Republic of Zambia

Ministry of Education

EARLY CHILDHOOD EDUCATION

PRE-MATHEMATICS AND SCIENCE

TEACHING MODULE

LEVEL 1:3-4 YEARS

TERM 1

AUTHORS

1. Alfred Muyambo — Chalimbana University, Chongwe
2. Clive Moonga — Mansa College of Education, Mansa
3. Gladys Malambo — Muyoma Primary School, Lusaka
4. Melvies Lengwe — Ntenke Primary School, Kawambwa
5. Muyangali Muyangali — Kitwe College of Education, Kitwe
6. Normal Zimba — Vera Chiluba primary school, Lusaka
7. Naomi Phiri — Mambilima primary school, Lusaka
8. Patricia Mutongwa — Chitamalesa Primary School, Rufunsa
9. Sidia Sambinga — Kambanda Primary School, Mwinilunga

Coordinators

1. Samson Njapau . Directorate of Curriculum Development, Lusaka
2. Kenneth Mudenda — Directorate of Curriculum Development, Lusaka
3. Shelly Sikwale — Directorate of Curriculum Development, Lusaka
4. Kennedy Mundongo — Directorate of Curriculum Development, Lusaka
5. Jane Chisangano — Directorate of Curriculum Development, Lusaka
6. Martha Lisulo — Directorate of Curriculum Development, Lusaka

VISION

Quality, life- long education for all which is accessible, inclusive and relevant to individual, national and global needs.

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Preface

The Pre-Mathematics and Science Teaching Module level 1 has been developed in line with the Competence Based Education principles which seek to link education to real life experiences. This Module contains content and activities based on the Pre-Mathematics and Science syllabus for level 1 and serves as a guide to the Teacher on how to handle learning activities and content which is age-appropriate for learners aged 3 to 4 years. The Module aims to facilitate the provision of quality education that is aligned with the Competence-Based Curriculum. Furthermore, the Module aims to support the Teacher on how to help learners attain the competences, knowledge, skills, values and positive attitudes that enable learners to live and grow into productive and useful members of their family, communities and the Zambian society as a whole.

The activities and content provided in this Module helps the Teacher to facilitate holistic development of learner's physical, mental, emotional, social, and moral faculties. The suggested activities are designed to offer learners hands-on experiences through manipulation of real objects, interaction with artificial and natural environments and learning through play. Thus, the learning will develop the competences needed for their personal and national development.

The module aims to support Early Childhood Education teachers in the implementation of the CBC in the absence of approved text books. It therefore reflects the Ministry's unwavering commitment to making this journey as smooth as possible for teachers. However, teachers are encouraged to supplement this module with their own research and innovations in order to address any gaps that may arise during implementation.

It is hoped that this Module will make learning Pre-Mathematics and Science more meaningful and enjoyable as it is highly activity-oriented. Therefore, this Module aims to harness and enhance these innate abilities, support in building a solid foundation for Science, Technology, Engineering and Mathematics (STEM) education and smooth transition to lower primary.

Joel Kamoko (Mr.)
Permanent Secretary- Educational Services
MINISTRY OF EDUCATION

Acknowledgement

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We also extend our gratitude to the Zambia Education Enhancement Project (ZEEP) for the financial support and Zambia Educational Publishing House (ZEPH) for the technical support towards the development and finalization of the module.

Finally, we appreciate the commitment and hard work of the staff at the Curriculum Development Centre in ensuring the successful completion of the module development process.

Charles Ndakala, (Dr.)
Director – Curriculum Development
MINISTRY OF EDUCATION

HOW TO USE THIS MODULE

Read the Module Introduction to understand the learning activities, teaching and learning materials needed, and assessment guide;

1. **Prepare the teaching and learning materials:** Gather all necessary materials and resources before conducting the learning activity.
2. **Follow the learning activity**: Conduct the activity as outlined, using the suggested activities and tasks.
3. **Assess and Evaluate**: Use the assessment guides to evaluate learners' understanding, progress and attainment of the prescribed competences from the syllabus.
4. **Adapt and Modify**: Be flexible and willing to adapt the activity to meet the diverse needs of your learners.
5. **Use of Simple language and Code switching**: When giving instructions to the learners, it is important to use simple English language or code switching in a familiar local language that is easy to understand. Use simple words and phrases that learners can understand. By using simple language and code switching, you can help learners build a strong foundation in language and communication.

Tips for Successful Implementation

- Create a positive and supportive learning environment for learners
- Encourage active participation and engagement from the learners
- Use visual aids and real-life examples to reinforce learning
- Provide opportunities for learners to practice and apply what they have learned

Introduction

The Pre-Mathematics and Science Teaching Module is designed for Early Childhood Education learners, focusing on foundational concepts in mathematics and science. The module is divided into sections with specific learning activities, aimed at sparking curiosity, nurturing foundational skills. It aims to create a dynamic and stimulating environment where learners can joyfully discover the wonders of Mathematics and Science. This module provides guidance to teachers on how to help learners key competences such as Collaboration, Communication, Creativity thinking, Critical thinking, problem-solving, aiming to harness and enhance these innate abilities in learners, building a solid foundation for STEM education and smooth transition to lower primary education level.

Suggested Teaching and Learning Materials

Early childhood education is crucial for cognitive, social-emotional, and physical growth. Effective teaching materials are essential for engaging, interactive, and play-based learning experiences. These materials foster a love for learning, promote academic readiness, and develop essential skills. These materials are flexible and adaptable to meet diverse needs and interests. The module provides guidance on suggested materials, but it is not conclusive and teachers should improvise based on the learning environment.

Learning Environment Set Up

A well-designed learning environment is key for learner's cognitive, social-emotional, and physical development, fostering curiosity, independence, self-confidence, and a desire for learning. The learning environment set-up aims to create a safe, inclusive, and engaging space.

- **Natural Environment**: A natural learning environment is a setting where learners explore and learn naturally, often without explicit instruction or formal teaching, such as in school surroundings
- **Man-Made Environment:** Man-made learning environments are intentionally designed safe spaces, such as classrooms, laboratories, and libraries, designed for formal instruction, hands-on activities, and games and songs
- **Technological Learning Environment:** Access educational apps, games, and software for learning, including game-based platforms, virtual platforms, and simulations, to engage learners and promote learning

Safety in the Learning Environment

Introducing clear safety rules and expectations in an engaging manner can help learners develop life skills for safety and responsibility in the learning environment, allowing them to focus on learning and having fun.

Suggested Teaching Methodology

Teaching Pre-Mathematics and Science to learners requires methods that are engaging, hands-on and developmentally appropriate. Below are some of the prescribed effective teaching methodologies to be used in the learning activities.

- Play-based learning
- Manipulatives and concreate objects
- Nature walk
- Group work/Collaboration
- Demonstration
- Problem Solving

The choice of teaching methodology should align with learners' desired competence and consider resources, space, and equipment availability. Teachers should have reasons for choosing a method and employ strategies to make lessons interesting.

Learning Activities

Learning activities are intentional educational experiences aimed at promoting learning, engagement, and achievement among learners. Facilitated by teachers, they help acquire new knowledge, skills, attitudes, and behavior change. To create an inclusive environment, teachers should use a "hook" to introduce new learning activities in an interactive and interesting way.

Icons used in this Module

This module utilises icons as visual symbols or graphics to represent instructions, enhancing the learning experience for learners. Icons categorize and organise instructions, making navigation easier for teachers.

Key Terms


Assessment Guide


Skills developed

 Learner Activity  Tips/Safety precaution  Key learning pointrs/Summary

Assessment Methods

Assessment is important in Early Childhood Education, guiding instruction, learning, and progress. Formative and summative assessments are used, with formative focusing on ongoing evaluation and summative providing comprehensive evaluations at specific points. This module highlights some of the various types of assessments suitable for early childhood learners.

Formative Assessments

- **Observations:** Watching learners as they play, learn, and interact with others.
- **Checklists:** Using standardised or teacher-created checklists to track children's progress and development.
- **Performance tasks** (Portfolios): Collections of learners' work samples, artwork, and achievements over time
- **Feedback**: Engaging in conversations and interviews with learning to assess their thinking, understanding, and communication skills.

Summative Assessments

- **Performance Tasks**: Designing specific tasks that require learners to demonstrate their learning and to assess their learning, creativity, and communication skills.
- **Rubrics:** Using rubrics to assess children's work and provide feedback on their performance.

Time Allocation

The standard period allocation for Pre-Mathematics and Science at Early Childhood Education level has been prescribed in the Zambia Education Curriculum Framework (ZECF) of 2023. The minimum teacher–learner contact time is **5 hours** per week for ages 3-4 years, translating into **10 periods.**

The duration for a single period is **30 minutes.**

Key Competences To Be Developed

S/N	Competence	Descriptors
1.	Analytical Thinking	• Identify patterns • Compile data, create mental images and address issues • Evaluate solutions
2.	Communication	• Use mathematical/scientific language in different situations. • Express oneself using different media and symbols • Ask for feedback
3.	Creativity and Innovation	• Explore the objects around them. • Show creativity and innovativeness • Explore areas of interest
4.	Collaboration	• Solving puzzle in groups • Play with peers to build relationships • Participate in and express themselves through play activities
5.	Critical Thinking	• Ask and answer simple questions • Classify objects according to their attributes • Manipulate different objects • Solve simple problems in life • Match different things according attributes • Arrange objects according to attributes • Compare similarities or differences between objects • Explore the environment
6.	Environmental Sustainability	• Dispose waste in the designated place. • Adhere to best practices in environmental management. • Identify a clean environment. • Identify types of waste in local environment.
7.	Financial Literacy	• Identify the forms of money • Demonstrate the ability to use money • Make a choice of what to buy.
8.	Problem Solving	• Make connections/link with the inner world or social environment • Use numeracy patterns and relations to solve problems.

