers them for sale.	Has difficulty in identifying suitable fruit tree seedlings and offers them for sale.

Ability to transplant fruit tree seedlings	Consistently and correctly transplants fruit tree seedlings.	Correctly transplants fruit tree seedlings.	Sometimes transplants fruit tree seedlings.	Has difficulty in transplanting fruit tree seedlings.
Ability to care for young fruit trees	Consistently and correctly takes care of young fruit trees.	Correctly takes care of young fruit trees.	Sometimes takes care of young fruit trees.	Has difficulty in taking care of young fruit trees.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
	1.5. Conservation Project: Edible crop Gardening (9 lessons)	By the end of the sub-strand the learner should be able to: a) demonstrate how to care for growing fruit trees in the environment; b) identify right stage for harvesting fruits to avoid wastage; c) harvest fruits appropriately to reduce damages; d) apply the acquired skills to manage other fruit trees in school and the community; e) appreciate importance of consuming fruits for nutrition.	• In purposive groups or pairs, learners could take care of the established fruit trees such as guava and tree tomato by carrying out appropriate activities (watering, weeding, protection, manuring and removal of excess branches). Learners with brittle bones and those with muscular dystrophy could be allowed to perform lighter tasks according to their ability level. Safety precautions could be observed for learners with epilepsy and asthma against triggers like water, chemical fumes and cold respectively. (Apply these adaptations in all the subsequent activities which involve mobility, manipulation, use of chemicals and the use of water under this sub-strand). • In purposive groups or pairs, learners could share experiences on how to identify a ripe fruit such as guava and tree tomato. Learners with speech difficulties could use residual speech or be lip read or sign or type or nod or write or use multipurpose	1. What activities are carried out in caring for fruit plants? 2. When are fruits ready for harvesting? 3. How are fruits harvested?

			communication board to express own opinion. • In purposive pairs or groups, learners could carry out harvesting of fruits such as guava and tree tomato. • Learners could apply acquired skills to assist parents or guardians in the activities for caring for fruit trees at home.	
	1.5. Conservation Project: Edible crop Gardening (9 lessons)	By the end of the sub-strand the learner should be able to: a) demonstrate how to care for growing fruit trees in the environment; b) identify right stage for harvesting fruits to avoid wastage; c) harvest fruits appropriately to reduce damages; d) apply the acquired skills to manage other fruit trees in school and the community; e) appreciate importance of consuming fruits for nutrition.	• In purposive groups or pairs, learners could take care of the established fruit trees such as guava and tree tomato by carrying out appropriate activities (watering, weeding, protection, manuring and removal of excess branches). Learners with brittle bones and those with muscular dystrophy could be allowed to perform lighter tasks according to their ability level. Safety precautions could be observed for learners with epilepsy and asthma against triggers like water, chemical fumes and cold respectively. (Apply these adaptations in all the subsequent activities which involve mobility, manipulation, use of chemicals and the use of water under this sub-strand).	4. What activities are carried out in caring for fruit plants? 5. When are fruits ready for harvesting? 6. How are fruits harvested?

			• In purposive groups or pairs, learners could share experiences on how to identify a ripe fruit such as guava and tree tomato. Learners with speech difficulties could use residual speech or be lip read or sign or type or nod or write or use multipurpose communication board to express own opinion. • In purposive pairs or groups, learners could carry out harvesting of fruits such as guava and tree tomato. • Learners could apply acquired skills to assist parents or guardians in the activities for caring for fruit trees at home.	

Core competencies to be developed:

- **Communication and collaboration:** This will be developed as learners work in group or pair activities while taking care of growing fruits;
- **Self-efficacy:** This will be enhanced as learners produce own food (fruits);
- **Critical thinking and problem solving:** This will be developed as learners select the fruit trees suitable for their environment.

Links to pertinent and contemporary issues:

- **Social economic issues:**

Financial literacy is enhanced as learners harvest fruits like tomatoes and sell them to the members of school and or home community.

- **Health Related Issues: Lifestyle diseases** is enhanced [illegible]ers take fruits they harvest to supplement diet.

Core values:

- **Love** is nurtured as learners work, assist and encourage each other in groups and pairs.
- **Responsibility** is nurtured as learners show dedication and commitment in preparing, sowing, transplanting [illegible] yo[illegible]

Links to other learning areas: • **Home Science** in preparation of fruits for consumption and nutritional value of fruits.	**Suggested community service learning activities:** • Learners could assist parents or guardians in the activities for planting and caring for fruit trees at home.
Suggested non-formal activities to support learning: • Learners could attend an Agricultural show and to get more information on establishing an edible crop garden. • Learners could listen to a speech by resource person on establishing and caring for an orchard.	**Suggested modes of assessment:** Question and answer, observation, teacher made assessment, audio recording, project work, photo shooting
Suggested learning resources: Water, adapted containers, jembe (hoes), panga (machetes), sticks, pesticides (safety precaution to be observed), calipers, wheelchairs, crutches, prosthesis, digital devices like cameras, laptops, tablets	
Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person	

Assessment rubric

Indicator	Exceeding expectations	Meeting expectations	Approaching expectations	Below expectations
Ability to care for established fruit trees	Consistently and correctly takes care of established fruit trees.	Correctly takes care of established fruit trees.	Sometimes takes care of established fruit trees.	Has difficulty in taking care of established fruit trees.
Ability to harvest fruits	Appropriately and correctly harvests fruits at the right stage.	Correctly harvests fruits at the right stage	Sometimes harvests fruits at the right stage	Has difficulty in harvesting fruits at the right stage.
Participation in edible crop gardening activities	Consistently and actively participates in edible crop gardening activities.	Actively participates in edible crop gardening activities.	Sometimes participates in edible crop gardening activities.	Has difficulty in participating in edible crop gardening activities.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
2.0 DOMESTIC ANIMALS	**2.1. Domestic Animals and their Uses** (8 lessons)	By the end of the sub-strand the learner should be able to: a) identify specific types of domestic animals in the community; b) distinguish between a male and a female domestic animal; c) relate various domestic animals to their uses; d) use digital devices to acquire information on types of domestic animals, store photos on types of domestic animals; e) appreciate the importance of domestic animals to human beings.	• Learners could visit the neighbouring farms to explore various types of domestic animals and their uses and also distinguish male from female animals. Learners with mobility difficulties could use alternative functional parts of their body or appropriate assistive technology or be assisted by peers or teacher aide, or teacher to perform given tasks. Safety precautions could be observed for learners with epilepsy and asthma against triggers like water and heights or strong scents and cold respectively; as well as those with brittle bones to avoid injuries. (Apply these adaptations in all the subsequent activities which involve mobility, vigorous activities and exposure to triggers to epilepsy and or asthma under this sub-strand). • In purposive groups or pairs, learners could share experiences on the types of animals found in their community and their uses; and	1. What domestic animals are kept by farmers? 2. What are the uses of domestic animals?

		also, to distinguish male and female animals. Learners with speech difficulties could use residual speech or be lip read or sign or write or type or nod or use multipurpose communication board or be allowed more time or be assisted by peers or teacher aide or teacher to express their views. (Apply these adaptations in all the subsequent activities which require the use of speech). • Learners could watch a video clip on various types of domestic animals and uses. Light intensity could be controlled/moderated for learners with epilepsy. (Apply these adaptations in all the subsequent activities which require the use of, recording and operation of digital devices under this sub-strand). • In purposive groups or pairs, learners could match the domestic animals to their uses (cattle, sheep, goat and poultry). • Learners could play and share games on domestic animals and their uses. Safety precautions could be taken for learners with	

		brittle bones and muscular dystrophy by giving them less vigorous activities. • Learners could sketch diagrams of domestic animals explored in the activities. • In purposive pairs, learners could use digital devices that have appropriate software to search for information on types of domestic animals. • In purposive groups, learners could select and store photos on types of domestic animals using appropriate methods such as digital or physical photo albums. • Learners could consult a resource person such as an Information and Communication Technology (ICT) specialist to guide in various methods of storing photos. • Individual learners to make presentations on photos acquired and stored.	

Core competencies to be developed:

- **Digital literacy:** This will be developed as learners search and store photos and information on domestic animals from adapted digital devices.
- **Communication and collaboration:** This will be developed as learners share and consult on access and storage procedures.
- **Self-efficacy:** This will be developed as learners present acquired information and photos to the class.

Links to pertinent and contemporary issues:	**Link to Values:**

• **Social economic issues: Animal welfare** is developed as learners appreciate the importance of domestic animals and their uses to humans;	• **Unity** is nurtured as learners work together in group activities. • **Patriotism** is developed as learners appreciate the importance of domestic animals and how they are used in their varied cultural practices. • **Responsibility** is nurtured as learners distinguish between male and female animals and play animal games.
Links to other learning areas: • **Science and technology** is enhanced as learners engage in playing digital games and searching information on animals; • **Creative art** is enhanced as learners make sketches of animals; • **Language** is enhanced as learners name male and female animals.	**Suggested community service learning activities:** • Learners could assist parents and guardians in caring for animals at home.
Suggested non-formal activities to support learning: • Learners distinguish between male and female animals found in the school compound; • Learners could draw farm animals during their free time.	**Suggested mode of assessment:** Question and answer, observation, written work, checklist, photo shooting, audio-visual recording
Suggested learning resources: Domestic animals, pictures of farm animals, masks, calipers, wheelchairs, crutches, prosthesis, adapted pens/ pencils, pen/ pencil grips, multipurpose stamps	
Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person	

Assessment Rubric

Indicator	Exceeding expectations	Meeting expectations	Approaching expectations	Below expectations
Identify specific types of domestic animals and	Identifies specific types of domestic animals and distinguishes male and	Identifies specific types of domestic	Identifies specific types of domestic animals and	Identifies specific types of domestic animals but has

distinguish male and female.	female with a lot of ease.	animals and distinguishes male and female.	distinguishes male and female with prompts.	difficulties distinguishing male and female.
Relate various domestic animals with their uses	Relates various domestic animals and with their uses with ease.	Relates various domestic animals with their uses.	Relates various domestic animals with their uses with cues.	Has difficulty relating various domestic animals with their uses.
Use digital devices to acquire information and stores photos on types of domestic animals	Uses digital devices to acquire information and store photos on types of domestic animals and volunteers to assist others.	Uses digital devices to acquire information and store photos on types of domestic animals.	Uses digital devices to acquire information and store photos on types of domestic animals with prompts.	Uses digital devices to acquire information but has difficulty in storing photos on types of domestic animals.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
3.0 GARDENING PRACTICES	**3.1. Crops for Gardening (6 lessons)** **3.1.1 Vegetables**	By the end of the sub-strand the learner should be able to: a) give the meaning of a vegetable crop; b) identify the main vegetable crops grown in Kenya; c) classify vegetable crops according to the part eaten; d) appreciate the importance of vegetable crops in the food we eat.	• Learners could watch a video clip or visit a farm to explore types of vegetable grown such as carrots, spinach and tomatoes. Learners with mobility difficulties could use alternative functional parts of the body, use appropriate assistive technology like wheelchairs, , scooter boards, crutches, or be assisted by peers or teacher aide, or teacher. Safety precautions could be observed for learners with epilepsy and asthma against triggers like bright light, water and heights or strong scents and cold respectively; as well as those with brittle bones to avoid injuries. (Apply these adaptations in all the subsequent activities which involve mobility, vigorous activities and exposure to triggers to epilepsy and or asthma under this sub-strand). • In purposive pairs, learners could suggest the meaning of vegetable crops. • In purposive groups or pairs, learners could identify various vegetable crops grown in Kenya such as carrots, spinach, tomatoes.	1.What are vegetable crops? 2.How can we classify vegetable crops?