S/N	Competence	Descriptors
		• Manipulate numbers, shapes and symbols to complete a task

TOPIC: Exploring My World

Introduction

This topic Exploring my world is designed to help learners explore the environment. It covers three sub-topics; ***Grouping Things***, ***Numbering Things*** and ***Things in the Surroundings***. These Sub-Topics are meant to help to foster curiosity, critical thinking and problem-solving skills through grouping and sorting things from the environment.

Key Competences:

- Analytical Thinking,
- Communication,
- Critical thinking,
- Collaboration,
- Problem solving,

Sub-Topic 1: Grouping Things

Introduction: Grouping things is putting things together according to their groups, characteristics or features. It can be taught by involving play, songs, craft and outdoor activities to enhance the development of skills such as Collaboration, Communication and Critical thinking.

Specific Competence

- Grouping things according to their characteristics

- **Comparison** - evaluating and contrasting two or more objects, ideas, or quantities to identify similarities and differences.
- **Counting** - is the way of determining the number of items in a set or collection.
- **Habitat** is the natural environment in which a plant or animal lives.
- **Grouping** -process of organizing items into categories based on shared characteristics.
- **Length** - measure of how long something is from one end to the other.
- **Living things**- organisms that exhibit characteristics of life such as growth.
- **Measurement** -way of assigning a numerical value to a physical quantity, such as length, weight, or capacity.
- **Non-living things**-objects or materials that do not have the characteristics of life
- **Pattern** - repeated sequence or arrangement of objects, colors, shapes, or other elements.
- **Sorting**- process of arranging items based on defined criteria

Key Concepts:

1. Classification
2. Counting
3. Environment
4. Habitats
5. Measurement
6. Patterns

Learning Activities

Learning Activity 1: Sorting Living and Non-living things

In this activity is designed to help learners on how to sort living and non-living things in our environment (surroundings). There are four sub-activities which learners should be engaged in to sorting things in the surroundings.

HOOK: ***What things can we see outside the classroom?***

Activity 1.1: Nature Walk in the surroundings

This activity requires that learners are taken outside the classroom to explore the natural environment. Exploring the natural environment can help the learners differentiate living things.

Suggested Teaching and Learning Materials:

- **Natural Materials**: Stones, Sand, Sticks, Plants, Animals, Rocks, Leaves.
- **Artificial Materials:** Buildings, Cars, Glue, Scissors, Crayons.

Learning Environment set-up: School surroundings/Any suitable safe space (Natural Environment)
Teacher's Roles:

- Take the learners for a nature walk
- Ask the learners to identify things they are able to see in the school surroundings
- Ask learners to sort the objects into living and non-living things in the school surroundings


: *Encourage learners not to touch plants, animals, or other objects that may be hazardous*


:

- Learners' nature walking in the school surroundings

- Learners' sorting the objects into living and non-living things as they see them in the school surroundings


:

- Observe learners following instructions to stay alert and aware of their school surroundings.
- Observe learners sorting the objects into living and non-living things as they see them in the school surroundings


: Communication, Collaboration, Critical thinking, Observation.

Activity 1.2: Molding Living and Non-living Things

This activity is about molding animals and plants models. This activity is meant to help learners improve their creativity and analytical thinking about living and non-living things.

Suggested Teaching and Learning Materials:

- **Natural Materials**: Molding clay, Water
- **Artificial Materials:** Plasticine/Play dough

Learning Environment set-up: School surroundings or Classroom building /any suitable safe space (Natural or Artificial Environment)

Teacher' Roles:

- Review the concepts of living and non-living things
- Provide learners with modeling clay or play dough
- Ask learners to mold different models of living and non-living things


: Learner's molding living and non-living things.

 :

- Observe learners' molding living and non-living things models during the activity
- Evaluate learners' models and understanding of living and non-living things after the after activity

 : *Provide additional support and scaffolding, such as using visual aids or providing one-on-one instruction*

 : Collaboration, Communication, Critical thinking, Creativity, Fine motor, Observation,

Activity 1.3: Sorting of living and non-living things

The picture cards will provide learners with objects that they are not able to find in the immediate environment and therefore strengthen learners' ability to sort living and non-living things. This activity can be done in both the natural or artificial environment depending on the appropriateness of space.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Picture cards (cut outs) of living and non-living things, models of living and non-living things (e.g Toy animals, cars)

Learning Environment set up: Classroom/any suitable safe space (Artificial Environment)
Teacher's Roles:

- Prepare the picture cards and sorting mats/containers.
- Put learners in small groups.
- Show the learners a picture card and ask, "Is this a living thing or a non-living thing?"
- Have learners sort the picture card into the corresponding grouping (Living or Non-Living).
- Repeat the process with multiple picture cards.
- Ask learners to sketch and colour the picture cards of living and non-livings
- Observe and record their responses

 :

- Learners sorting the picture cards into living and non-living things groups
- Learners sketching and colouring the picture cards of living and non-livings

 :

- Observe learners sorting picture cards into living and non-living things
- Observe learners sketching and colouring picture cards of living and non-living things

 : *Provide additional support and scaffolding, such as using visual aids or providing one-on-one instruction*

 : Collaboration, Communication, Critical thinking, Fine motor

Activity 1.4: Collage making for living and non-living things in the classroom

This activity is about collage making. The collage making help learners become creative, critical thinkers, problem solvers using different images depicting living and non-living things.

Suggested Teaching and Learning Materials:

- **Natural Materials:** Stick substance
- **Artificial Materials:** Glue/Bostick, Plain paper, Scissors, Card board, Cut outs, Crayons

Learning Environment set up: Classroom /Any suitable safe space (Artificial Environment)

Teacher's Roles:

- Prepare the picture cards or cutouts from magazines, calendars, newspapers and sorting mats/containers of living and non-living things

- Review the concept of living and non-living things
- Show the learners a picture card and ask, "Is this a living thing or a non-living thing?"
- Put learners' small groups
- Provide learners with picture cut outs of living and non-living things
- Have learners sort the picture card into the corresponding grouping (Living or Non-Living).
- Repeat the process with multiple picture cards.
- Demonstrate collage making techniques to the learners
- Ask learners to create a collage featuring living and non-living things
- Ask learners to a tell story by describing their collage and the objects they used

 **:** *Avoid using harmful natural stick materials because some learners may be allergic to them.*

 **:**

- Learners making a collage featuring living and non-living things
- Learners telling stories to describe their collage and the objects they used

 **:**

- Evaluate learners making a collage featuring living and non-living things
- Observe learners telling stories to describe their collage and the objects they used

 **:** *Provide additional support and scaffolding, such as using visual aids or providing one-on-one instruction*

 **:** Creativity, Collaboration, Fine motor, Problem solving

Learning Activity 2: Counting Things 1-5

This activity is about exploring our environment and learn about counting living and non-living things. In this activity, learners will learn how to count living things, like animals and plants, and non-living things, like cars and chairs. Help learners explore their classroom, school, and community to find examples of living and non-living things. There are three sub-Activities under this activity which should be used to help learners count living and non-living things 1-5 in the environment.

Activity 2.1: Counting Things -Outdoor
This activity is about counting things outside the classroom. It is designed to help learners to develop counting skills and build their understanding of the concept of living things and non-living things.

Suggested Teaching and Learning Materials:

The suggested teaching and learning materials can be sourced from the natural and artificial environment.

- **Natural Materials:** Animals, Plants, People, Trees…
- **Artificial Materials:** Buildings, Cars, Bicycles, Stones, Motor bikes…

Learning Environment set up: School surroundings/Any safe space outside the classroom (Natural Environment)

Teacher's Roles:

- Let learners explore the school environment to observe things around
- Take learners on a guided walk outside the classroom
- Ask learners to count objects, such as leaves on a tree, flowers in a garden, Birds in a tree, Cars in a parking lot

 :

- Learners exploring the school environment to observe things around
- Learners counting living things 1-5 (e.g. plants, leaves on a tree, flowers in garden, animals, people) they see things from the natural environment.

- Learners counting non-living things 1-5 (buildings, cars in a parking lot, bicycles, motor bikes…) they see things from the natural environment


:

- Observe learners counting things outside the classroom
- Evaluate learners counting of things outside the classroom correctly


: *Provide additional support such as using visual aids or providing one-on-one instruction*


: Collaboration, Communication, Counting, Observing,

Activity 2.2: Classroom exploration and Counting things 1-5

This activity is allowing learners to relate and discover their classroom environment through hands-on, self-directed learning experiences. This approach encourages learners to use their natural curiosity and senses to learn about their surroundings, develop problem-solving skills, and build confidence.

Suggested Materials and Teaching Materials:

- **Natural Materials:** Plants/fresh leaves/fresh fruits…
- **Artificial Materials:** Books, Crayons, Pencils, Balls, Toys/Dolls …

Learning Environment set up: Classroom /Any suitable safe space (Artificial Environment)

Teacher's Roles:

- Review counting of things 1-5
- Provide materials such as Plants or fresh leaves, fresh Fruits, Books, Balls, Toys/Dolls, Pencils in groups of five each
- Display the materials in front of the classroom
- Let individual learners count the materials in group of five starting with living things by looking at their characteristics
- Ask learners to repeat the counting materials with a focus on non-living things in groups of five
- Allow learners to explore the classroom, encouraging them to engage with materials and activities

 :

- Individual learners taking turns to count the materials provided in groups of five by pointing at different items which are in front of the classroom correctly
- Learners counting the materials in group of five starting with living things by looking at their characteristics
- Learners to repeating the counting materials with a focus on non-living things in groups of five
- Learners to exploring the classroom, encouraging them to engage with materials and activities

 :

- Observe learners exploring and engaging with the classroom environment
- Evaluate learners counting things 1-5

 **:** *Provide additional support and scaffolding, such as using visual aids or providing one-on-one instruction*

 **:** Analytical thinking, Collaboration, Communication, Critical thinking, Fine motor,

Activity 2.3: Counting games (Hide and Seek and Counting Scavenger Hunt)

In this activity, you will embark on two exciting counting journeys: Hide and Seek and Counting Scavenger Hunt. These games are designed to help learners develop their counting skills, problem-solving abilities, and critical thinking. They are interactive counting games centered on living and non-living things and provide a fun as they help learners develop numeracy skills while exploring their natural world.

Suggested Teaching and Learning Materials:

- **Natural Materials:** Animals, Insect, Plants…
- **Artificial Material:** Books, Toys, Balls …

Learning Environment set-up: Classroom /any suitable safe space (Artificial Environment)

Teacher's Roles:

- Prepare a Hide and Seek/Scavenger hunt game with living things (e.g. Plants…) and five non-living things (e.g.Toys…) for learners to find around the classroom or designated area
- Put the learners into groups
- Hide five living things (e.g. Plants…) and five non-living things (e.g.Toys…) in the classroom
- Ask one group of learners to search for hidden living things and the other to search for hidden non-living things
- Ask learners to count the things as they find them

 : *The group which finds all the five hidden things first wins the game*

 **:** Learners count the things as they find them, ensuring the total is counted up to 5

 **:**

- Observe learners' counting the hidden things 1-5 correctly
- Observe learners' problem-solving during gameplay

 **:** Collaboration, Counting, Observing, Problem solving.

Learning Activity 3: Exploring places where living things are found

Exploring places where living things are found in the environment will encourage learners to think critically about different living conditions of living things.

Activity 3.1: Nature scavenger hunt exploration

The Nature Scavenger Hunt activity involves identifying various plants, animals, textures, and patterns in nature, with the goal of finding and recording as many items as possible. This activity will help learners identify different places where living things are found.

Suggested Teaching and Learning Materials

- **Natural Materials**: Pictures of Trees, Ponds, Grass, Flower beds

Learning Environment set-up: School surroundings/Any suitable safe place (Natural Environment)
Teacher's Roles:

- Take learners around the school surroundings
- Encourage learners to observe places where insects, birds and plants are found

 **:** *Caution learners to avoid touching insects and plants as some might be harmful and allergic to them*

 :

- Learners locating places where living things are found
- Learners observing places where insects, birds and fish under in fish

 **:** Observe learners locating places where living things are found

 **:** Communication, Collaboration, Critical thinking, Fine and Gross motor, Problem solving

Learning Activity 4: Matching familiar living things according to the places they are found

In this activity, the focus is the different places where familiar living things are found (habitats). This activity is to be done by matching pictures of living things to their correct places where they are found, such as; Farm, Forest, River, Garden, Home and other places.

HOOK: ***Have you ever wondered where animals like birds, fish, and dogs live? Or where plants like flowers, trees, and grass grow?***

Activity 4.1: Nature walk in the School surroundings

In this activity you will guide learners on how to locate correct places where living things are found. By the end of this activity, learners are expected to identify places where living things are found.

Suggested Teaching and Learning Materials

- **Natural Materials:** School Garden, nearby park, Nests, Poultry Piggery, Kraal
- **Artificial Materials:** Picture cards of different living things (e.g.birds, squirrels, flowers, trees…)
- **Technological Materials:** Tablets/IPads/Videos/Simulations showing where living things are found

Learning Environment set-up: School surroundings/Any suitable safe space (Natural Environment)

Teacher's Roles:

- Take learners on a nature walk around the school surroundings or a nearby park.
- Encourage learners to observe their school surroundings and look for living things and places where they are found (habitats)

- As you walk, stop at different locations and ask the learners to locate and places where living things are found (e.g., forest, garden, park, pond).
- Show learners the habitat cards or use a video/simulation where living things are found
- Ask learners to match the living things they see to their correct habitats.

 **:** *Be aware of any allergies that may be triggered by the nature walk (e.g., bee stings, plant allergies). Teach learners not to touch or handle plants, animals, and insects during nature walk.*

 **:** *In case where a nature walk is not possible, provide a modified nature walk route or use pictures and videos to simulate the experience.*

 **:**

- Learners' nature walking around the school surroundings or a nearby park.
- Learners observing their school surroundings and look for living things and places where they are found (habitats)
- Learners locating places where living things are found (e.g., forest, garden, park, pond).

 **:** *Be aware of any allergies or medical conditions that may be triggered by the nature walk (e.g., bee stings, plant allergies). Teach learners not to touch or handle plants, animals, and insects during nature walk.*

 **:** Observe learners' ability to identify places were living things are found, such as gardens, parks and pond

 **:** Analytical thinking, Communication, Collaboration, Observing

Activity 4.2: Matching Game- Matching pictures of living things to their correct places they are found

In this activity you will help learners match pictures of living things to their correct places where living things are found. By the end of this activity, learners are expected to identify and match familiar living things to their correct places where they are found.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Picture cards of familiar living things

Learning Environment set-up: Classroom/any suitable safe space (Artificial Environment)

Teacher's Roles:

- Provide a set of picture cards or objects featuring familiar living things (e.g. dog, birds, fish, tree).
- Provide a set of picture cards or objects featuring different places where livings are found (e.g. park, bush, river, and farm)
- Shuffle the cards and lay them out face down.

 **:** Learners taking turns flipping over two cards at a time to find a match (e.g. fish to river….).

 **:** Observe learners as they match a set of pictures of familiar living things provided to the places where they are found. Trucking the number of correct matches made by each learner.

 **:** Communication, Collaboration, Critical thinking, Hand-eye-coordination

Learning Activity 5: Creating Patterns

This activity is creating patterns using natural materials from the local environment. As a teacher, you can support learners create their own patterns using natural materials, encouraging critical thinking and problem-solving. This activity encourages learners to analyze, identify, and make predictions, allowing them to express themselves creatively and bring their ideas to life.

HOOK: ***Have you ever noticed patterns in the world around you? Like the stripes on a zebra***

Suggested Teaching and Learning Materials

- **Artificial Materials:** Glue, Paper, Crayons, Leaves, Seeds, Stones, Flowers, Paint

Teacher's Roles:

- Take learners outside the classroom
- Guide learners to collect various natural materials like leaves, twigs, and stones, from the school environment
- Provide learners with seeds
- Demonstrate to the learners on how to stick them in their books to come up with different patterns.
- Ask learners create different patterns of leaves, patterns of stones, patterns of seeds and so on in their books (using glue or any other sticking materials).
- Ask learners to create patterns using natural materials they picked by dipping the leaves in paint and pasting them in their books.

 :

- Learners' collecting various natural materials like leaves, twigs, rocks, and seeds.

- Learners making different patterns of leaves, patterns of stones, patterns of seeds and so on in their books (using glue or any other sticking materials).
- Learners making patterns using natural materials they picked by dipping the leaves in paint and pasting them in their books.

 **:**

- Observe learners making different patterns of leaves, patterns of stones, patterns of seeds and so on in their books (using glue or any other sticking materials).
- Observe learners making patterns using natural materials, they picked by dipping the leaves in paint and pasting them in their books.

 **:** Collaboration, Communication, Creativity, Critical thinking, Hand-eye-coordination

 **:** *Be aware of any allergies or medical conditions that may be triggered by some plants (e.g. plant allergies). Provide leaves which are not harmful.*

Learning Activity 6: Measuring length of different things

This activity is about measuring lengths of different things using non-standard units. Measuring length is an important skill that helps us understand the world around us. This activity looks at how to measure the length of different objects using non-standard units.

HOOK: ***How long is a……? "Let's Get Measuring!"***

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Pencils, Plastic Bottles, Books using strings, shoe laces

Learning Environment set-up: Classroom/any suitable safe space (Artificial Environment)

Teacher's Roles:

- Put the learners into groups.
- Show the learners a variety of objects to be measured in the classroom such as *pencils, plastic bottles, books*.
- Ask learners to measure the length of different objects, such as *a pencils, plastic bottles, books* using *strings, shoe laces*
- Provide additional support to the learners as they strive to measure various objects such as *pencils, plastic bottles*.

 **:** Learners measuring the length of different objects, such as pencils*, plastic bottles, books* using strings, shoe laces.

 **:** Observe learners measure the lengths of different objects such as a pencil, plastic bottles, books using strings, shoe laces.

 **:** Collaboration, Communication, Fine motor and Gross motor, Measuring, Observing.

: *Avoid using standard units of measure.*

Learning Activity 7: Comparing lengths of different things

This activity teaches learners to compare lengths using non-standard units and terms like "longer," "shorter," "same," and "different," focusing on understanding the relationship between different things through two sub-activities.

HOOK: ***Can you find things around you that are long and short?***

Activity 7.1: Looking at different lengths

Comparing lengths is an important skill that helps us understand the world around us. In this activity, you will help learners on how to compare the lengths of different things. Learners will use words like ***Long*** and ***Short***.

Suggested Materials and Learning Materials:

- **Natural Materials;** Sticks, grass stems of different lengths
- **Artificial Materials**: Pencils, Crayons of different lengths

Learning Environment set-up: School surrounding/any suitable safe space (Natural environment)

Teacher's Roles:

- Take learners outside the classroom to pick sticks or grass stems of different lengths
- Let the learners go back to the classroom
- Put learners in groups
- Guide learners to arrange the sticks from long to short in their groups.

 : *Caution learners not to touch any harmful things when handling materials from outside the school surrounding.*

 : Learners arranging the sticks from long to short in their groups.

 : Observe learners arranging the sticks from long to short in their groups.

 : Analytical thinking, Comparison, Collaboration, Critical thinking, Observation.

Activity 7.2: Comparing the lengths of different things (Long or short)

This activity is about comparing the lengths of different things. Words like ***Long*** or ***Short*** will be used to describe lengths of different objects.