			• In purposive groups or pairs, learners could classify vegetable crops according to parts eaten such as leaves, roots, stems, fruits, seeds). • Learners could assist parents or guardians in the activities which involve preparing vegetables for consumption.	
	3.1.2 Cereals	By the end of the sub-strand the learner should be able to: a) give the meaning of a cereal crop; b) identify main cereal crops grown in Kenya; c) develop a display of various types of cereal grains in the classroom; d) appreciate the importance of cereal crops in the food we eat.	• Learners could watch a video clip or visit a farm growing cereal crops such as wheat, maize and rice. Learners with mobility difficulties could use alternative functional parts of the body, use appropriate assistive devices, or be assisted by peers or teacher aide, or teacher. Safety precautions could be observed for learners with epilepsy and asthma against triggers like bright light, water and heights or strong scents and cold respectively; as well as those with brittle bones to avoid injuries. (Apply these adaptations in all the subsequent activities which involve mobility, vigorous activities and exposure to triggers to epilepsy and or asthma under this sub-strand). • In purposive groups or pairs, learners could suggest the meaning of cereal crops.	1. What are cereal crops? 2. Which cereal crops do you know?

			• In purposive groups or pairs, learners could identify various cereal crops grown in Kenya such as wheat, maize, rice by pointing or touching or gazing at or nodding or be lip read. • In purposive groups or pairs, learners could collect, mount and label cereal grains such as wheat, maize, rice on a manila paper for display. • Learners could assist parents or guardians in activities which involve preparing cereals for consumption.	
	3.1.3 Legumes	By the end of the sub-strand the learner should be able to: a) give the meaning of a legume crop; b) identify main legume crops grown in Kenya; c) develop a display of various types of legume seeds in the classroom; d) appreciate the importance of legume crops in the food we eat.	• Learners could watch a video or visit a farm growing legume such as beans, peas or green grams. Learners with mobility difficulties could use alternative functional parts of the body, use appropriate assistive devices, or be assisted by peers or teacher aide, or teacher. Safety precautions could be observed for learners with epilepsy and asthma against triggers like bright light, water and heights or strong scents and cold respectively; as well as those with brittle bones to avoid injuries. (Apply these adaptations in all the subsequent activities which involve mobility, vigorous activities and exposure to triggers	1. What are legume crops? 2. Which legume crops do you know?

			to epilepsy and or asthma under this sub-strand). • In purposive pairs or groups, learners could suggest the meaning of legume crops. Learners with speech difficulties could use residual speech or be lip read or sign or write or type or nod or use multipurpose communication board or be allowed more time or be assisted by peers or teacher aide or teacher to express their views. (Apply these adaptations in all the subsequent activities which require the use of speech). • In purposive groups or pairs, learners could identify various legume crops grown in Kenya such as beans, peas or green grams. • In purposive groups, learners could collect, mount and label legume seeds such as beans, peas or green grams on a manila paper for display. • Learners could assist parents or guardians in the activities which involve preparing legumes for consumption. • Learners could carry out an activity of matching crops to their respective categories (vegetables, cereals and legumes).	

<table>
<tr><td colspan="2">Core competencies to be developed:
Communication and collaboration: This will be developed as learners participate in group activities while classifying and identifying the vegetables, cereals and legumes.</td></tr>
<tr><td>Links to pertinent and contemporary issues:
Health related issues: Lifestyle diseases will be enhanced as learners take care of their nutritional needs through consumption of vegetables, cereals and legumes.</td><td>Core values:
• Unity is nurtured as learners relate and work together in groups;
• Responsibility is developed as learners grow selected crops.</td></tr>
<tr><td>Links to other learning areas:
Home Science is enhanced as learners identify the nutritional value of vegetables, cereals and legumes.</td><td>Suggested community service-learning activities:
Learners could assist parents or guardians in the activities which involve preparing vegetables, cereals and legumes for consumption.</td></tr>
<tr><td>Suggested non-formal activities to support learning:
• Learners could collect different types of cereal crops during their free time.
• Learners could identify the various vegetables grown in school.</td><td>Suggested mode of assessment:
Question and answer, observation, checklist, written exercise</td></tr>
<tr><td colspan="2">Suggested learning resources:
Assorted cereals, vegetables, legumes, manila papers, glue, strings, nails, hammer, masking tape, calipers, wheelchairs crutches, prosthesis, universal cuff, multipurpose stamp</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person</td></tr>
</table>

Assessment Rubric

Indicator	Exceeding expectations	Meeting expectations	Approaching expectations	Below expectations
Define and identify main vegetable crops grown in Kenya.	Defines and identify main vegetable crops grown in Kenya with a lot of ease.	Defines and identify main vegetable crops grown in Kenya.	Define and identify main vegetable crops grown in Kenya with prompts.	Defines but has challenges identifying main vegetable crops grown in Kenya.
Classify vegetable crops according to the part eaten.	Classifies vegetable crops according to the part eaten and volunteers to support others.	Classifies vegetable crops according to the part eaten.	Classifies vegetable crops according to the part eaten with assistance.	Experiences difficulty classifying vegetable crops according to the part eaten.
Define and identify cereal crops grown in Kenya.	Defines and identifies cereal crops grown in Kenya with a lot of ease.	Defines and identifies cereal crops grown in Kenya.	Defines and identifies cereal crops grown in Kenya with prompts.	Defines but has difficulty identifying cereal crops grown in Kenya.
Define and identify legume crops grown in Kenya.	Defines and identifies and draws legume crops grown in Kenya.	Defines and identifies legume crops grown in Kenya.	Defines and identifies legume crops grown in Kenya with cues.	Defines but experiences challenges identifying legume crops grown in Kenya.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
	3.2. **Selected Gardening Practices** (13 lessons) 3.2.1 Direct sowing of tiny seeds	By the end of the sub strand the learner should be able to: a) prepare a fine seedbed for crops with tiny seeds; b) sow tiny seeds directly into the seedbed.	• In purposive groups or pairs, learners could brainstorm on how crop with tiny seeds such as *carrots and sunflower* among others and how they can be grown in the locality. In this activity, learners to be guided to identify some tiny-seeded crops that are sown directly into the seedbed (*tiny-seeded crops that do not require transplanting*).Learners with speech difficulties could use residual speech or be lip read or sign or write or type or nod or use multipurpose communication board or be allowed more time or be assisted by peers or teacher aide or teacher to express their views. (Apply these adaptations in all the subsequent activities which require the use of speech under this sub-strand). • In purposive groups or pairs, learners to brainstorm on how the tiny seeds are sown in the seedbed. • Learners to watch a video clip on how to prepare a fine seedbed and sow tiny seeds such as *carrot or sunflower* seeds into the seedbed. Light intensity (glare) could be controlled/moderated on the digital devices for learners with epilepsy. (Apply these adaptations in all the subsequent activities which involve the use of digital devices under this sub-strand). • In purposive groups, learners prepare a suitable seedbed for sowing any crop with tiny seeds that they may opt for. The crop should be suitable for direct sowing. Learners with mobility and those with manipulation	1. How can we plant tiny seeds in a seedbed?

			difficulties could use alternative functional parts of the body, use appropriate assistive devices like wheelchairs, scooter boards, crutches, or be assisted by peers or teacher aide, or teacher. Safety precautions could be observed for learners with epilepsy and asthma against triggers like bright light, water and heights or strong scents and cold respectively; as well as those with brittle bones to avoid injuries. (Apply these adaptations in all the subsequent activities which involve mobility, manipulation, vigorous activities and exposure to triggers to epilepsy and or asthma under this sub-strand). • In purposive groups learners sow the tiny seeds in the prepared seedbed.	

	3.2.2 Care for tiny-seeded crops	By the end of the sub strand the learner should be able to: a) identify the practices to care for directly sown tiny-seeded crops in a seedbed; b) carry out caring practices for the seedbed; c) appreciate the value of caring for tiny-seeded crops in the seedbed.	• Learners to share experiences on appropriate gardening practices for a seedbed with directly sown tiny seeds such as *carrots and sunflower*. Learners with speech difficulties could use residual speech or be lip read or sign or write or type or nod or use multipurpose communication board or be allowed more time or be assisted by peers or teacher aide or teacher to express their views. • Learners to watch a video clip on gardening practices carried out on directly sown tiny seeds in a seedbed.	1. What care is needed for directly sown tiny-seed crop in a seedbed?

			Light intensity (glare) should be controlled/moderated on the digital devices for learners with epilepsy. • In purposive groups, learners to carry out gardening practices on the established tiny-seeded seedbed such as *mulching, watering, thinning and uprooting weeds.* (Safety precaution could be observed as learners work with pesticides). Learners with mobility and those with manipulation difficulties could use alternative functional parts of the body, use appropriate assistive technology or be assisted by peers or teacher aide or teacher.	
	3.2.3 Gardening Tools and Equipment	By the end of the sub strand the learner should be able to: a) identify appropriate tools and equipment used for gardening in a seedbed; b) demonstrate appropriate use of tools and equipment in gardening; c) practice safety measures when using gardening tools and equipment; d) clean the garden tools and equipment after use.	• In purposive groups, learners to suggest tools and equipment used for gardening in a seedbed for tiny-seeded crop. • Learners to watch a video clip on safe use and cleaning of gardening tools and equipment Light intensity (glare) should be controlled/moderated on the digital devices for learners with epilepsy. • Learners to use appropriate tools and equipment in gardening practices of a seedbed; learners with mobility and those with manipulation difficulties could use alternative functional parts of the body or use appropriate assistive technology like wheelchairs,	1. What appropriate tools and equipment are used in gardening practices for tiny-seeded crops? 2. What safety measures are observed when using garden tools and equipment? 3. How are garden tools and

			scooter boards, crutches or be assisted by peers or teacher aide or teacher. • Learners to observe safety measures in the use of tools and equipment. • In purposive groups, learners to clean the gardening tools and equipment after use. • Learners practice learnt skills for growing tiny-seeded crops and maintaining tools and equipment at home.	equipment maintained?

Core competencies to be developed:

- **Communication and collaboration:** This will be developed as learners work in group activities while gardening;
- **Critical thinking and problem solving:** This will be developed as learners participate in activities for nutritional supplement.
- **Self-efficacy:** This will be developed as learners give own views in the production of carrots.

Links to pertinent and contemporary issues: • **Social economic issues** **Safety and security:** Is enhanced as learners handle and use tools and equipment safely.	**Core values:** • **Responsibility** is enhanced as learners care for seedlings in groups. • **Unity** is nurtured as learners relate and work in groups.
Links to other learning areas: • **Home Science** is enhanced as learners discuss nutritional value of carrots with peers. • **Science and technology** is enhanced as learners practice the use and maintenance of tools and equipment.	**Suggested community service learning activities:** Learners could assist parents or guardians in the activities for growing carrots and maintaining tools and equipment.
Suggested non-formal activities to support learning: Learners could start their own tree nursery through the 4k club.	**Suggested mode of assessment:** Question and answer, Observation, checklist, written work, teacher made assessment, audio-visual recording, project work

Suggested learning resources: Carrot seeds, farm tools and equipment, pesticides, herbicides, (safety precaution to be observed), calipers, wheelchairs, crutches, prosthesis, adapted digital devices, scooter board,

Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person

Assessment rubric

Indicator	Exceeding expectations	Meeting expectations	Approaching expectations	Below expectations
Establishing suitable seedbed for a selected crop	Consistently and correctly establishes a suitable seedbed.	Correctly establishes a suitable seedbed.	Sometimes establishes a suitable seedbed.	Has difficulty in establishing a suitable seedbed.
Caring for crop in a seed bed	Consistently and correctly cares for crops in a seed bed.	Correctly cares for crops in a seed bed.	Sometimes cares for crops in a seed bed.	Has difficulty in caring for crops in a seed bed.
Appropriate use of tools and equipment	Consistently and responsibly demonstrates appropriate use of tools and equipment in gardening practices.	Responsibly demonstrates appropriate use of tools and equipment in gardening practices.	Sometimes demonstrates appropriate use of tools and equipment in gardening practices.	Has difficulty in demonstrating appropriate use of tools and equipment in gardening practices.
Cleaning of tools and equipment after use	Consistently and correctly cleans tools and equipment after use.	Correctly cleans tools and equipment after use.	Sometimes cleans tools and equipment after use.	Has difficulty in cleaning tools and equipment after use.