Suggested Teaching and Learning Materials

- **Artificial Materials:** Pencils, Crayons, Books, Blocks, Toys

Learning Environment set-up: Classroom/any suitable safe space (Artificial Environment)

Teacher's Roles:

- Provide learners with a set of objects such as Pencils, Crayons, Books, Blocks, Toys
- Ask learners to sort the objects by length (e.g., from shortest to longest)

 : learners sorting the objects by length (e.g., from shortest to longest)

 : Observe learners to sort the objects by length (e.g., from shortest to longest)

 : Analytical thinking, Communication, Collaboration, Fine motor, Problem Solving,

Expected Standard: Things grouped according to their different attributes

Summative Assessment Guide

1. **Oral Counting**
   Prepare oral counting activity where learners can
   - Correctly count numbers 1-10 orally
2. **Counting Living and Non-Living Things**
   Provide learners with Living and Non-Living things for a counting activity where learners can;
   - Correctly count living/non-living things up to 5
3. **Sorting Living and Non-Living Things**
   Provide learners with Living and Non-Living things for a counting activity where learners can
   - Accurately sorts living and non-living things in the environment
4. **Counting Living and Non-Living Things**
   Provide learners with Living and Non-Living things for a counting activity where learners can
   - Correctly count living and non-living things in the environment (1-5)
2. **Exploring Places where living things are found (Habitats)**
   Provide learners with Living things for a discovering places activity where learners can
   - Demonstrates understanding of places where living things are found
3. **Matching Living Things with the places they are found**
   Provide learners with Living things for matching living thing with places where they are found activity where learners can
   - Match familiar living things according to the places they are found
4. **Creating Patterns**
   Provide learners with materials for a creating patterns activity where learners can

- Create patterns using materials from the local environment.

5. **Measuring Lengths**
   Provide learners with different things for a measuring lengths activity where learners can
   - Measure lengths of different things using non-standard units.
6. **Comparing Lengths**
7. Provide learners with different things for a comparing lengths activity where learners can
   - Compare lengths of different things

 : These key learning points under the sub-topic ***grouping of things*** include the following:

Environmental Awareness

- Living things and non-living things can be sorted and identified in the environment.
- Living things can be found in different places, such as land, water, and air.
- Familiar living things can be matched to their corresponding habitats.

Number Sense and Pattern Recognition

- Living and non-living things can be counted up to 5.
- Patterns can be created using natural materials from the local environment.

Measurement and Comparison

- Lengths of different things can be measured using non-standard units.
- Lengths of different things can be compared.

Cross-Curricular Skills

- Observing and exploring skills
- Classifying and categorising skills
- Fine motor skills (through pattern creation and measurement activities)

Sub Topic 2: Numbering Things

Introduction:

Numbering is a process of giving a numeral value to things. Numbering things can be taught by incorporating songs, games, puzzles and outdoor exploration. These activities will help learners to discover and identify the fascinating things that make our wonderful world using numerical journey.

Specific Competence:

- Recognise Numbers

- **Oral counting** -way of verbally counting a sequence of numbers
- **Counting things**-way of counting a set of objects
- **Number identification**-The ability to recognize and identify numbers either orally or visually
- **Written number recognition**-way to know and identify written numbers 1 through 5
- **Naming numbers** -The ability to verbally state the name of a number
- **Moulding numbers**-way of making physical representations of numbers
- **Addition**- way of combining two or more numbers to find their total or sum
- **Subtraction** -way of finding the difference between two numbers

Key Concepts

- Number sense
- Counting
- Addition and Subtraction
- Number representation
- Living and non-living things

Learning Activities:

Learning Activity 1: Counting orally numbers 1-10

Counting orally from 1 to 10 means saying the numbers out loud in order without using the written symbols. The following are some of the activities you can use to teach learners on recognising numbers. Choose activities that suit your teaching environment and abilities of your learners.

HOOK: ***Hello, let's count!***

Activity 1.1: Counting Rhyme

Counting rhymes are a fantastic way to engage young learners and help them to count things. You can effectively use counting rhymes to teach young learners count things in a fun and engaging way. This activity is about using a counting rhyme to teach learners to recognise numbers.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Number cards, Counting blocks, or pictures

Teacher's Roles:

- Gather visual aids such as number cards, counting blocks, or pictures to support the rhyme and help learners connect the numbers to things.
- Select a rhyme that is catchy, easy to follow, and aligns with your learning activity
- Begin by introducing the counting rhyme and reciting it
- Encourage learners to join in and recite the rhyme with you
- Ask learners to recite rhymes of numbers such as 1,2,3,4,5.
- Support learners as they to count orally correctly.

: Recite number rhymes such as 1,2,3,4,5 once I caught a fish alive …

: Observe learners during the counting rhyme activity and note their participation and engagement


: Collaboration, Counting, Communication, Ordering,

Activity 1.2: Snap, Clap and Stamp counting
By using the Snap, Clap, and Stamp counting method, you can create a fun and engaging learning environment that helps young learners develop essential counting skills.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Number cards, counting blocks, or pictures

Teacher's Roles:

- Decide on the counting range you want to focus on, such as 1-10.
- Put the learners in a circle
- Explain to the learners that they will be using three different actions to count: snapping their fingers, clapping their hands, and stamping their feet.
- Demonstrate each action and relate it to a specific number. For example:
  - Snap (1)
  - Clap (2)
  - Stamp (3)
- Start counting together, using the designated actions for each number. For example:
  - Snap (1)
  - Clap (2)
  - Stamp (3)
  - Snap (4)
  - Clap (5)….
- Encourage learners to join in and perform the actions as you count together
- As learners become more confident, slowly increase the counting range of numbers

 : Learners snap their fingers, clap their hands, and stamp their feet while counting orally

 : Observe learners follow along and count the numbers correctly using three different actions to count: snapping their fingers, clapping their hands, and stamping their feet.

 : Ordering, counting, communication, memory and recall and fine and gross motor skills.

Learning Activity 2: Counting living and non-living things 1-5

Counting living and non-living things is the way of identifying and counting items in the environment that are either alive or not alive. There are two sub-activities which you can use to help learners count living and non-living things.

HOOK: ***Can you count the number of fingers on your hand?***

Activity 2.1: Nature walk

Nature walk with early childhood learners is an opportunity for exploration, learning and connecting to the natural world. It's all about making the environment an exciting, hands-on classroom where learners can observe, ask questions and engage with what they see around them.

Suggested Teaching and Learning Materials:

- **Natural Materials:** animals, plants
- **Artificial materials:** stones, sticks, …

Learning Environment set-up: School surroundings (Natural Environment)

Teacher's Roles:

- Take learners outside the classroom surroundings.
- Ask learners to identify living and non-living things in the school surroundings.

 **:**

- Learners go outside the classroom mention living and non-living things as they see them in the school surrounding.
- Counting the living things and non-living things 1-5 as they see them in the school surrounding.

 **:** Observe learners differentiate living from non-living things while counting 1-5.

 **:** Collaboration, Counting, Communication, Gross motor

Activity 2.2: Puzzle making and Counting

This activity is about Puzzle making and counting things. This activity is designed to help learners develop problem-solving skills and practice counting numbers 1-5.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Cut out picture pieces of living and non-living things, mat or any flat surface card boxes,

Learning Environment set-up: Classroom (Artificial Environment),

Teacher's Roles:

- Put learners in groups.
- Give out the cut-out pictures pieces of living and non-living things to the groups
- Ask learners to learners completing the puzzles. identifying and grouping living and non-living things

:

- Learners completing the puzzles on a mat or any flat surface
- Learners counting cut-out pictures pieces of living and non-living things 1-5

:

- Observe learners completing the puzzles,
- Observe learners counting cut-out pictures pieces of living and non-living things 1-5
- Observe and record learners' responses

: Communicating, Collaborating, Counting, Critical thinking, Eye-hand coordinating, Fine motor, Problem solving,

Learning Activity 3: Identifying Numbers 1 - 5

Identifying numbers 1 - 5 using living and non-living things refers to the ability to recognise and identify these numbers by relating them to things within the environment. There are sub-activities which you can use to help learners identify numbers 1-5.

HOOK: ***Can you show me one finger?***

Activity 3.1: Number line

This activity involves the use of number line to identify numbers. Using a number line is a fantastic way to help learners visualise and understand the relationships between numbers. In this case, picture of living things such as plants or animals can be used to identify numbers.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Pictures of plants, animals

Learning Environment set-up: School surrounding/ any suitable safe space (Natural Environment) or Classroom (Artificial Environment)

Teacher's Roles:

- Decide on the range of numbers you want to focus on, such as 1-5
- Draw a large number line on the floor, whiteboard, or chart paper with numbers marked at regular intervals.
- Prepare number cards or printouts of plants/ animals with the numbers in the chosen range 1-5
- Place a picture of plants/ animals with one item on the first mark, a picture with two items on the second mark, and continue this pattern up to 5.
- Ask learners to hang number cards onto corresponding pictures while singing the song "number one, number one, where are you?"


: Learners hang number cards onto corresponding pictures while singing the song "number one, number one, where are you?"


:

- Observe learners hanging number cards onto corresponding pictures while singing the song "number one, number one, where are you?"
- Observe and record learners' responses


: communication, identification, Counting, observation and ordering skills.

Activity 3.2: Number Game

The number game activity is important for helping learners to recognise numbers in a fun and engaging way.

Suggested Teaching and Learning Materials:

- **Artificial environment:** Picture cards, two boxes, clay, sand, plasticine

Learning Environment set-up: Classroom/Any suitable safe space

Teachers' Roles:

- Put learners into groups
- Place picture cards 1 - 5 in each box.
- Let one learner from each group pick one card and the other learners should identify the number.
- Ask the learners to mould/model numbers of their choice 1 - 5 using available resources (clay, sand, plasticine)

 :

- Learners picking a card and show it to other group members to identify the number on it
- Learners moulding numbers of their choice 1 - 5 using available resources (clay, sand, plasticine)

 :

- Observe learners pick a card and show it to other group members to identify the number on it
- Observe learners mould/model numbers of their choice 1 - 5 using available resources (clay, sand, plasticine)
- Observe and record learners' responses

 **:** Communication, Counting, Critical thinking, Eye-hand coordination, Fine motor problem solving,

Learning Activity 4: Identifying Written Numbers 1 - 5

This activity focuses on teaching learners to identify written numbers, which is crucial for future mathematics concepts and counting and communication skills. It involves exploring living and non-living things and creating real-world connections.

Activity 4.1: Shopping Hunt

A shopping hunt for learners can be exciting and engaging way to develop skills like problem solving, and Collaboration. It is essentially a fun activity that mimics the process of a shopping trip, but with a focus on exploration and learning.

Suggested Teaching and Learning Materials:

- **Artificial Material:** Goods/Items, Number cards, number tracing worksheets

Learning Environment set-up: Shopping corner, Tuck shop,

Teacher's Roles:

- Prepare number cards with written numbers (e.g., 1, 2, 3) and corresponding numerals (e.g., one, two, three).
- Prepare number tracing worksheets for learners to practice writing numbers.
- Prepare number recognition games, such as matching games or bingo, to reinforce learning.
- Show learners the number cards and introduce the written numbers
- Ask learners to relate the written numbers to the corresponding numerals
- Use real-life examples, such as price tags in tuck shops, street signs or phone numbers, to demonstrate the importance of written numbers. Take the learner to a tuck-shop and identify numbers 1-5 in the tuck-shop.

 **:** Learners relating the written numbers to the corresponding numerals using the number cards and written numbers

 **:** Observe learners identifying the numbers correctly by relating the written numbers to the corresponding numerals using the number cards and written numbers.

 : Communication, Counting, Observing,

Activity 4.2: Feely Bag

A feely bag is an interactive activity that helps learners develop their sense of touch, fine motor skills, imagination, and problem-solving skills by allowing them to feel objects without looking inside. It encourages them to identify objects by touch.

Suggested Teaching and Learning Materials:

- **Natural Materials:** Fruits
- **Artificial Materials:** Feely bag with goods/items inside such as different Toys, Groceries.

 : *The goods/items should have numbers written on them (1 - 5).*

Learning Environment set-up: Classroom/Any suitable safe space (Artificial Environment)

Teacher's Roles:

- Let each learner reach into a shopping bag (without looking) and guess what they are holding before pulling it out. Then, they can name it and say the number written on it
- Let learners state if the item picked is a living or non-living thing and identify the number written on the bag

 : Learners stating if the item picked is a living or non-living thing and identify the number written on the bag.

 : Observe learners identifying the numbers correctly on the goods/items in the feely bag.

 : Communication, Observation, Critical thinking.

Learning Activity 5: Naming Numbers 1-5

Numbers are all around us. We use them to count our Toys, our friends, and even our favorite foods. In this activity, you will help learners name of numbers 1-5 using real-life objects. Teaching learners to name numbers is a important as it helps to build a foundation for future mathematics concepts.

Activity 5.1: Pretend zoo

A pretend Zoo is a play-based learning activity where learners can use their imagination to create and manage their own Zoo. It lays a foundation for mathematics skills such as counting, recognising and naming numbers, also enhancing critical thinking and problem solving.

Suggested Teaching and Learning Materials

- **Artificial Materials**: Pictures of different zoo animals, such as lions, monkeys, giraffes, and elephants, game board/Card board

Learning environment set-up: Classroom/Any suitable safe space (Natural Environment) or Outside Classroom (Natural Environment)

Teacher's Roles:

- Introduce the Zoo game by asking what animals learners know?
- Then explain to the learners that they will be playing a zoo game to learn about numbers
- Show the learners the number cards and ask if they know the names of the numbers.
- Prepare a pretend zoo, where you will stick/paste number cards using game board/Card board
- Provide pictures of different zoo animals, such as lions, monkeys, giraffes, and elephants
- Place the zoo animal pictures on the game board/Card board
- Ask learners to match the animals to the corresponding number cards
- As the learners match the animals to the numbers, have them read the numbers aloud
- Encourage the learners to repeat the numbers several times to reinforce their learning

 : Learners identifying the numbers branded on the different things whilst in the zoo.


: Communicating, Identifying


:

- Observe learners to matching the animals to the numbers and read the numbers aloud
- Make a quiz to assess learners recognising numbers

Learning Activity 6: Counting numbers up to 10

Counting things activities help learners recognize numbers by comparing living and non-living things. They engage learners in building counting concepts and distinguishing living from non-living things, using various activities.

HOOK: ***"Let's see who can count the greatest number of living and non-living things"***

Activity 6.1: Counting things outside the classroom

This activity will engage learners in counting living things and non-living things that are found in the both natural and artificial environment and will help them in learning how to count and build on the concept of differentiating living things from non-living things.

Suggested Teaching and Learning Materials

- **Natural Materials:** Animals, plants, people
- **Artificial Materials:** Cars, Motorcycles, Bicycles, Buildings, Stones

Learning Environment set-up: School surroundings (Natural Environment)

Teacher's Roles:

- Take a short walk with learners around the school.
- Ask learners to count the living things (Animals such as insects, birds…), people, plants, and non-living things (Cars, Motorcycles, Bicycles, Buildings, Stones) they see.
- Ask learners to count a group of 10 living and non-living things.

 :

- Learners counting living things (Animals such as insects, birds…), people, plants, and non-living things (Cars, Motorcycles, Bicycles, Buildings, Stones) they see.
- Learners counting a group of 10 living and non-living things.

 :

- Observe learners counting the living things (Animals such as insects, birds…), people, plants, and non-living things (Cars, Motorcycles, Bicycles, Buildings, Stones) they see.
- Evaluate learners counting a group of 10 living and non-living things.

 **:** Analytical thinking, Communicating, Counting, Observing

Activity 6.2: Classroom exploration

In this activity learners expected to search and count living things and non-living things found in the classroom environment. They should sort and count a group of 10 living and non-living things.

Suggested teaching and learning materials:

- **Natural Materials:** Plants/ fresh leaves

- **Artificial Materials:** Books, crayons, pencils, toys.

Learning Environment set-up: Classroom/any suitable safe space (Artificial Environment)

Teacher's Roles:

- Provide the following Plants/fresh leaves, Books, crayons, pencils, toys in group of 10
- Put learners in groups
- Ask each group at a time to go in front and identify and count living things, put them aside and then count non-living things

 **:** Learners identifying and separating living things from non-living things and thereafter counting the number of things in each group.

 : Observe learners sorting and counting living and non-living in groups of 10 by way of differentiating them

 **:** Analytical thinking, Communicating, Counting, Problem solving

Activity 6.3: Counting Game-Hide and Seek Counting

Using counting games to teach learners numbers is an entertaining and interesting method to help them develop their numeracy skills. In the early stages of learning, using games to teach learners how to count and distinguish between living and non-living objects is a useful tactic that creates an enjoyable and stimulating learning environment. Additionally, game-based learning helps in the development of problem-solving abilities.

Suggested Teaching and Learning Materials

- **Natural materials:** Plants, Insects.
- **Artificial materials:** Books, pencils, toys, desks, number cards

Learning Environment set-up: Classroom/any suitable safe space (Artificial Environment)

Teachers' Roles:

- Put the learners in groups
- Hide a set of living things and non-living things (e.g., 1-10 insects, plants, books, pencils, toys, balls) around the classroom or play area
- Call out a name of the living and non-living thing, and have learners find the corresponding number card.
- Ask one group to find the living things and the other to find the non-living things. The group which finds all the ten things first wins the game
- To make it more challenging, give clues, such as "The living thing is hiding behind something blue" or "The non-living thing is near a desk."

 **:** Learners counting the things as they find them until all the 10 have been found and counted.

 **:** Observe learners finding and counting living and non-living things with the corresponding number card.

 **:** Collaboration, Communication, Counting, Observation, Problem solving

Activity 6.4: Counting Games (Counting Scavenger Hunt)

In this activity a game is going to be used teach learners how to be counting between living and non-living things is a useful tactic that makes an enjoyable and interesting learning environment. Additionally, game-based learning helps in the development of problem-solving abilities.

Suggested Teaching and Learning Materials

- **Natural Materials:** Plants/fresh leaves, Insects.
- **Artificial Materials:** 10 books, 5 pencils, 4 toys, 3 chairs, 2 desks

Learning Environment set-up: Classroom/any suitable safe space (Artificial Environment)

Teacher's Roles:

- Provide a list of things with corresponding numbers (e.g., 10 books, 5 pencils, 3 toys, 3 chairs, 2 desks).
- Put the learners in groups
- Give learners the list and have them find and count the things
- To make it more challenging, add clues to solve before finding the things

Learners' Activity: Learners counting things as they find them until all the things have been found and counted.

 **:** Observe learners as they are finding and counting the living things and non-living things 1-10.

 **:** Collaboration, Communication, Counting, Observation, Problem solving

Learning Activity 7: Moulding numbers 1 – 5

This activity is about moulding numbers using variety of materials to help learners` understand of numbers. This activity is hands-on, making learning more interactive and engaging. By using materials like clay and playdough, learners can make numbers in different ways, encouraging creativity and problem-solving abilities. There are three sub-activities that you can use to help learners recognise numbers.

HOOK: ***Let's make numbers***.

Activity 7.1: Making numbers outside the classroom

Making numbers using a variety of natural materials such as sticks, leaves and small stones can make learners develop a deeper understanding of mathematical concepts of recognising numbers

Suggested Teaching and Learning Materials

- **Natural Materials:** sticks, stones, leaves, seeds.
- **Artificial materials:** bottles, bottle tops.

Learning Environment set-up: School surrounding (Natural Environment)

Teacher's Role: Take learners outside for a nature walk and ask them to collect small natural materials like sticks, leaves or stones.

 : Learners lay down sticks or arrange small stones on the ground to make numbers.

 :

- Observe learners making numbers of their choice from 1 – 10, using the collect bottles, or bottle tops
- Evaluate the numbers made by learners from 1 – 10, using the collect bottles, or bottle tops

 : Analytical thinking, Communicating, Collaborating, Creativity, Observing

Activity 7.2: Moulding Numbers

This activity is about moulding numbers using clay is an engaging and hands-on activity that can help learners to recognise numbers. The activity is designed to help learners` recognise different numbers.