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
	3.3. Innovative Gardening Project (19 lessons) **3.3.1** Container gardening	By the end of the sub-strand the learner should be able to a) identify containers that can be used for innovative gardening; b) prepare container garden for sowing of seeds; c) sow seeds in a container garden; d) appreciate the importance of innovative container gardening.	• In purposive groups or pairs, learners could share experiences on how crops could be grown in places where there is little space for gardening. Learners with speech difficulties could use residual speech or be lip read or sign or write or type or nod or use multipurpose communication board or be allowed more time or be assisted by peers or teacher aide or teacher to express their views. (Apply these adaptations in all the subsequent activities which require the use of speech under this sub-strand). • Learners could watch or observe stimulus materials such as video clips, charts, pictures and photographs on container gardening practices showing various crops. Light intensity (glare) should be controlled/moderated on the digital devices for learners with epilepsy. (Apply these adaptations in all the subsequent activities which	1. How can we grow crops where there is little space for gardening?

			involve the use of digital devices under this sub-strand). • In purposive groups or pairs, learners could identify suitable containers to be used for container gardening. • In purposive groups or pairs, learners could discuss instances where container gardening can be used and appropriate places where they can be placed. • In purposive groups or pairs, learners could prepare container gardens such as tyres, plastic bottles, wooden boxes, buckets, and small jerricans for sowing carrots. Learners with mobility and those with manipulation difficulties could use mobility devices or be assisted by peers or teacher aide or teacher. Those with brittle bones and muscular dystrophy could be allowed to perform as per their ability. (Apply these adaptations in all the subsequent activities which involve manipulation and mobility under this sub-strand).	

			• In purposive group or pairs, learners could sow carrot seeds in the container gardens.	
	3.3.2 Care for Container Gardens	By the end of the sub strand, the learner should be able to: a) identify the caring practices for crops in a container garden; b) care for crops in a container garden; c) carry out harvesting of crop from a container garden; d) acquire information on container gardening practices; e) compile photos on innovative container gardening; f) sell outputs of the container gardens to earn income; g) appreciate importance of container gardening to food security, income generation and aesthetics.	• Learners share experiences on container gardening practices for a crop of their choice. *The crop should however be suitable for container gardening. Learners to be guided to select a suitable annual crop that grows within a period of one to three months.* Learners with speech difficulties could use residual speech or be lip read or sign or write or type or nod or use multipurpose communication board or be allowed more time or be assisted by peers or teacher aide or teacher. • Learners watch a video clip on container gardening practices carried out on crops such as *carrots* among others. Light intensity (glare) should be controlled/ moderated on the digital devices for learners with epilepsy. (Apply these adaptations in all the subsequent activities which	1. How can we care for container gardens? 2. How are crops in a container garden harvested?

			involve the use of digital devices under this sub-strand) • In purposive groups, learners carry out container gardening practices such as *mulching, watering, thinning, uprooting weeds, controlling pests, and removing diseased plants* on the innovative gardens. • In purposive groups, learners harvest the crop from the container garden and prepare them for consumption. • Learners use digital devices that have appropriate software to search for information on container gardening practices and innovative container gardens. • In purposive groups, learners share acquired information on innovative container gardens. • In purposive groups, learners take photos (photos with dates) on the various gardening practices they carry out on their project as a form of simple record keeping.	

			• In purposive groups, learners compile and store photos on gardening practices and container gardens using appropriate methods such as digital or physical photo albums. • Individual learners make presentations on photos taken and stored for their project. Learners with speech difficulties could use residual speech or be lip read or sign or write or type or nod or use multipurpose communication board or be allowed more time or be assisted by peers or teacher aide or teacher (Apply this adaption in all subsequent areas where speech is required). • Learners identify some crop output of the project and offer for sale to the school fraternity, parents and the neighbouring community. *The output should be in form of either harvested produce or crops in containers.* • Learners discuss and appropriately manage income from the sale of	

			project output to *satisfy identified needs* • Learners collaborate with parents or guardians to establish innovative container gardens at home.	

Core competencies to be developed:

- **Digital literacy:** This will be developed as learners search and store photos and information on innovative container gardening;
- **Communication and collaboration:** This will be developed as learners work in groups;
- **Critical thinking and problem solving:** This will be developed as learners participate in developing appropriate container gardens to solve land shortage problem;
- **Self-efficacy**: This will be developed as learners contribute to innovations and presentations.

Links to pertinent and contemporary issues: **Social economic issues** **Environmental awareness** is enhanced as learners use waste containers to grow crops; **Poverty eradication** is enhanced as learners engage in innovative gardening as a way of enhancing food security.	**Core values:** • **Respect** is nurtured as learners interact and share learning resources in project work. • **Responsibility** is nurtured as learners take care of seedlings and plants in nursery beds and seedbeds respectively.
Links to other learning areas: • **Home Science** is enhanced as learners brainstorm on the nutritional value of carrots; • **Science and technology** is enhanced as learners carry out innovative gardening activities; • **Mathematics** is enhanced as learners use measurements in container preparations.	**Suggested community service learning activities:** • Learners could collaborate with parents and guardians to establish innovative container gardens at home.
Suggested non-formal activities to support learning: • Learners could engage in establishing an innovative gardening project in the school.	**Suggested mode of assessment:** • Questions and answers, observation, project work, checklist, audio-visual recording, photo shooting
Suggested learning resources:	

Carrot seeds, adapted containers, water, farm tools and equipment, herbicides, pesticides (safety measures to be observed), soil, calipers, wheelchairs, crutches, prosthesis, internet connectivity devices, adapted digital devices
Other related service providers: Physiotherapists and Occupational Therapists, Teacher Aide, Resource Person

Assessment rubric

Indicator	Exceeding expectations	Meeting expectations	Approaching expectations	Below expectations
Preparation of suitable container gardens for sowing crops	Consistently and correctly prepares suitable container gardens for sowing crops	Correctly prepares suitable container gardens for sowing crops	Sometimes prepares suitable container gardens for sowing crops	Has difficulty in preparing suitable container gardens for sowing crops
Caring for crops in container garden	Consistently and correctly caring for crops in container gardens	Correctly caring for crops in container gardens	Sometimes caring for crops container gardens	Has difficulty in caring for crops in container gardens
Ability to harvest crops	Consistently and correctly harvests crops at the right stage	Correctly harvests crops at the right stage	Sometimes harvests crops at the right stage	Has difficulty in harvesting crops at the right stage
Identifying appropriate output for sale	Consistently and correctly identifies appropriate output for sale	Correctly identifies appropriate output for sale	Sometimes identifies appropriate output for sale	Has difficulty in identifying appropriate output for sale

HOME SCIENCE

ESSENCE STATEMENT

Home Science aims at equipping learners with knowledge, skills, attitudes and values which will help promote healthy living in terms of preparing and eating healthy foods, prevention of illnesses, ensuring comfort and safety in the home, observing personal hygiene and wise buying. In addition, the learner will be able to appreciate the physical changes which occur from childhood to adolescence. The learner will engage in practical activities such as shopping for the home, care of the home, cooking and service of food, food preservation, laundry work, sewing, knitting and crocheting. Home science will also strengthen the foundation for development of higher competencies in lower secondary.

LEARNING OUTCOMES FOR HOME SCIENCE

By the end of upper primary, the learner should be able to:

1. promote healthy living practices for the wellbeing of self and others
2. appreciate the needs of a child in promoting growth and development
3. plan, prepare and present meals to promote healthy living
4. preserve food using traditional and modern methods
5. choose, use and care for personal clothes and household articles in school and at home
6. make simple needlework items for enjoyment and entrepreneurial competencies
7. use resources appropriately at home and in school

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
1.0 HEALTHY PRACTICES	1.1 Play **(5 lessons)**	By the end of the sub-strand, the learner should be able to: a) name the various needs of a child for healthy development; b) identify different games played in their locality; c) identify play items for a child; d) list qualities to look for when choosing suitable play items for a child; e) make a play item using locally available materials; f) care for the play items for the safety of the child; g) appreciate the importance of rest after play.	• Learners name the needs of a child for healthy development (food, shelter, clothing, play and rest) using digital resources (pictures, video clips, and audios), charts, realia Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or be assisted through sound association by peers or sign or use multipurpose communication board, speech generating device or eye tracking devices to express their views. (Apply these adaptations in all subsequent activities where speech is involved under this strand). • Learners share experiences on the different games played in their locality. • Learners are guided to identify play items in their environment using adapted digital resources such as use of a large mouse, speech to text software, computers with expandable keyboards, charts and realia. Learners with	1. What are the needs of a child for healthy development? 2. Which play items within your locality are suitable for a child? 3. What are the qualities of a good play item for a child? 4. Which are the common accidents that occur during play among children? 5. What security challenges occur during play?

			manipulation difficulties such as those with amputation, missing limbs and cerebral palsy could use alternative parts of their bodies or appropriate assistive technology such as prosthesis, head/mouth pointers, universal cuffs among others to operate the digital devices. For learners with epilepsy and others with visual difficulties, control light steadiness and intensity (glare) on the digital devices. (Apply these adaptations where manipulation and use of digital devices is involved under this strand) • In purposive groups or pairs, learners discuss qualities of play items. • In purposive groups or pairs, learners make a play item using locally available materials. Learners with manipulation and motor difficulties could use alternative functional parts of the body or appropriate assistive technology to make the play items or be assisted by peers or teacher aide or teacher.	

			• Using video clips, stories, charts and pictures, learners discuss safety during play. • Using video clips and stories, learners share experiences on issues to do with security of children during play. • Watch video clips on security issues of children during play • Learners play and observe safety during play. For learners with gross motor difficulties, adapt play materials such as having larger and lighter balls, larger and lighter batons; reduced size of field of play, lowered goal bars and reduced distance between goal posts, lowered and enlarged goal rings. Learners could use alternative functional parts of the body or appropriate assistive technology such as prosthesis to play or be assisted by peers or teacher aide or teacher. Safety precautions should be taken for learners with brittle bones, muscular dystrophy and epilepsy by giving them less strenuous tasks.	

<table>
<tr><td colspan="2">Core competencies to be developed:
• Critical thinking and problem solving - when choosing and making appropriate play items and when observing security measures during play.
• Communication and Collaboration: as learners work together in purposive groups;
• Creativity and Imagination: as learners make play items;
• Digital literacy: as learners manipulate digital devices.</td></tr>
<tr><td>Links to Pertinent and contemporary issues (PCI):
• Social Economic Issues: Safety:
- during safe play;
- Environmental issues: use of environmentally friendly materials.</td><td>Links to Values:
• Responsibility – in taking care of the play items;
• Sharing and Love – acceptance of each other as they play together;
• Patience – as they take turns in playing;
• Peace – during play.</td></tr>
<tr><td>Links to other Learning Areas:
• Science and technology –during the exploration of the environment as they collect materials for playing
• Physical Health and Education - during play.</td><td>Suggested community service learning activities:
Teach others how to make different play items</td></tr>
<tr><td>Suggested non-formal activity to support learning:
• Dramatize safe play in school;
• Role play security measures to observe during play;
• Draw posters on safe play and hang them up on the school notice board;
• Learners exhibit safe play items in school.</td><td>Suggested assessment modes:
Checklists, oral questions, written tests, group discussions, self and peer assessment, portfolio, project work</td></tr>
<tr><td colspan="2">Suggested learning resources: Adapted digital resources (pictures, video clips and audios on safe play and different types of games), charts, realia, play items, reference books, Communication board, assistive technology (head/ mouth pointers)</td></tr>
</table>

Other related service providers: Physiotherapist, Occupational therapist, Speech therapist, Resource person

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Name various needs of a child	Learner consistently names the various needs of a child.	Learner names various needs of a child.	With prompts, learner names some of the needs of a child.	Learner names some of the needs of a child with assistance.
Identify different games played in their locality	Learner consistently identifies different games played in their locality.	Learner identifies different games played in their locality.	Learner identifies some of the games played in their localities with cues.	Learner has challenges identifying different games played in their locality.
Identify safe play items	Learner consistently identifies safe play items for a child.	Learner identifies safe play items for a child.	Learner identifies a few of the safe play items for a child.	With assistance, learner attempts to identify some play items for a child.
Qualities of play items	Learner appropriately lists qualities of play items.	Learner lists qualities of play items.	Learner lists a few of the qualities of play items.	Learner rarely lists qualities of play items.
Make safe play items using locally available materials	Learner consistently makes safe play items using locally available materials.	Learner makes safe play items using locally available materials.	Learner makes some play items using locally available materials.	Learner has challenges in making play items using locally available materials.

Care for the play items	Learner appropriately cares for the play items.	Learner cares for the play items.	Learner cares for a few play items.	With assistance, learner cares for some play items.
Observe safety during play	Learner consistently observes safety during play.	Learner observes safety during play.	Learner occasionally observes safety during play.	Learner rarely observes safety during play.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
2.0 HEALTHY LIVING	2.1 Common illnesses in the locality. **(5 lessons)**	By the end of the sub strand, the learner should be able to: a) identify common illnesses in the locality; b) communicate when feeling unwell to others; c) identify the causes of common illnesses in the locality; d) identify healthy practices that prevent illnesses; e) practice healthy measures that prevent illnesses in the locality; f) appreciate the importance of healthy practices in promoting good health in the locality.	• Learners share experiences on incidences when they were unwell (pain, stomachache, headache, feeling hot or cold). Learners with speech difficulties could use residual speech as they are lip read or sign, use multipurpose communication board, speech generating devices or write to express their views. • Learners' role play on how to communicate with others on feeling unwell. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or assisted through sound association by peers or sign or type or use multipurpose communication board speech generating device or eye tracking devices to express their views. (Apply these adaptations in all subsequent activities where speech is required under this strand) Learners with motor	1. What causes illness? 2. How can you tell tha you are unwell? 3. What measures should you take to prevent common illnesses in your locality?

			missing limbs and amputees could use alternative functional parts of the body or appropriate assistive technology or be assisted by peers or teacher aide or teacher to perform given tasks. Safety precautions to be observed for learners with brittle bones, muscular dystrophy, those on wheelchairs as well as those with chronic health impairments. • Learners watch video clips, pictures and charts on causes of feeling unwell. Light *intensity* and glare could be controlled on the digital devices for learners with epilepsy and those with visual difficulties. • In purposive groups or pairs, learners discuss the causes of common illnesses in their locality (coughs, colds, earache, sore throat, vomiting, and diarrhoea). Learners with speech difficulties could use multipurpose communication board to express their views. Learners identify healthy practices that prevent feeling unwell from pictures, charts, health	

			documentaries, health posters (washing hands, using a handkerchief, covering the mouth when coughing, wearing shoes, washing raw vegetables and fruits, drinking clean water, using clean cutlery). Learners with motor and manipulation difficulties could use alternative functional parts of the body or appropriate assistive technology such as mouth/ head pointers, universal cuffs or lighter pointers in identification. • In purposive groups or pairs, learners use pictures, health documentaries and health posters to guide discussions on healthy measures to prevent illnesses. Learners with speech difficulties could use residual speech as they are lip read or sign or type or use	

			multipurpose communication board to express their views. • Learners watch demonstrations, video clips, observe pictures and charts on measures to prevent illnesses in the locality. For learners with epilepsy light intensity and glare should be controlled on the digital devices. (The adaptations made in this sub strand apply in all the subsequent activities which involve speech, manipulation, role play, use of digital devices and watching video clips under this strand. However, besides these adaptations, other adaptations have also been made on specific activities).	

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify common illnesses in the locality	Learner consistently identifies common illnesses in the locality.	Learner identifies common illnesses in the locality.	Learner identifies some common illnesses in the locality.	Learner identifies a few common illnesses in the locality with assistance.
Communicate when feeling unwell to others	Learner effectively communicates when feeling unwell.	Learner communicates when feeling unwell.	Learner communicates when feeling unwell to some extent.	Learner communicates when feeling unwell with assistance.
Identify causes of common illnesses in the locality	Learner identifies causes of common illnesses in the locality with ease.	Learner identifies causes of common illnesses in the locality.	Learner identifies some causes of common illnesses in the locality.	Learner has challenges in identifying common causes of illnesses in the locality.
Identify healthy practices that prevent illnesses in the locality	Learner appropriately identifies healthy practices that prevent illnesses in the locality.	Learner identifies healthy practices that prevent illnesses in the locality.	Learner identifies a few healthy practices that prevent illnesses in the locality.	Learner has challenges identifying healthy practices that prevent illnesses in the locality.
Practice healthy measures that prevent illnesses in the locality.	Learner effectively practices healthy measures that prevent illnesses in the locality.	Learner practices healthy measures that prevent illnesses in the locality**.**	Learner practices some healthy measures that prevent illnesses in the locality	Learner practices healthy measures that prevent illnesses in the locality with assistance.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	2.2 Care of the home **(7 lessons)**	By the end of the sub strand, the learner should be able to: a) identify cleaning materials and tools used at home; b) use locally available resources, make cleaning materials and tools to be used at home; c) describe the procedures of cleaning the home; d) use various procedures to clean the home; e) observe safety when carrying out cleaning activities in the home; f) care for cleaning materials and tools for durability; g) appreciate a clean home in promoting healthy living.	• Learners identify cleaning materials and tools used at home using realia, pictures, video clips, charts (sweeping, mopping, ducting and disposal of refuse). • In purposive groups or pairs, learners discuss improvisation of cleaning materials and tools made from locally available resources. Learners with speech difficulties could be lip read by peers or teacher aide or teacher or assisted through sound association by peers or type or sign or use multipurpose communication board or use total communication speech generating device or eye tracking devices to express their views.(Apply these adaptations in all subsequent activities that involve speech under this strand) • Learners clean using various procedures (dusting, mopping, sweeping, disposal of refuse). Learners on wheelchairs and those with short stature could be •	1. What materials and tools do we use to clean our home? 2. How do we clean our home? 3. How do we care for cleaning materials and tools? 4. Which safety measures do we observe when: • Cleaning (sweeping, mopping, dusting). • disposing off refuse • Making improvised materials and tools for cleaning.

			• allowed to clean surfaces that are within their reach. • Learners practice safety when carrying out cleaning activities in the home • Learners clean and store cleaning materials and tools used at home. Learners with manipulation and motor difficulties could use alternative functional parts of the body or appropriate assistive technology such as prosthesis or universal cuffs to perform given tasks. (Apply these adaptations in all subsequent activities which involve manipulation and motor under this strand) • Learners practice safety when making improvised cleaning materials and tools from locally available resources. • In purposive groups or pairs, learners discuss procedures of cleaning the home (sweeping, mopping, dusting and disposal of refuse). Learners clean using various procedures (dusting,	

			mopping, sweeping, disposal of refuse). Safety precaution measures could be taken for learners with asthma, those with epilepsy, and those who have brittle bones against exposure to dust and strong scents or fumes from detergents, water and heavy containers respectively. • Learners clean using various procedures (dusting, mopping, sweeping, disposal of refuse) • Learners practice safety when carrying out cleaning activities in the home. • Learners clean and store cleaning materials and tools used at home.	

Core competencies to be developed:

- Communication and Collaboration: as learners practice cleaning in groups;
- Critical Thinking and Problem Solving: during improvisation of cleaning materials and tools;
- Imagination and Creativity: as learners make improvised cleaning materials.

Links to Pertinent and contemporary issues (PCI):	**Links to Values:**
• **Social Economic Issues: Environmental issues** - take precautions when collecting materials used for improvisation; - Observing correct disposal of refuse. - During improvisation, cleaning and correct disposal of refuse	• **Unity** - when working together; • **Responsibility** - when cleaning and taking care of the materials and tools; • **Respect** – for the environment during disposal of refuse.

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- **Health related issues: Personal Hygiene**
  - reduction of pollutants through cleaning e.g. sprinkling water on the ground before sweeping to prevent too much dust in the air
  - learners appreciate staying in a clean place

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Links to other learning areas:

- **Science and Technology** – when making improvised cleaning materials and tools;
- **Indigenous Language** – when identifying cleaning materials and tools in the locality;
- **Art and Craft** – when making improvised cleaning materials.

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Suggested community service learning activities:

- Participate in community service activities which involve cleaning.

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Suggested Non Formal Activities:

- Compose and Sing “usafi” songs and poems;
- Collect litter and dispose it off correctly;
- Clean their classrooms.

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Suggested Mode of Assessment:

Oral questions, written tests, check list, group discussions, self and peer assessment, portfolio

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Suggested Learning Resources: Assistive technology (adapted pens/ pencils, pen/ pencil grips, book holders and page turners, head/ mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices); pictures, video clips, audios and charts on cleaning the environment, realia, brooms, mops, buckets, detergents, floor scrubbing brushes, twigs from plants; Multipurpose communication board

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Other related service providers: Physiotherapist, Occupational therapist, Teacher aide

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</table>

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify cleaning materials and tools used at home	Learner correctly identifies cleaning materials and tools used at home with ease .	Learner identifies cleaning materials and tools used at home	Learner identifies some cleaning materials and tools used at home.	Learner identifies a few cleaning materials and tools used at home with assistance.
Use locally available resources to make cleaning materials and tools	Learner appropriately uses locally available resources to make cleaning materials and tools.	Learner uses locally available resources to make cleaning materials and tools.	Learner uses some locally available resources to make a few Cleaning materials and tools.	With assistance, learner attempts to use locally available resources to make cleaning materials and tools.
Describe and use appropriate procedures to clean the home	Learner consistently describes and uses appropriate procedures to clean the home.	Learner describes and uses appropriate procedures to clean the home.	Learner describes and uses some procedures to clean the home with prompts.	Learner attempts to clean the home without following the appropriate procedures.
Observe safety when carrying out cleaning activities in the home	Learner consistently observes safety measures when carrying out cleaning activities at home.	Learner observes safety when carrying out cleaning activities at home.	Learner observes some safety measures when carrying out cleaning activities at home.	Learner rarely observes safety measures when carrying out cleaning activities at home.
Care for cleaning materials and tools in the home	Learner appropriately cares for cleaning materials and tools at home.	Learner cares for cleaning materials and tools at home.	Learner occasionally cares for some cleaning materials and tools at home.	Learner needs assistance to care for cleaning materials and tools at home.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	2.3 Care and cleaning of shoes **(8 lessons)**	By the end of the sub strand, the learner should be able to: a) identify different materials used for making shoes; b) identify materials used for cleaning different types of shoes; c) describe the procedure of cleaning different types of shoes; d) clean shoes made from different types of materials; e) practice safety when cleaning different types of shoes; f) clean and store materials used for cleaning different types of shoes g) appreciate the importance of wearing clean shoes.	• Learner identifies different materials used for making shoes using pictures, realia; video clips (plastic, leather and canvas shoes). • In purposive groups or pairs, learners discuss materials used for cleaning different types of shoes. • In Purposive groups, learners explain the procedure of cleaning different types of shoes. • Learners watch video clips or demonstration on cleaning different types of shoes. • Learners clean shoes made from different types of materials. Provide lower working surfaces for learners on wheelchairs and those with short stature (apply this adaptation in subsequent activities that involve working on surfaces under this strand) • Learners clean and store materials after cleaning shoes made from different materials (scrubbing brush, soft cloth and soap). • Learners practice safety when cleaning different types of shoes. • Learners keep a daily log showing how often they clean their shoes. • Learner stores the cleaned shoes made from different types of materials.	1. What are the materials used for making different types of shoes? 2. How do you clean shoes made from different materials?