Suggested Teaching and Learning Materials

- **Artificial Materials:** Moulding clay, play dough

Learning Environment set-up: School surrounding (Natural Environment) or Classroom (Artificial Environment

Teacher's Roles:

- Provide learners with moulding clay or play dough

- Ask learners to mould numbers from 1 – 5 using the provided materials.

: Learners moulding numbers from 1 – 5 using variety of materials provided.

:

- Observe learners mould number from 1-5 using variety of materials provided
- Evaluate learners' moulded numbers 1-5 using variety of materials provided

: Collaboration, Creativity, Fine motor, Communication

Activity 7.3: Number Hunt Game

A Number Hunt game is a fun and interactive activity designed to help learners develop their numeracy skills, particularly in recognising and identifying numbers. The purpose of the Number Hunt game is for learners to find and identify numbers in their environment.

Suggested Teaching and Learning Materials

- **Artificial Materials:** Number shapes, sensory bags

Learning Environment set-up: School surrounding (Natural Environment) or Classroom Environment/ Any suitable safe space (Artificial Environment)

Teacher's Roles:

- Introduce activity by providing a suitable hook to the learners
- Give a number to each learner.
- Hide number shapes in sensory bags for learners to find and match with the other ones they have in the other hands

: Learners finding number shapes in the sensory bags that match the ones they have in their hands.

:

- Provide learners with a variety of moulding materials and ask them to make and mould numbers from 1 – 5
- Observe learners moulding numbers from 1 – 5, using variety of moulding materials
- Evaluate learners' moulded numbers 1-5

: Analytical thinking, Collaborating, Communicating, Problem solving

Learning Activity 8: Tracing numbers 1 – 5

This activity is about tracing numbers 1-5 using various materials develop fine motor, and hand-eye coordination. This activity can helps learners recognise the shape of numbers. This activity can be used to help learners recognise numbers,

Activity 8.1: Writing Numbers in the Air

Suggested Teaching and Learning Materials

- **Natural materials:** Sand/Rice/Salt/Sugar
- **Artificial materials:** Chalk, Markers or Crayons, playdough, number cards

Learning Environment set-up: School Surrounding (Natural Environment)

Teacher's Roles:

- Take the learners outside the classroom. Stick number cards where each learner will see then clearly.
- Let the learners write the numbers (1 - 5) in the air while you observe the way they do it.
- Practice tracing numbers together with the learners
- Provide feedback and encouragement to learners as they practice tracing numbers in air

 **:** *Encourage learners to practice tracing numbers independently*

 :

- Learners to write the numbers they see on the wall in the air using their fingers
- Learners trace numbers 1-5 using the chosen material

 :

- Call out numbers and ask learners to write them in the air.
- Observe learners write numbers in the air and state the name for each number (1 – 5)

 : Analytical Thinking, Communicating, Collaborating, Creativity

Activity 8.2: Sand Tray Tracing

The activity Sand tray tracing is used to help learners recognise numbers. It typically involves putting sand in a shallow tray and then using a finger to trace shapes, letters, or patterns. The sensory experience of drawing in the sand can be calming, and it's a way learners can engage with their creativity and focus their attention.

Suggested Teaching and Learning Materials:

- **Natural Material:** Sand

- **Artificial Materials:** Tray, tool to trace such as a pencil.

Learning Materials: School Surroundings (Natural Environment)

Teacher's Roles: Fill sand in the trays and write the numbers (1-5) on the sand

 : Learners tracing the numbers (1-5) on sand in the tray.

 :

- Provide learners with another material such as sugar/salt
- Observe learners to trace the numbers (1-5) written on sugar/salt/rice in the tray
- Evaluate learners as they trace

 : Fine motor skills and hand– eye coordination skills

Activity 8.3: Button or Bead Tracing

Beads tracing is another great tactile activity where beads (often small, round ones) are arranged in patterns or shapes, and then the person traces around them, either with their fingers or a tool. The beads can be used to form letters, numbers, shapes, or more complex designs, and the process can be calming, creative, and a fun way to practice fine motor skills.

Suggested teaching and learning materials to set up learning environment:

- **Artificial Materials**: Big beads/Buttons, Cardboard paper, glue

Learning Environment set-up: School Surroundings (Natural Environment)

Teacher's Roles:

- Emboss numbers 1-5 with beads/buttons/bottle tops/any seed on cardboard using glue or any adhesive.
- Ask learners to trace on the numbers made on the cardboard

: Learners tracing the numbers (1-5) using fingers on top of each number

:

- Observe learners tracing on the numbers made on the cardboard
- Evaluate learners tracing on the numbers made on the cardboard

: Tracing, Fine motor, Eye-hand coordination

Activity 8.4: Nature Number Tracing

Nature Number Tracing is a fun method to learn numbers by tracing them using natural tools like fingers and sticks, enhancing fine motor skills, hand-eye coordination, and problem-solving abilities. The activity aims to improve fine motor skills, number recognition and writing, encourage exploration of nature, foster creativity, and improve problem-solving abilities.

Suggested Teaching and Learning Materials:

- **Natural Materials:** Leaves, sticks stones, seeds or any other suitable natural materials (*for tracing numbers*)
- **Artificial Materials:** Cardboard or Clay or Sand (*for tracing numbers*)

Learning Environment set-up: School Surroundings (Natural Environment)

Teacher's Roles:

- Provide leaves/stones/seeds, Cardboard or Clay or Sand
- Print numbers (1-5) on a cardboard or on clay or sand
- Ask learners to place material (leaves, stones, seeds) on the printed numbers on either the cardboard or clay or sand (ground).
- Ask learners to repeat the same activity using clay or sand and a stick

:

- Learners placing materials (leaves, stones, seeds) on the printed numbers on either the cardboard or ground
- Learner's tracing numbers using the stick-on clay/sand

:

- Observe learners placing materials (leaves, stones, seeds) on the printed numbers on either the cardboard or ground
- Evaluate learners tracing numbers using the stick-on clay/sand


: Tracing, Fine motor, Eye-hand coordination

Activity 8.5: Number Tracing

The number tracing activity helps learners to recognise numbers. This activity engages learners through the use of cotton wool in a creative and fun way to help learners recognise numbers.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** cotton wool, glue, paper with printed numbers (1-5).

Learning Environment set-up: School Surroundings (Natural Environment)

Teacher's Roles:

- Print out large numbers on pieces of paper.
- Ask the learners to pick pieces of cotton wool (you can use different colours) or write numbers on the ground
- Let leaners repeat the activity by using water bottles to write the numbers

:

- Learners gluing the cotton wool on the numbers to trace them.
- Leaners repeating the activity using water bottles to write the numbers

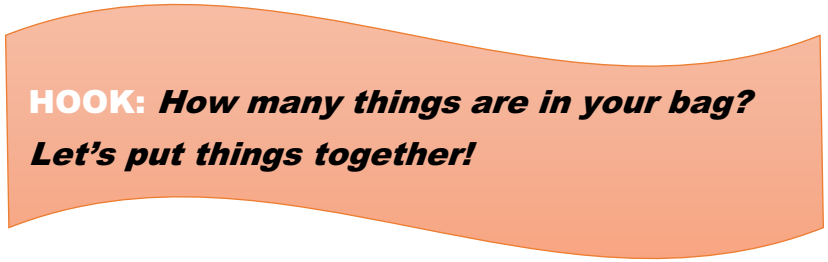
 :

- Observe learners gluing the cotton wool on the numbers to trace them.
- Evaluate leaners repeating the activity using water bottles to write the numbers

 : Counting Fine motor, Tracing

Learning Activity 9: Adding living and non-living things up to the sum of 5

Addition is an important skill in everyday life, helping in problem-solving. This activity uses games, puzzles, and real-life examples to teach addition, engaging learners in fun and educational activities related to adding living and non-living things up to the sum of 5. There are three sub-activities you can use to teach learners the concept of addition, how to add single-digit numbers, application of addition to real-life situations, and developing problem-solving and critical thinking skills.



Activity 9.1: Addition game-Living and Non-living things

Addition game is a fun way to engage learners in learning to add living and non-living things up to the sum of 5. This game brings both counting and classification together in an exciting way, while helping learners practice addition in a real-world context. The purpose of this activity is helping learners practice addition skills by combining living and non-living things in a fun and interactive way.

Suggested Teaching and Learning Materials:

- **Natural Materials:** Picture cards of living things (e.g., Animals, Plants, People)
- **Artificial Materials:** Picture cards of non-living things (e.g., Cars, Buildings, Toys), Number cards (0-10), Game board or mat

Learning Environment set-up: Classroom/ Any suitable safe space (Artificial Environment)

Teacher's Roles:

- Display picture cards showing different number of living or non-living things.
- Shuffle the picture cards and place them face down on the game board or mat.
- Shuffle the number cards and addition problem cards, and place them within reach.
- Ask learners to count the number of non-living things and find which picture cards have the number of non-living things that sum to 5
- Do the similar way on living things.

 : Learners pairing picture cards with the number of non-living things that sum to 5. Example model/object with 3 stones and another one with 2 stones. For example, the learner has 2 picture cards of living things (e.g., 3 dogs) and 2 picture cards of things (e.g., 2 dogs), they can combine or 2 picture cards of non-living things (e.g., 2 cars), they can

 :

- Observe learners during gameplay to assess their understanding of addition concepts
- Review learners' addition problems and solutions to assess their accuracy and understanding
- Use the game as a formative assessment to inform instruction and adjust the game to meet learners' needs.
- Give learners as many different objects as possible to put together so that they master the concept of addition.

 **:** Addition, Counting, Sorting

Activity 9.2: Sensory Bag -Living and Non-living Things

A sensory bag is a fantastic hands-on activity that encourages learners to explore and differentiate between living and non-living things through touch and play. This sensory bag helps learners to group and add things while providing a physical experience.