<table>
<tr><td colspan="2">Core competencies to be developed:
• Critical Thinking and Problem solving – during improvisation of the cleaning materials for cleaning shoes;
• Communication and Collaboration – when working in pairs and groups;
• Creativity and Imagination - when choosing cleaning materials and also in improvising cleaning materials where applicable;
• Self-efficacy – when cleaning their own shoes.</td></tr>
<tr><td>Links to Pertinent and contemporary issues (PCI):
Social Economic Issues:
• Environmental Education – during disposal of used materials when cleaning shoes;
• Financial literacy – during the improvisation of cleaning materials.</td><td>Links to Values:
• Unity – when working together;
• Responsibility – when cleaning and storing materials after cleaning shoes and also disposing off the cleaning water;
• Honesty – during the storage of shoes after cleaning (to avert theft).</td></tr>
<tr><td>Links to other learning areas:
• Science and Technology - in using materials for cleaning shoes made from different materials;
• Mathematics - in keeping the daily cleaning log.</td><td>Suggested community service learning activities:
• Visit a shoe factory to see how they process the materials to come up with different types of shoes;
• Visit a market/cobbler to identify the different types of shoes;
• Interact with a shoe shiner on cleaning of shoes.</td></tr>
<tr><td>Suggested Non-formal Activities:
• Learners bring cuttings of pictures of different types of shoes;
• Learners maintain cleanliness of their shoes while outside class;
• Interact with a shoe shiner to learn more about care of shoes.</td><td>Suggested Modes of Assessment:
Checklist, oral and written tests, group discussions, self and peer assessment</td></tr>
</table>

Suggested Learning Resources: Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices); pictures, video clips, audios and charts on cleaning shoes, plastic, canvas and leather shoes, cleaning materials; Multipurpose communication board
Other related service providers: Physiotherapist, Occupational therapist, Teacher aide

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify materials used for making different types of shoes	Learner consistently and correctly identifies materials used for making different types of shoes.	Learner identifies materials used for making different types of shoes.	Learner identifies some materials used for making different types of shoes.	Learner identifies materials used for making different types of shoes with assistance.
Identify materials used for cleaning different types of shoes	Learner consistently identifies materials used for cleaning different types of shoes.	Learner identifies materials used for cleaning different types of shoes.	Learner identifies some materials used for cleaning different types of shoes.	Learner rarely identifies materials used for cleaning different types of shoes.
Describe the procedure and clean shoes made from different types of materials using the right procedure	Learner describes the procedure and appropriately cleans shoes made from different types of materials following the correct procedure.	Learner describes the procedure and cleans shoes made from different types of materials following the correct procedure.	Learner describes the procedure and cleans shoes made from different materials following the correct procedure with assistance.	learner has difficulty describing the procedure and cleaning shoes made from different materials following the correct procedure even with assistance.

Practice safety when cleaning different types of shoes	Learner effectively observes safety practices when cleaning different types of shoes	Learner observes safety practices when cleaning different types of shoes	Learner observes some safety practices when cleaning different types of shoes	Learner rarely observes safety practice when cleaning different types of shoes
Clean and store materials used for cleaning different types of shoes	Learner appropriately cleans and stores materials and tools used for cleaning different types of shoes.	Learner cleans and stores materials and tools used for cleaning different types of shoes.	Learner cleans and stores some materials and tools used for cleaning different types of shoes.	Rarely cleans and stores some materials and tools used for cleaning different types of shoes.

Strand	Sub strand	Specific learning outcomes	Suggested learning experience	Key inquiry question (s)
	2.4 Fuels used at home **(8 lessons)**	By the end of the sub strand, the learner should be able to: a) identify types of fuels used at home; b) state reasons for using various types of fuel at home; c) use and conserve fuel used at home; d) practice safety when using fuels; e) state the challenges faced when using different types of fuel at home; f) appreciate the importance of conserving fuel at home.	• Learners identify types of fuel used at home (electricity, charcoal, wood, gas paraffin) using charts, pictures, video clips and realia. • In purposive groups or pairs, learners discuss reasons for using various types of fuel at home (cooking, heating, and lighting). • In purposive groups or pairs, learners practice using different types of fuel. Provide lower working surfaces for learners on wheelchair and those with short stature. • In purposive groups or pairs, learners discuss ways of conserving fuel at home. • Learners watch a video clip or demonstration on using different types of fuel at home. • In purposive groups or pairs, learners discuss the challenges faced when using different types of fuel at home, • Learners role play safety precautions to be observed while using fuel at home.	1. Which types of fuel are available in your locality? 2. How do you conserve fuel at home? 3. How do you ensure safety while using fuel at home? 4. What are the challenges you are likely to face when using different types of fuel at home?

<table>
<tr><td colspan="2">Core competencies to be developed:
• Communication and Collaboration - during teamwork activities;
• Critical thinking and Problem Solving - when giving reasons for using various types of fuel at home;
• Creativity and Imagination during role play on safety precautions to observe when using fuel.</td></tr>
<tr><td>Links to Pertinent and contemporary issues (PCI):
Social Economic Issues:
• Environmental issues -in fuel conservation
• Disaster and risk reduction - in safety precautions while using fuel</td><td>Links to Values:
Responsibility - in using fuel sparingly
Unity and patience - while working in groups</td></tr>
<tr><td>Links to other Learning Areas:
Science and technology during:
• conservation of fuel;
• When identifying types of fuel.</td><td>Suggested community service learning activities:
- Sensitize community members on safety measures while using fuels.</td></tr>
<tr><td>Suggested Non-Formal Activities
• Share with peers the kind of fuel they use at home;
• Pay a visit to the school kitchen to observe how fuel is being conserved;
• Display pictures of fuels used at home.</td><td>Suggested Assessment Modes:
Portfolio, debates, oral questions, written tests, critiques, self and peer assessment, checklist</td></tr>
<tr><td colspan="2">Suggested Learning Resources:
Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices); pictures, video clips, audios and charts on fuels used at home, realia, dry twigs from plants; Multipurpose communication board</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapist, Occupational therapist, Teacher aide, Resource person</td></tr>
</table>

Assessment Rubric

Indicator	Exceeds expectation	Meeting expectation	Approaching expectation	Below expectation
Identify types of fuel used at home	Learner appropriately identifies types of fuel used at home.	Learner identifies types of fuel used at home.	Learner identifies some types of fuel used at home.	With assistance, learner identifies a few types of fuel used at home.
Reasons for using various types of fuel at home	Learner consistently states reasons for using various types of fuel at home.	Learner states reasons for using various types of fuel at home.	Learner states a few reasons for using various types of fuel at home.	Learner rarely states reasons for using various types of fuel at home.
Use and conserve fuels at home	Learner appropriately uses and conserves fuels at home.	Learner uses and conserves fuels at home.	Learner sometimes uses and conserves fuels at home.	Learner occasionally uses and conserves fuels at home.
Practice safety when using fuels	Learner consistently observes safety practices when using fuels.	Learner observes safety practices when using fuel.	Learner sometimes observes safety practices when using fuel.	Learner needs guidance in order to observe safety practices when using fuel.
Identify challenges faced when using different types of fuel at home	Learner constantly identifies challenges faced when using different types of fuel at home	Learner identifies challenges faced when using different types of fuel at home	Learner identifies a few challenges faced when using different types of fuel at home	Learner has difficulties identifying challenges faced when using different types of fuel at home

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
3.0 CONSUMER EDUCATION	3.1 Consumer Awareness **(3 lessons)**	By the end of the sub strand, the learner should be able to: a) describe a shopping list used for buying items; b) state the importance of a shopping list to a consumer; c) identify places where one can shop in the locality; d) outline the steps to follow when making a shopping list; e) prepare a shopping list for use at home; f) appreciate the use of a shopping list.	• Learners discuss a shopping list through brainstorming in purposive groups or pairs. Learners with speech difficulties could use residual speech as they are lip read by peers or teacher aide or teacher or sign or use multipurpose communication board or speech generating device or eye tracking devices to express their views. (These adaptations apply in bullet 2, 3 and 4 below). • In purposive groups or pairs, learners discuss the importance of a shopping list to a consumer. • Learners discuss places where one can shop in the locality through sharing experiences, pictures, video clips and charts. Learners with manipulation difficulties such as those with amputation or missing limbs could use alternative functional parts of the body or appropriate assistive technology such as prosthesis or universal cuffs to operate the digital devices. For learners with epilepsy light intensity and glare could be reduced on the digital devices.	1. Why do we make a shopping list? 2. What do you consider when making a shopping list?

			• In purposive groups or pairs, learners discuss steps to follow when making a shopping list in order of priority. • Learners prepare a shopping list. Learners with manipulation and motor difficulties could use alternative functional parts of their body or appropriate assistive technology or be assisted by peers or teacher aide or teacher to prepare the shopping list. • Learners role play buying items using a shopping list to shop. Learners with mobility difficulties could use appropriate assistive technology (wheelchairs, crutches, scooter boards) while those with manipulative and motor difficulties could use alternative functional parts of the body or appropriate assistive technology or be assisted by peers or teacher aide or teacher to perform given tasks. Safety precaution measures could be taken for learners with brittle bones by giving them lighter shopping tasks; while learners with asthma could be safeguarded against scented commodities.	

<table>
<tr><td colspan="2">Core competencies to be developed:
• Critical Thinking and Problem Solving-when prioritizing items in a shopping list;
• Communication and Collaboration - when sharing and working in groups;
• Creativity and Imagination - during role play using a shopping list;
• Self-efficacy – when able to prepare and use a shopping list.</td></tr>
<tr><td>Links to Pertinent and contemporary issues (PCI):
• Life skills- decision making skills when coming up with the necessities to include in shopping list;
• Social Economic Issues: Financial literacy- making a shopping list to help reduce unwanted expenses.</td><td>Links to Values:
• Responsibility - when making decisions and choices as they prepare a shopping list and use it to shop;
• Honesty – in preparing the shopping list and shopping using it (using the right amount of money and bringing back the balance).</td></tr>
<tr><td>Links to other Learning Areas:
• Mathematics-when allocating money for different items on the list.
• Languages-as learners write the names of commodities in the shopping list.</td><td>Suggested community service learning activities:
Participate actively in preparing the shopping list and assisting parents or guardians or peers in shopping.</td></tr>
<tr><td>Suggested Non Formal Activities:
• Learners buy items in the school canteen during break time;
• Learners to have forums in the school or individual classes on the importance of having a shopping list.</td><td>Suggested Assessment Modes:
• Checklist, oral and written tests, group discussions</td></tr>
<tr><td colspan="2">Suggested Learning Resources:
Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices); pictures, video clips, audios and charts on shopping activities, school canteen, shop, commodities in the shop, shopping list; Multipurpose communication board</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapist, Occupational therapist, Teacher aide</td></tr>
</table>

Assessment rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
State the importance of a shopping list	Learner accurately states the importance of a shopping list.	Learner states the importance of a shopping list.	Learner sometimes states the importance of a shopping list.	Learner has challenges stating the importance of a shopping list.
Identify places from where one can shop in the locality	Learner appropriately identifies places from where one can shop in the locality.	Learner Identifies places from where one can shop in the locality.	Learner identifies a few places where one can shop in the locality.	Learner needs guidance to identify places from where one can shop in the locality.
Prepare a shopping list using the correct steps	Learner correctly prepares a shopping list using the correct steps.	Learner prepares a shopping list using the correct steps.	Learner prepares a shopping list but skips some steps.	With assistance, learner prepares a shopping list.
Use a shopping list	Learner effectively shops using a shopping list.	Learner shops using a shopping list.	Learner attempts to buy a few items in the shopping list.	Learner needs guidance to Shop using the shopping list.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
4.0 FOOD AND NUTRITION	4.1Choosing foods **(3 lessons)**	By the end of the sub strand, the learner should be able to: a) list factors to consider when choosing foods from a general grocery; b) choose foods from a general grocery in their locality; c) appreciate the importance of grocery shops in the locality.	• Learners discuss factors to consider when choosing foods from a general grocery (type of packaging, information on the package, correct weight, freshness, expiry date, and price). Learners with speech difficulties could use residual speech as they are lip read or sign or use multipurpose communication or board speech generating device or eye tracking devices to express their views. • Learners role play choosing foods from a general grocery. Learners with mobility difficulties and those with manipulative difficulties could use alternative functional parts of their body or appropriate assistive technology such as wheelchairs or prostheses or universal cuffs respectively or be assisted by peers or teacher aide or teacher to perform given tasks. Safety precautions could be taken for learners with asthma and those who have brittle bones against exposure to strong scented commodities such as detergents or perfumes and heavy objects respectively. (The adaptations made in this sub strand apply in all the subsequent activities that involve speech, manipulation and the use	1. What can you buy from a general grocery? 2. What factors do you consider when choosing food from a general grocery?

			of digital devices under this strand. However, other adaptations have also been made on specific activities).	

Core competencies to be developed:

- **Self-Efficacy** will be developed as learners select food items correctly;
- **Critical Thinking and Problem Solving** will be developed by allowing learners to make a choice of food from a multiple perspective;
- **Communication and Collaboration** – collaborative skills in the classroom as they role play choosing foods.

Links to Pertinent and contemporary issues (PCI): • **Life skills Issues - effective decision making skills** when choosing food from the general grocery; • **Health Related Issues**: **prevention of diseases-** choosing foods which have not expired, appropriately packaged, correct weight, fresh, affordable price.	**Links to Values:** - Responsibility - when choosing food from the general grocery; - Integrity and honesty – when using money and returning the balance.
Links to other Learning Areas: • **Mathematics** – when accounting for money used for buying food items; • **Science and Technology** – when choosing the correct and healthy foods; • **Agriculture** – farm products from the groceries (vegetables, milk, cereals).	**Suggested community service learning activities:** • Assist parent or guardians in carrying out shopping from a general grocery; • Offering to help sell in the family shop.
Suggested Non Formal Activities: • Learners to buy food from the canteen during their free time; • Compose songs and poems on the importance of choosing food.	**Suggested Assessment Modes:** Checklist, debates, oral and written tests, group discussions, self and peer assessment and portfolio

Suggested Learning Resources:

Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices); pictures, video clips, audios and charts on choosing food, school canteen, general grocery, food commodities in the general grocery, shopping list; Multipurpose communication board

Other related service providers: Physiotherapist, Occupational therapist, Teacher aide.

Assessment rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
List factors to consider when choosing food from a general grocery.	Learner consistently lists factors to consider when choosing food from a general grocery.	Learner lists factors to consider when choosing food from a general grocery.	Learner attempts to list factors to consider when choosing food from a general grocery.	Learner has challenges listing factors to consider when choosing food from a general grocery.
Choose food from a general grocery in the locality.	Learner effectively chooses foods from a general grocery in the locality.	Learner chooses foods from a general grocery in the locality.	Learner chooses some foods from a general grocery in the locality.	With assistance, learner chooses a few foods from a general grocery in the locality.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	4.2 Variety in the Diet **(3lessons)**	By the end of the sub strand, the learner should be able to: a) identify foods available in the locality; b) state the functions of foods in the body; c) classify food into groups according to their functions; d) explain the importance of a variety of foods in the diet for healthy living; e) select foods to make a healthy meal; f) appreciate the importance of a balanced diet for healthy living.	• Learners identify foods available in the locality through sharing of experience, realia, pictures, and charts and edited video clips. • In purposive groups or pairs, learners discuss classification of foods according to their functions using pictures, charts, realia, video clips (body building, energy giving and protective foods). Light intensity and glare could be controlled on the digital devices for learners with epilepsy and others with visual difficulties. • Learners can use shop corner or digital devices to classify food. • Learners brainstorm on the meaning of variety in the diet. • Learners discuss eating different types of foods to get different types of nutrients in the body. • In purposive groups or pairs, learners select foods to make a healthy diet using realia, charts, and pictures or adapted computing devices. • In purposive groups or pairs, learners role play on selecting foods to make a healthy diet using realia, charts, pictures or computing devices.	1. What are the functions of food in our body? 2. What is variety in the diet? 3. What is a healthy meal?
Core competencies to be developed: • Communication and Collaboration – is developed when learners discuss in purposive groups; • Critical Thinking and Problem Solving – when learners classify food into groups; • Self-efficacy – when learners choose and eat a variety of foods in a diet.				

<table>
<tr><td>Links to Pertinent and contemporary issues (PCI):
Health Related Issues: Prevention of disease – choosing a variety of foods for a healthy diet.</td><td>Links to Values:
• Responsibility – choosing a variety of foods for healthy living;
• Unity – during role playing;
• Respect - for other people's choice of food.</td></tr>
<tr><td>Links to other Learning Areas:
• Agriculture – food from plants and animals;
• Science and Technology – in the classification of food groups according to their functions.</td><td>Suggested community service learning activities:
Advocate for a variety of foods for a healthy diet using locally available foods in school and at home for healthy living.</td></tr>
<tr><td>Suggested Non- Formal Activities
• Use forums (debates) in school to talk to the other students about the importance of a balanced diet
• Compose poems and songs on the importance of a balanced diet
• Make posters to sensitize the rest of the school about the importance of a balanced diet.</td><td>Suggested Assessment Modes:
Checklist, oral questions, written tests, portfolio, self and peer assessment, group discussion, writing</td></tr>
<tr><td colspan="2">Suggested Learning Resources: Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices); pictures, video clips, audios and charts on balanced diet, school canteen, general grocery, food commodities in the general grocery; Multipurpose communication board</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapist, Occupational therapist, Resource person (Nutritionist), Teacher aide</td></tr>
</table>

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify foods available in the locality.	Learner appropriately identifies foods available in the locality.	Learner identifies foods available in the locality.	Learner identifies some foods available in the locality.	With assistance, learner identifies some foods available in the locality.
State the functions of foods in the body.	Learner effectively states the functions of foods in the body.	Learner states the functions of foods in the body.	Learner attempts to state the functions of foods in the body.	Learner rarely states the functions of foods in the body.
Classify foods into groups according to their functions.	Learner consistently classifies foods into groups according to their functions	Learner classifies foods into groups according to their functions	Learner classifies some foods into groups according to their functions	With guidance, learner classifies some foods into groups according to their functions
Explain the importance of a variety of food in the diet	Explains the importance of a variety of food in the diet with a lot of ease.	Explains the importance of a variety of food in the diet.	Explains the importance of a variety of food in the diet with assistance.	Has difficulty explaining the importance of a variety of food in the diet even with support.
Select foods to make a healthy meal.	Learner accurately selects foods to make a healthy meal.	Learner selects foods to make a healthy meal.	Learner selects some foods to make a meal.	Learner needs assistance to select foods to make a meal.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	4.3Preservation of milk **(4 lessons)**	By the end of the sub strand, the learner should be able to: a) identify sources of milk in the locality; b) state the importance of milk in the body; c) state the reasons for preserving milk; d) explain the methods of preserving milk in the locality; e) use different methods to preserve milk; f) practice food hygiene when using different methods to preserve milk; g) appreciate the importance of preserving milk.	• In purposive groups or pairs, learners brainstorm on the sources of milk in the locality (packed milk in shops, milk vendors, and farmers) and the importance of milk in the body. • Learners identify sources of milk in the locality using pictures, charts, video clips. • In purposive groups or pairs, learners discuss the importance of preserving milk. • In purposive groups or pairs, learners will discuss methods of preserving milk in the locality (boiling, fermenting, home cooler, refrigeration). • Learners to watch a demonstration or video clip on methods of preserving milk • Learners use different methods to preserve milk. • Learners practice food hygiene when using different methods to preserve milk.	1. What are the sources of milk? 2. How do we preserve milk?
Core competencies to be developed: • **Communication and collaboration**: when they engage in group discussions; • **Critical thinking and Problem solving**: when learners discuss the importance of preserving milk; • **Creativity and imagination**: when learners use different methods to preserve milk;				

<table>
<tr><td colspan="2">

- **Digital literacy:** this will be developed as learner's access information using the adapted digital devices on importance and methods of preserving milk.
- **Self –efficacy**: when learners preserve milk at home.

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Links to Pertinent and contemporary issues (PCI):

- **Health Related Issues**: **Personal Hygiene** – use of hygienic practices when preserving milk;
- **Social Economic Issues: Animal Welfare** - respect for the animals.

</td><td>

Links to Values:

- **Responsibility** – in using different methods to make milk last longer;
- **Honesty** – by not adding additives in milk;
- **Respect** - of other people's source of milk and the animals which are providing us with the milk.

</td></tr>
<tr><td>

Links to other Learning Areas:

- **Science and Technology** – in the scientific principles on the various methods used to preserve milk;
- **Agriculture** – sources of milk;
- **English** – learning of vocabulary such as preservation.

</td><td>

Suggested community service learning activities:

- Assist parent/guardian in preserving milk at home;
- Visit a farm or firm to observe and sensitize people on the preservation of milk.

</td></tr>
<tr><td>

Suggested Non -Formal Activities

- Learners practice to preserve milk at home;
- Compose poems and songs about taking care of animals;
- Use an animal welfare club to teach on dairy farming.

</td><td>

Suggested Assessment Modes:
Checklist, oral questions, written tests, group discussions, self and peer assessment and portfolio.

</td></tr>
<tr><td colspan="2">

Suggested Learning Resources: Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices, voice amplifiers); pictures, video clips, audios and charts on preservation of milk, , utensils, kitchen equipment and appliances, milk, milk processing and plant; Multipurpose communication board

</td></tr>
<tr><td colspan="2">

Other related service providers: Physiotherapist, Occupational therapist, Resource person (Nutritionist), Teacher aide

</td></tr>
</table>

Assessment rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify sources of milk in the locality.	Learner consistently identifies sources of milk in the locality.	Learner identifies sources of milk in the locality.	Learner identifies a few sources of milk in the locality.	With assistance, learner identifies sources of milk in the locality.
State the importance of milk in the body.	Learner effectively states the importance of milk in the body.	Learner states the importance of milk in the body.	Learner attempts stating the importance of milk in the body.	Learner has challenges stating the importance of milk in the body.
State the reasons for preserving milk.	Learner appropriately stats the reasons for preserving milk.	Learner states the reasons for preserving milk.	Learner states some reasons for preserving milk.	With guidance learner states some reasons for preserving milk.
Explain the methods of preserving milk in the locality.	Learner effectively Explains the methods of preserving milk in the locality.	Learner explains the methods of preserving milk in the locality.	Learner explains a few methods of preserving milk in the locality.	Learner has difficulties explaining methods of preserving milk in the locality.
Use different methods to preserve milk	Learner appropriately uses different methods to preserve milk.	Learner uses different methods to preserve milk.	Learner attempts to use some methods to preserve milk.	Learner needs assistance to use some methods to preserve milk.
Practice food hygiene when preserving milk	Learner consistently practices food hygiene when preserving milk.	Learner practices food hygiene when preserving milk.	Learner observes a few food hygiene practices when preserving milk.	Learner needs assistance in practicing food hygiene when preserving milk.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	4.4 Fragile Kitchen utensils. (**6 Lessons)**	By the end of the sub strand, the learner should be able to: a) state the uses of kitchen utensils at home; b) identify kitchen utensils that are fragile; c) identify materials used for cleaning fragile kitchen utensils; d) clean, dry and store fragile kitchen utensils used at home; e) observe precautions when cleaning fragile kitchen utensils; f) appreciate fragile kitchen utensils at home.	• In purposive groups, learners discuss the uses of various kitchen utensils at home (cooking, serving and eating). • Learners identify fragile kitchen utensils used at home using realia, pictures, video clips, charts, sharing experiences (glass, thermos flask, earthen ware, ceramic, and gourd). Light intensity and glare could be controlled on the digital devices for learners with epilepsy and those with visual difficulties as they watch a video clip. Safety precaution could be observed to safeguard learners with haemophilia and those with manipulative difficulties as they handle fragile utensils (Apply these adaptations in the subsequent activities that involve the use of fragile and sharp utensils). • In purposive groups or pairs, learners identify materials used for cleaning fragile kitchen utensils at home from realia, charts, pictures and video clips. • Learners watch a demonstration from the teacher or video clips on cleaning, drying and storing fragile kitchen utensils. • Learners clean, dry and store fragile kitchen utensils used at home • Learners observe precautions when cleaning fragile kitchen utensils (cleaning, drying and storage).	1. What are the uses of various kitchen utensils at home? 2. Which are the fragile kitchen utensils used at home? 3. How do you clean, dry and store fragile kitchen utensils used at home? 4. What are the precautions to observe when cleaning fragile kitchen utensils?