Suggested Teaching and Learning Materials:

- **Natural Material:** Fresh leaves
- **Artificial Material:** A sensory bag, toy plastic animals' models, toy cars

Learning Environment set-up: Classroom/ Any suitable safe space (Artificial Environment)

Teacher's Roles:

- Put all the objects both non-living and living things in the sensory bag.
- Ask the learners to pick items from the sensory bag without looking at what they are picking.
- Ask the learners to put together the living things of the same type and those to put together non-living of the same type.

 **:** Learners putting (adding) together the living things (same type) and the non- living things (same type) and count them.

 **:**

- Observe learners picking items from the sensory bag without looking at what they are picking.
- Evaluate learners as they put together the living things of the same type and those to put together non-living of the same type.

 **:** Communicating, Collaborating, Counting, Fine motor

Activity 9.3: Interactive Play with Living and Non-Living Things

Interactive play with living and non-living things fosters social and cognitive development by allowing learners to explore, sort, and learn about living and non-living things.

Suggested Teaching and Learning Materials:

- **Natural Materials:** animals, plants, or anything representing living things which is safe to use
- **Artificial Materials:** Toy animals, toy cars, plastic plants, or anything representing living and non-living things.

Learning Environment set-up: School surroundings (Natural Environment) or Classroom Environment/ Any suitable safe space (Artificial Environment)

Teachers' Roles:

- Set up a small area of a farm or zoo.
- Ask learners to use toy animals (living things) displayed e.g. 1 dog with 3 puppies and another dog with 2 puppies
- Let the learners add all the dogs which are at the farm

 **:** Learners adding the same types of living things displayed e.g. dogs, cows, pigs and so on.

 **:**

- Provide learners with other different things to put together (add) so that they master the concept of addition.
- Observe learners putting together (adding) things

 **:** Analytical thinking, Communication, Counting, Collaboration.

Learning Activity 10: Subtracting living and non-living things up to the difference of 4

Subtraction is a mathematical operation that determines the difference between two numbers, similar to removing something from a group. Teaching learners' subtraction phrases can be engaging through interactive play and hands-on activities. This activity can be done a story about entitled "Animal adventure". The animal adventure story for subtracting living and non-living things is a fun and interactive way to engage early childhood learners in subtraction while integrating both living and non-living things.

HOOK: ***Imagine you have 3 toy cars, and you give 1 to your friend. How many cars do you have left? Let's find out through subtraction!***

Suggested Teaching and Learning Materials:

- **Artificial environment:** Picture cards or toys representing living and non-living things

Learning Environment set-up: Classroom Environment/ any suitable safe space (Artificial Environment)

Teacher's Roles:

- Tell the learners a very short story that involves living and non-living things, for example;

Story Title: Chilonga's Farm Adventure

Chilonga had a farm with 5 cows.

One day, 1 cow left the farm to go to a nearby field.

- Ask learners the question "*How many cows are left on Chilonga's farm*?"

Story Title: Thabo's Class Adventure

Thabo has 5 crayons in her lunch box. She gave 2 crayons to her friend, Misozi

- Ask learners the "*How many crayons are left in the school bag*?"

Note: You can use any short story that can help your learners to understand the mathematical operation of subtraction.

- Ask learners the question "How many animals are left on Chilonga's farm?"

: Learners taking away (subtracting) 1 cow to find out how many animals at the farm.

:

- Observe learners during storytelling to assess their understanding of the mathematics operation of subtraction
- Evaluate learners' ability to subtract two numbers up to the difference of 4.

: Analytical thinking, Communication, Counting

Expected Standards: Numbers 1-10 recognised correctly

Summative Assessment Guide

Oral Counting
Prepare oral counting activity where learners can

- Correctly count numbers 1-10 orally

Counting Living and Non-Living Things
Provide learners with Living and Non-Living things for a counting activity where learners can;

- Correctly count living/non-living things up to 5

Number Identification
Provide learners with Living and Non-Living things for a number identifying activity where learners can;

- Identify numbers 1-5 using living and non-living things

Written Number Recognition
Provide learners with Living and Non-Living things for a written number recognising activity where learners can;

- Recognise written numbers 1-5 using living and non-living things

Naming Numbers
Provide learners with Living and Non-Living things for a naming number activity where learners can;

- Name numbers 1-5 using living and non-living things

Counting Numbers up to 10

Provide learners with Living and Non-Living things for a number identifying activity where learners can;

- Correctely counts numbers up to 10 using various living and non-living things

Moulding Numbers

Provide learners with moulding materials such as playdough for a moulding numbers activity where learners can;

- Mould numbers 1-5 using different materials

Number Patterns

Provide learners with things for a number pattern activity where learners can;

- Demonstrates understanding of basic number patterns

Adding Living/Non-Living Things

Provide learners with Living and Non-Living things for an addition activity where learners can;

- Correctly adds living and non-living things up to the sum of 5

Subtracting Living/Non-Living Things

Provide learners with Living and Non-Living things for a number identifying activity where learners can;

- Accurately subtracts living and non-living things up to the difference of 4

 : These key learning points under the sub-topic ***Numbering Things*** include the following:

Number Sense

- Counting orally from 1 to 10
- Counting living and non-living things up to 5
- Identifying numbers 1-5 using living and non-living things
- Identifying written numbers 1-5 using living and non-living things
- Naming numbers 1-5 using living and non-living things

Number Representation

- Counting numbers up to 10 using various living and non-living things
- Moulding numbers 1-5 using different materials

Mathematical Operations

- Adding living and non-living things up to the sum of 5

- Subtracting living and non-living things up to the difference of 4

Cross-Curricular Skills

- Fine motor skills (through moulding numbers)
- Problem-solving skills (through addition and subtraction activities)
- Critical thinking skills (through identifying and naming numbers)

Sub-Topic 3: Things in the Surroundings

Introduction: This Sub-Topic Things in the Surroundings is developed to encourage learners to discover their surroundings using simple language and real-life examples. It takes learners on an exciting journey to discover the world around us, from the natural world to our classrooms. The learning activities are developed to help learners discover the interesting things that make up our surroundings, including animals, water, trees, flowers, classroom furniture, and even our homes.

Specific Competences:

- Recognise money
- Manage waste

- **Coin and Notes identification**: recognizing and naming different coins and notes and their values.
- **Counting money**- calculating the total value of coins and notes.
- **Pattern making**-arranging coins and notes in a specific order or design.
- **Sequencing money**-arranging coins and notes in order from smallest to largest value.
- **Bartering system**-exchanging goods or services without using money.
- **Waste management**-way of handling, storing, and disposing off waste.

- **Waste disposal**- act of getting rid of waste in a responsible manner.
- **Sorting waste**-separating waste into different groups for proper disposal
- **Reduce, Reuse, Recycle (3Rs)** - a plan for minimising waste by reducing consumption, reusing items, and recycling materials.

Key Concepts

- Financial literacy
- Environmental Sustainability
- Pattern recognition

Learning Activities

Learning Activity 1: Identifying of Coins and Small notes

This activity encourages learners to learn about coins and small notes up to K5 through playing games, singing songs, and having fun. It helps develop important skills in money management, counting, financial literacy, and problem-solving abilities. Three activities can be chosen based on the teaching environment and learners' abilities, promoting understanding of money and its importance.

Activity1.1: Coins and Notes Collection

This activity encourages learners to collaborate in collecting, sorting, and counting coins and notes, fostering problem-solving, hand-eye coordination, and fine motor skills. It encourages learners to start treasure hunts and helps learn about money management.

Suggested Teaching and Learning Materials

- **Artificial environment:** money (coins and notes up to K5), mat or chart

Learning Environment set-up: Classroom Environment/ any suitable safe space (Artificial Environment)

Teacher's Roles:

- Provide learners with a set of coins and notes up to K5 with a sorting mat or chart.
- Display coins and notes up to K5 show learners one at a time
- Ask learners to sort the coins by denomination, color, or shape

- Let individual learners hold a coin or note and say its value, colour, or size orally

 :

- *Always supervise learners when handling coins to prevent accidental ingestion.*
- *Encourage learners to handle coins and notes gently to prevent damage and tearing.*
- *Encourage learners to wash their hands before and after handling money to prevent the spread of germs.*

 :

- Learner holding a coin or note while saying its value, colour, or size orally
- Learners picking out specific coins or notes based on your instructions (e.g., “Pick the K1 coin” or “Find the K5 note”).

 :

- Assess learners' knowledge of coins and notes through a quiz
- Evaluate learners' ability to sort coins and notes up to K5 correctly.
- Observe learners during learning activities to assess their understanding of coins and notes.

 **:** Communication, Fine motor, Problem solving

Activity 1.2: identifying coins- *singing a Coin and Note Song*
This activity will use a coin and note song help learners recognise the features and values of different coins in a fun and engaging way. Using songs will help learners remember the different coins and notes through repetition and rhythm.
Suggested teaching and learning materials to set up learning environment:

- **Artificial Materials:** Money (coins)

Learning Environment set-up: School surroundings (Natural Environment) or Classroom Environment/ Any suitable safe space (Artificial Environment)

Teacher’s Roles:

Prepare or create a simple, catchy song about the coins and notes. Below is an example of a coin and note song.

Coin Song
(Tune: "Twinkle, Twinkle, Little Star")

50 ngwee small and shiny
Has a head of an elephant
Can buy you something you've been wanting to eat

K1 coin, shiny and bright
Has a picture of a bird in flight
K1 coin, it's worth a lot
Can buy you something you've been wanting to get

K2 note, bigger and bold
Has a picture of a roan antelope to behold
K2 note, it's worth even more
Can buy you something you've been wanting to explore

K5 note, biggest of all
Has a picture of a lion, standing tall
K5 note, it's worth the most
Can buy you something that's really boast

- Sing the song multiple times to help learners remember the lyrics and relate them to the coins and notes.
- Show the learners the coins as you sing the song, pointing to the pictures and features mentioned in the lyrics.
- Ask learners questions about the coins, such as "What is the value of this coin?" or "What is the picture on this coin?"
- Make the song interactive by asking learners to join in, clap, or move their bodies to the rhythm.