<table>
<tr><td colspan="2">Core competencies to be developed:
• Communication and collaboration – during group discussions;
• Creativity and critical thinking – when identifying fragile items and when identifying cleaning materials;
• Self-efficacy – when cleaning, drying and storing fragile utensils without breaking.</td></tr>
<tr><td>Links to Pertinent and contemporary issues (PCI):
Social Economic Issues: Environmental issues:
• proper drainage and disposal of water used for the cleaning process;
• when they use clean utensils.</td><td>Links to Values:
• Responsibility – while taking care of utensils;
• Unity - when working in groups.</td></tr>
<tr><td>Links to other Learning Areas:
• Science and technology – properties of matter when exposed to heat;
• English – when learning new words (fragile).</td><td>Suggested community service learning activities:
Participate in house cleaning fragile kitchen utensils at home or in an institution.</td></tr>
<tr><td>Suggested Non -Formal Activities
• Learners exhibit fragile kitchen utensils in school.
• Learners draw fragile kitchen utensils used at home and post on the school notice board.</td><td>Suggested Assessment Modes:
Checklist, oral questions and written tests, group discussions, self-assessment, peer-assessment, portfolio.</td></tr>
<tr><td colspan="2">Suggested Learning Resources: Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices, voice amplifiers); pictures, video clips, audios and charts on cleaning, drying and storage of fragile and non-fragile utensils, utensils, kitchen equipment and appliances, materials used for cleaning kitchen utensils; Multipurpose communication board</td></tr>
<tr><td colspan="2">Other related service providers: Physiotherapist, Occupational therapist, Resource person (Nutritionist), Teacher aide</td></tr>
</table>

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
State the uses of kitchen utensils at home.	Learner effectively states the uses of kitchen utensils at home.	Learner states the uses of kitchen utensils at home.	Learner states some uses of kitchen utensils at home.	Learner has challenges stating the use of kitchen utensils at home.
Identify kitchen utensils that are fragile.	Learner consistently identifies fragile kitchen utensils used at home.	Learner identifies fragile kitchen utensils used at home.	Learner identifies some fragile kitchen utensils used at home.	Learner needs assistance to identify fragile kitchen utensils used at home.
Identify materials used for cleaning fragile kitchen utensils.	Learner appropriately identifies materials for cleaning fragile kitchen utensils.	Learner identifies materials used for cleaning fragile kitchen utensils.	Learner attempts to identify some materials used for cleaning fragile kitchen utensils.	Learner needs assistance to identify materials used for cleaning fragile kitchen utensils.
Apply correct procedures to clean, dry and store fragile kitchen utensils.	Learner appropriately applies correct procedures to clean, dry and store fragile kitchen utensils.	Learner applies correct procedures to clean, dry and store fragile kitchen utensils.	Learner applies some procedures to clean, dry and store fragile kitchen utensils.	Learner needs assistance to apply some procedures to clean, dry and store fragile kitchen utensils.
Observe precautions while cleaning fragile Kitchen utensils	Learner consistently observes precautions while cleaning fragile kitchen utensils.	Learner observes precautions while cleaning fragile kitchen utensils.	Learner attempts to observe some precautions while cleaning fragile kitchen utensils.	Learner has challenges observing precautions while cleaning fragile kitchen utensils.

Strand	Sub strand	Specific learning outcomes	Suggested learning experience	Key inquiry question(s)
	4.5 Cooking Food **(15 lessons)**	By the end of the sub strand, the learner should be able to: a) state reasons for cooking food; b) explain food hygiene practices to observe when cooking food; c) state safety precautions to observe when cooking food; d) explain methods of cooking food; e) cook food using different methods; f) appreciate cooking food using different methods.	• Learners brainstorm on reasons for cooking food. • In purposive groups or pairs, learners discuss hygiene practices to observe when cooking food using pictures, charts, video clips and sharing experiences. • Learners watch a video clip or demonstration on safety precautions to observe when cooking food. • In purposive groups or pairs, learners discuss safety precautions to be observed during cooking. • Learners watch a video clip or demonstration on methods of cooking food (boiling, shallow frying). • In purposive groups, learners cook food using different methods (boiling, shallow frying).	1. Why do we cook food? 2. What are the hygiene practices to be observed when cooking food? 3. Which are the safety precautions to observe when cooking food? 4. Which are the methods used when cooking food?

Core competencies to be developed:

- **Communication and collaboration:** this will be developed as learners interact during group activities;
- **Critical thinking and problem solving:** this will be developed as learners observe hygiene and safety when cooking food;
- **Creativity and imagination:** this will be developed as learners cook different foods;
- **Citizenship** – promotion of our culture as they prepare food from different cultural backgrounds.

Links to Pertinent and contemporary issues (PCI): **Social Economic Issues:** • **Disaster and risk reduction:** as learners observe safety precautions while cooking. • **Patriotism**: in promotion of local indigenous foods.	**Links to Values:** • **Respect** - embracing foods from different communities (indigenous foods); • **Responsibility** – care while handling cooking items.
Links to other Learning Areas: • **Science and technology** – conservation of energy while cooking; • **Agriculture** – sources of food.	**Suggested community service learning activities:** Visit the community food vendors and observe how they prepare foods.
Suggested Non-Formal Activities to support learning: Debates on the methods of cooking (boiling or shallow frying).	**Suggested Assessment Modes:** Checklist, oral questions and written tests, group discussions, self-assessment, peer-assessment, portfolio, critiques.
Suggested Learning Resources: Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices, voice amplifiers); pictures, video clips, audios and charts on methods of cooking food, utensils, kitchen equipment, assorted food items, fuel; Multipurpose communication board	
Other related service providers: Physiotherapist, Occupational therapist, Resource person (Nutritionist or a chef), Teacher aide	

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
State reasons for cooking food.	Learner state and explains reasons for cooking food.	Learner states reasons for cooking food.	Learner states a few reasons for cooking food.	Learner has challenges stating reasons for cooking food.

Explain food hygiene practices to observe when cooking food.	Learner effectively explains food hygiene practices to observe when cooking food.	Learner explains food hygiene practices to observe when cooking food.	Learner states food hygiene practices to observe when cooking food.	With guidance learner states a few food hygiene practices to observe when cooking food.
State safety precautions to observe when cooking food.	Learner appropriately states safety precautions to observe when cooking food.	Learner states safety precautions to observe when cooking food.	Learner attempts to state some safety precautions to observe when cooking food.	Learner rarely state safety precautions to observe when cooking food.
Explain methods of cooking food.	Learner consistently explains methods of cooking food.	Learner explains methods of cooking food.	Learner states methods of cooking food.	With assistance learner states a few methods of cooking food.
Cook food using different methods	Correctly cooks food using various methods.	Cooks food using various methods.	Attempts to cook food using various methods.	Needs assistance to cook food using various methods.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question(s)
5.0 CLOTHING	5.1 Needlework tools **(5 lessons)**	By the end of the sub strand, the learner should be able to: a) identify various tools used in needlework; b) use basic needlework tools in sewing; c) practice safety measures while using the needlework tools; d) store needlework tools appropriately for safety; e) appreciate use of needlework tools.	• Learner identifies various tools used in needlework from pictures, charts, realia, video clips (needles, scissors, tape measure, ruler, pins, thimble, and threads). Learners with speech difficulties could identify using residual speech as they are lip read or by pointing or nodding, signing or writing or using a multipurpose communication board speech generating device or eye tracking devices. Light intensity and glare could be controlled on the digital devices for learners with epilepsy and others with visual difficulties. • Learners will watch a demonstration on use of basic needlework tools. Learners with floppiness, those with spinal injury and those with spinal curvatures could require appropriate positioning devices such as floor seaters, prone wedges and straps. • In purposive groups or pairs, learners practice using basic needlework tools. Safety precautions could be observed for learners with haemophilia, those with manipulative difficulties and those with uncoordinated movements such as learners with cerebral palsy may require	1. Which tools do you use in needlework? 2. How do you use the needlework tools? 3. What are the safety measures to be observed while using the needlework tools? 4. How should we store needlework tools?

			a larger needle with a bigger eyehole. They may need weight for holding the fabric in position. (Apply these adaptations in subsequent activities in this sub strand). • Learners practice safety while using the needlework tools. • Store needlework tools appropriately. (The adaptations made in this sub strand apply in all the subsequent activities that involve speech, manipulation and the use of digital devices under this strand. However, other adaptations have also been made on specific activities).	
Core competencies to be developed: • **Creativity and Imagination skills**: when improvising needlework tools; • **Communication and collaboration**: During teamwork activities; • **Learning to learn**: in group activities when using needlework tools; • **Digital literacy**: when learners are watching demonstrations on use of needlework tools				
Links to Pertinent and contemporary issues (PCI): • **Social Economic Issues: Safety** : when using and storing needlework tools; • **Life Skills**: **Knowing and living with self and others**: while interacting with the needlework tools.			**Links to Values:** • **Responsibility:** When using and storing the needlework tools; • **Unity:** when working in purposive pairs.	

Links to other Learning Areas: • Mathematics - when taking measurements, using rulers and tape measures, and cutting different shapes. • English - when learning different terminologies such as thimble.	**Suggested community service learning activities:** Visit a nearby tailoring shop to observe the use of the needlework tools.
Suggested Non Formal Activities: -Draw and display needlework tools on the school notice board	**Suggested Assessment Modes:** Exhibitions, observation, critiques, portfolio, self and peer assessment
Suggested Learning Resources: Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers multipurpose stamp, universal cuffs; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices, voice amplifiers); needles, scissors, tape measure, ruler, pins, thimble, threads, piece of cloth pictures, video clips, audios and charts on needle work tools; Multipurpose communication board	
Other related service providers: Physiotherapist, Occupational therapist, Resource person (Tailor), Teacher aide	

Assessment Rubric

Indicator	Exceeds expectations	Meets expectations	Approaches expectations	Below expectations
Identifies various tools used in needlework.	Learner appropriately identifies various tools used in needlework.	Learner identifies various tools used in needlework.	Learner identifies some tools used in needlework.	With assistance, learner identifies some tools used in needlework.
Use basic needlework tools in sewing.	Effectively uses basic needlework tools in sewing.	Learner uses basic needlework tools in sewing.	Learner uses some basic needlework tools in sewing.	With guidance, learner uses some basic needlework tools in sewing.
Practice safety measures while using needlework tools.	Learner consistently practices safety measures while using needlework tools.	Learner practices safety measures while using needlework tools.	Learner practices a few safety measures while using needlework tools.	Learner needs assistance to practice safety measures while using needlework tools.
Store needlework tools.	Learner appropriately stores needlework tools.	Learner store needlework tools.	Learner attempts to store some needlework tools.	Learners stores some needlework tools with assistance.

Strand	Sub strand	Specific learning outcomes	Suggested learning experience	Key inquiry question (s)
	5.2 Stitches **(9 lessons)**	By the end of the sub strand, the learner should be able to: a) identify stitches used on clothes and household articles; b) state the uses of stitches in clothes; c) practice threading a needle before sewing; d) practice using a needle during sewing; e) make a handkerchief using tacking stitches; f) observe safety precautions during needlework g) appreciate the use of tacking stitches in clothes.	• Learner identifies stitches on clothes. Learners with speech difficulties could be lip read as they use residual speech or point or sign or use a multipurpose communication board speech generating device or eye tracking devices to express own views. (Apply this adaptation in bullet 2 below). • Learner states the uses of stitches on clothes. • In purposive pairs, learners practice threading a needle before sewing. Learners with manipulative or motor difficulties such as those with missing limbs, amputees and those with cerebral palsy could use alternative functional parts of the body or appropriate assistive technology such as prostheses or be assisted by peers or teacher aide or teacher to perform given tasks. Learners with manipulative and eye-hand/ foot co-ordination difficulties could begin by threading larger improvised wooden needles fixed on a surface such as soap or plasticine or clay or rubber. Observe safety and care for learners with haemophilia, those with epilepsy and those with anaemia as they carry out the activity. • Learner practices threading a needle before sewing. Learners with manipulative or motor difficulties and those with eye-hand/ foot co-	1. Why do we use stitches on clothes? 2. What is the use of stitches in clothes and household articles?

			ordination difficulties could be assisted by peers or teacher or teacher aide to thread larger needles. Observe safety and care for learners with haemophilia, those with epilepsy and those with anaemia as they carry out the activity. • Learner practices using a needle during sewing. Learners with missing limbs could use alternative functioning limbs while those with motor and manipulative difficulties could use assistive devices or could be assisted by peers or teacher aide or teacher. Weighted fabric or paper can be used for practice. • Learner makes a handkerchief using tacking stitches. • Learner observes safety during sewing. Care and precaution should be observed for learners with hemophilia, cerebral palsy and epilepsy as they perform activities involving use of sharp objects. (The adaptations made on the activities in this sub strand apply in all the subsequent activities that involve the use of needles and other sharp objects under this strand).	

Core competencies to be developed:

- **Communication and Collaboration** – as they work together;
- **Creativity and Imagination** - through determination to be persistent in sewing;
- **Self-efficacy** – ability to make tacking stitches.

Pertinent and Contemporary Issues (PCI):	**Links to Values:**
• **Social Economic Issues: Safety** - when sewing.	• **Responsibility** - when observing safety before and during sewing;

	• **Unity** – when working together.
Links to other Learning Areas: • **Mathematics** – measuring different tacking stitches during sewing; • **Art and Craft** – when using different colours of threads during sewing.	**Suggested Community Service Learning Activities:** Learners help tailors in the locality to make tacking stitches.
Suggested Non Formal Activities: Make stitches and display on the classroom charts or in the portfolio.	**Suggested Assessment Modes:** Observation, critiques, checklist, portfolio, oral questions, written tests, self and peer assessment.
Suggested Learning Resources: Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers multipurpose stamp, universal cuffs; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices, voice amplifiers); needles, scissors, tape measure, ruler, pins, thimble, sewing threads, piece of cloth, buttons of different sizes, pictures, video clips, audios and charts on needle work tools and stitches, larger adapted wooden needles, large size needles; Multipurpose communication board	
Other related service providers: Physiotherapist, Occupational therapist, Resource person (Tailor), Teacher aide	

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify stiches used on clothes and household articles	Learner appropriately identifies stiches used on clothes and household articles.	Learner identifies stiches used on clothes and household articles.	Learner identifies some stiches used on clothes and household articles.	With assistance, learner identifies some stiches used on clothes and household articles.
State the uses of stitches on clothes	Learner effectively state the uses of stitches on clothes.	Learner states the uses of stitches on clothes.	Learner attempts to state the uses of some stitches on clothes.	Learner rarely states the uses of stitches on clothes.
Practice threading a needle before sewing.	Learner consistently threads a needle before sewing.	Learner threads a needle before sewing.	Learner threads a needle after several attempts before sewing.	Learner needs guidance to thread a needle before sewing.
Use needle during sewing	Learner effectively uses a needle during sewing.	Learner uses a needle during sewing.	Learner attempts to use a needle during sewing	Learner needs assistance to use a needle during sewing
Making a handkerchief using tacking stitches	Learner accurately and consistently makes tacking stitches with uniform tension on a piece of cloth.	Learner makes tacking stitches with uniform tension on a piece of cloth.	Learner occasionally makes tacking stitches on a piece of cloth.	Learner needs assistance to make tacking stitches on a piece of cloth.
Observe safety precautions during needlework.	Learner consistently observes safety during needlework.	Learner observes safety during needlework.	Learner observes some safety measures during needlework.	Learner needs assistance to observe safety measures during needlework.

Strand	Sub strand	Specific learning outcomes	Suggested learning experience	Key inquiry question(s)
	5.3 Fixing a button **(3 lessons)**	By the end of the sub strand, the learner should be able to: a) identify the use of buttons in clothes and household articles; b) state factors to consider when choosing a button for a garment; c) choose buttons for different garments; d) fix a button on a garment; e) practice safety while fixing a button on a garment; f) appreciate a well fixed button on a garment.	• Learners observe different clothes and household articles with buttons and discuss their use. • In purposive groups, learners brainstorm on the factors to consider when choosing a button to fix on a garment. • Learners use pictures, realia and charts to choose the right button to fix on a garment. Learners with motor and manipulative difficulties such as those with missing limbs and those with cerebral palsy could use alternative functioning parts of their body or appropriate assistive technology or be assisted by peers or teacher aide or teacher to perform given tasks. (This adaptation applies here and in bullet 5 and 6 below). • Learner observes demonstration on fixing a button on a garment.	1. What do you look for when choosing a button? 2. How do you fix a button?

			• Learner fixes the button on a garment. Larger buttons with large button hole should be provided for learners with coordination problems. • Learner practices safety while fixing a button on a garment.	

Core competencies to be developed:
Life Skills Issues:
Self-Efficacy – developed when fixing a button;
Critical Thinking and Problem Solving – when choosing the right button to fix on a garment;
Communication and Collaboration – when working together.

Links to Pertinent and contemporary issues (PCI): **Social Economic Issues: Safety** – when fixing the button on a garment; **Health Issues: Hygiene** – good grooming.	**Links to Values:** **Responsibility** - independence in fixing own button.
Links to other Learning Areas: • **Mathematics** – knowing number of buttons to be fixed and also number of holes in a button in order to determine mode of fixing; • **Art and craft** – choice of proper colour in matching the button with the garment.	**Suggested Community Service Learning Activities:** Sensitize other pupils in school on how to fix buttons on garments.
Suggested Non Formal Activities: Compose songs/poems on good grooming.	**Suggested Assessment Modes:** Checklist, project, critique, observation, oral questions, written tests, self and peer assessment.

Suggested Learning Resources: Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers multipurpose stamp, universal cuffs; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices, voice amplifiers); needles, scissors, tape measure, ruler, pins, thimble, sewing threads, piece of cloth, buttons of different sizes, pictures, video clips, audios and charts on needle work tools and stitches, larger adapted wooden needles, large size needles; Multipurpose communication board

Other related service providers: Physiotherapist, Occupational therapist, Resource person (Tailor), Teacher aide

Assessment Rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identify the use of buttons in clothes and household articles	Learner effectively identifies the use of buttons in clothes and household articles.	Learner identifies the use of buttons in clothes and household articles.	Learner identifies some uses of buttons in clothes and household articles.	Learner rarely identifies uses of buttons in clothes and household articles.
State factors to consider when choosing a button for a garment	Learner consistently states factors to consider when choosing a button for a garment.	Learner states factors to consider when choosing a button for a garment.	Learner attempts to state factors to consider when choosing a button for a garment.	With guidance, learner states factors to consider when choosing a button for a garment.
Choose buttons for different garments	Learner appropriately chooses buttons for different garments.	Learner chooses buttons for different garments.	Learner attempts to choose buttons for different garments.	With assistance, learner chooses buttons for different garments.
Fixing a button	Learner accurately and neatly fixes a button on a garment.	Learner fixes a button on a garment.	Learner attempts to fix a button on a garment.	Learner needs guidance to fix a button on a garment.
Practice safety while fixing a button on a garment	Learner consistently practices safety while fixing a button on a garment.	Learner practices safety while fixing a button on a garment.	Learner occasionally practices some safety measures while fixing a button on a garment.	Learner needs guidance to practice safety measures while fixing a button on a garment.

Strand	Sub strand	Specific learning outcomes	Suggested learning experience	Key inquiry question(s)
	5.4: Laundry work **(12 lessons)**	By the end of the sub strand, the learner should be able to: a) state reasons for laundry work in caring for clothes and household articles; b) identify resources required for carrying out laundry work; c) describe the steps in laundering a handkerchief; d) launder a handkerchief as an item of personal hygiene e) observe safety while laundering a handkerchief; f) care for and store laundry equipment and materials for safety and durability; g) appreciate properly laundered personal items.	• In purposive groups, learners discuss reasons why laundry work is important in care of clothes and household articles. • Learners brainstorm on the resources required for carrying out laundry work. • Learners watch a video or a demonstration of steps on laundering different personal items (mending, sorting, soaking, washing, rinsing, drying, ironing, airing, storage). • In purposive pairs, learners discuss steps followed when laundering different personal items. Learners watch a video or a demonstration on laundering different personal items (handkerchief – white and colored, socks, stockings, and inner wear). **NB:** Teacher to bring a new inner wear for demonstration.	1. Why is laundry work important in taking care of personal items? 2. What are the steps of laundering different personal items? 3. How do we take care of the resources used in laundry work?

			• **Learners practice laundering of different personal clothing items (handkerchief – white and colored, socks, stockings, inner wear). Learners with manipulative difficulties such as those with missing limbs, or those with cerebral palsy could use alternative functioning parts of the body or be assisted by peers or teacher aide or teacher in this activity. Observe safety precaution for learners with epilepsy and those with chronic health impairments such as asthma as they use different detergents as well as water. Let the learners use large, shallow basins or buckets on stable surfaces. Learners with short stature and those on wheelchairs as well as scooter boards could work on lowered work tops or cut-out tables and use low water taps or sinks. Those with floppiness, spinal injury and spinal curvature**	

			could require appropriate positioning devices such as floor seaters, prone wedges and straps. • Learners watch a video or a demonstration on safety when laundering personal items. • Learners demonstrate responsibility in caring for and storing cleaning equipment and materials. Learners with brittle bones and those with muscular dystrophy could be given lighter tasks. • Learners appreciate laundering of personal clothing items.	

Core competencies to be developed:

- **Communication and collaboration**: -this will be developed as learners work in purposive pairs and groups.
- **Critical Thinking and Problem Solving: -** this will be developed as learner's laundry materials and adapt cleaning materials for those with special needs.

Links to Pertinent and contemporary issues (PCI): • **Health Related Issues: Personal Hygiene** – promotes healthy living by using clean and neat personal items, good grooming; • **Social Economic Issues: Environmental Issues** – in managing resources (reusing water and soap).	**Links to Values:** • **Responsibility** - when caring for personal items; • **Unity** - when working in pairs and groups.
Links to other Learning Areas: • **Science and Technology** – when using detergents; • **Mathematics** – in using the correct amount of water and detergents.	**Suggested community service learning activities:** Learners sensitize their immediate peers to participate in washing of personal items.

Suggested Non Formal Activities: • Compose songs/poems on good grooming; • Use the home science club to sensitize the school community on good grooming.	**Suggested Assessment modes:** Observation, checklist, critique, oral questions, written tests, self and peer assessment.
Suggested Learning Resources: **Assistive technology (adapted pens or pencils, pen or pencil grips, book holders and page turners, head or mouth pointers multipurpose stamp, universal cuffs; Adapted digital resources (Teacher Digital Devices, Learner Digital Devices, voice amplifiers); Laundry work resources, personal effects, pictures, low water taps, video clips, audios on laundry work, handkerchief (white and coloured), socks, stockings, innerwear; Multipurpose communication board.**	
Other related service providers: Physiotherapist, Occupational therapist, Resource person (Tailor), Teacher aide	

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