: *You can use any tune or song of your choice.*

: Learners singing the song about the coins and notes while recognising the ***pictures*** and ***features*** the money.

 : Observe learner participation in recognising the coins and notes during singing of the song

 : Collaboration, Communication, Critical thinking, Problem solving

Activity 1.3: Play-Market/Shop

This activity is about using a mimic shop to help learners recognise money. In a Mimic Shop, learners can engage in role-playing activities, using play money and simulated products to practice real-life shopping scenarios, promoting hands-on learning, and building confidence in a safe and supportive environment.

Suggested Teaching and Learning Materials

- **Natural Materials:** Customers, shopkeeper (Teachers and Learners actors)
- **Artificial Materials:** play money (coins and notes up to K5), Pretend shop (jiggies, biscuits, yoyo, sweets...)

Learning Environment set-up: Classroom (Artificial Environment) or School surroundings/Any suitable safe space (Natural Environment)

Teacher's Roles:

- Create a play market or shop in the classroom or school surroundings
- Set up shelves, tables, and displays with various play food, toys, and other items
- Assign prices to each item using play money (coins and notes up to K5).
- Introduce the concept of money and its use in buying and selling.
- Show learners the play money (coins and notes) and explain the different denominations.
- Explain how prices are assigned to items in the play market/shop
- Demonstrate how to buy and sell items using play money.
- Give each learners some coins and notes and assign them a role (e.g., customer, cashier, shopkeeper).

 :

- Assign learners a role (e.g., customer, cashier, shopkeeper).
- Allow learners to participate in buying and selling activities, using play money to make purchases.
- As learners participate in buying and selling, ask them to identify the different coins and notes used in transactions.
- Encourage learners to count the money they receive as change or use to make purchases.

 : *Use real-life scenarios, such as buying snacks or toys, to make the learning experience more relevant and engaging.*

 **:**

- Observe learners during play market/shop activities to assess their understanding of money recognition.
- Administer quizzes to assess learners' ability to recognise and count money.

 **:** Communication, Collaboration, Critical thinking, Entrepreneurship, Financial literacy, Problem solving

Learning Activity 2: Creating patterns using coins and small notes

Creating patterns helps the learners to make predictions because they begin to understand what comes next.
The following are activities which can be used to engage learners into creating patterns using coins and small notes.
Choose activities which suit your teaching environment and the abilities of your learners.

Activity 2.1: Pattern Hunt - Coins and Notes

This activity helps learners develop pattern recognition skills. By looking for patterns in the way coins or notes are arranged, they start to understand sequences, which is a fundamental mathematics concept.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Money (coins and notes), flat surface or table

Learning Environment set-up: Classroom (Artificial Environment)
Teacher's Roles:

- Introduce the activity by asking learners what patterns are and explain to learners that patterns are sequences of objects or colors that repeat in a specific order.

- Provide various coins and small notes, as well as a flat surface or table.
- Create a set of pattern blocks using coins and notes,
- Ask learners to replicate the pattern.
- Ask learners to create a simple pattern using coins and notes, such as "coin, note, coin, note."
- Encourage learners to experiment with different patterns, such as "coin, coin, note, note" or "note, coin, note, coin."
- Use different denominations of coins and notes up to K5 to create more complex patterns.
- Challenge learners to continue the pattern by adding more coins or notes.

 :

- Learners creating a simple pattern using coins and notes, such as "coin, note, coin, note."
- Learners experimenting with different patterns, such as "coin, coin, note, note" or "note, coin, note, coin."

 :

- Observe learners during the activity to assess their understanding of patterns.
- Ask learners questions about the patterns they create, such as "What comes next in the pattern?" or "Can you continue the pattern?"
- Evaluate the patterns created by learners to assess their understanding of patterns and their ability to apply mathematical concepts.

 **:** Analytical thinking, Collaboration, Communication, Critical thinking, Creativity, Problem solving

Activity 2.2: Pattern Relay Race

A pattern relay race helps learners identify, create, and complete patterns. The activity is meant to help learners recognise coins and notes using created patterns This sharpens their understanding of sequences and patterns, which are foundational concepts in early mathematics education. There are three activities you can use to support learners recognise money.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Money (Coins and notes of different denominations)**,** Pattern cards or charts

Learning Environment set-up: Classroom (Artificial Environment) or School surroundings/Any suitable safe space (Natural Environment)

Teacher's Roles:

- Divide the learners into groups.
- Set up the relay course with 4-5 stations depending on the situation, each with a different pattern card or chart.
- Explain the rules to the learners:
  - *Each team member will run to a station and complete a pattern task.*
  - *The team member will then run back to their team and tag the next team member.*
  - *The next team member will then run to the next station and complete the pattern task.*
- Each team must create a pattern using coins and notes.
- Set up a "pattern station" with coins and notes scattered across the room. The first learner in each team runs to the station, selects a coin or note, and then runs back to the team to place it in the right spot on their pattern. The next learner continues the pattern. The team that finishes the pattern first, correctly, wins.

 :

- At each station, learner completing a pattern task, such as:
  - *Continuing a pattern using coins and notes (e.g., "coin, note, coin, note")*
  - *Creating a new pattern using coins and notes*
- Each team creating a pattern using coins and notes
- Learners (group) finishing the pattern first, correctly, wins

 :

- Observe learner participation during the relay and note their ability to recognise and create patterns of coins and notes.
- Review the pattern tasks completed by learners and assess their understanding of patterns of coins and notes.
- Use a rubric to assess learner performance and provide feedback.

 **:** Analytical thinking, Communication, Collaboration, Critical thinking, Problem solving

Activity 2.3: The Pattern Train Song

This activity looks different coins and notes we use daily, and help learners to recognise them through a fun song called the Pattern Train Song, which encourages singing, dancing, and learning about money.

Suggested Teaching and Learning Materials

- **Artificial Materials:** Money (coins and notes), play money.

Learning Environment set-up: Classroom (Artificial Environment) or School surroundings/Any suitable safe space (Natural Environment)

Teacher's Roles:

- Teach the learners the "Pattern Train" song to a simple tune, like;

The Pattern Train Song

(Tune "***The Wheels on the Bus"***

The coins on the train go clink, clink, clink

Clink, clink, clink, clink, clink

The 50n coin is smaller

50n coin, 50n coin, what can we do?

The K1 coin is biggest of all

K1 coin, K1 coin, standing tall

The notes on the train go flutter, flutter, flutter

Flutter, flutter, flutter, flutter, flutter

The K1 note is green and bright

K1 note, K1 note, shining light

The K2 note is blue and bold

K2 note, K2 note, stories untold

The K5 note is red and grand

K5 note, K5 note, in our land

- Sing the song multiple times to help learners remember the lyrics and associate them with the coins and notes.
- Show the learners the coins and notes as you sing the song, pointing to the corresponding coins and notes.
- As you sing the song, learners will lay down coins and notes in the pattern that corresponds to the song.
- Ask learners questions about the coins and notes, such as "What is the value of this coin?" or "What color is the K2 note?"
- Make the song interactive by asking learners to join in, clap, or move their bodies to the rhythm.
- The song repeats, and as it does, the pattern "train" grows longer with new items being added.

 : Ask learners to sing the song along with you and let them lay down coins and notes in the pattern that corresponds to the song.

 **:**

- Observe learner participation during the song and activities to assess their understanding of coins and notes.
- Ask learners questions about the coins and notes to assess their knowledge and understanding.
- Use a quiz or assessment to evaluate learners' understanding of coins and notes.

 **:** Collaboration, Communication, Creativity,

Learning Activity 3: Sequencing money (small notes) according to pattern

This activity is developed help learners recognise money by sequencing money using notes. It is necessary to understand that sequencing means putting things in order, like from smallest to largest or from largest to smallest. In this activity, you will use notes to practice sequencing. There are three activities that you can use to support learners recognise the money.

Activity 3.1: Money Sequence Storytelling (Play and Creativity)
Money sequence storytelling encourages learners to think creatively and develop problem-solving skills. This activity helps learners understand the concept of money sequences and how to apply it in real-life situations.

Suggested Teaching and Learning Materials

- **Artificial Materials:** Money (coins and notes) or play money

Learning Environment set-up: Classroom (Artificial Environment) or School surroundings/Any suitable safe space (Natural Environment)

Teacher's Roles:

- Introduce the concept of storytelling using money sequences.
- Explain that learners will create a story using a sequence of money, such as coins or notes.
- Provide them with a set of coins or notes
- Model a money sequence storytelling activity. For example:

Money sequence storytelling

"Once upon a time, I had K1.

I used it to buy a sweet.

Then, I got K2 as change.

I used the K2 to buy a pencil.

Next, I received K5 as a gift.

I used the K5 to buy a book."

- Create cards with different money sequences and ask learners to create a story using the sequence.

 **:** *Provide additional support and scaffolding, such as using visual aids or providing one-on-one instruction*

 :

- Learners creating their own money sequence stories.
- Learners creating stories using a sequence of money.

 :

- Observe learner participation during the activity to assess their understanding of sequencing money.
- Use a quiz or assessment to evaluate learners' ability to sequence money.
- Review the sequencing cards or charts created by learners to assess their understanding of sequencing money.
- Assess learners' understanding of money sequences and their ability to create a story using a sequence of money.

 : Analytical thinking, Communicating, Collaborating, Creativity, Fine motor

Activity 3.2: Money Patterns Dance Party (Song, Movement, and Play)

The Money Patterns Dance Party is a fun and engaging learning activity that uses play money to teach learners about money patterns, repeating in a specific order, and a twist of dancing through them, thereby helping learners recognise and sequence money patterns.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Money (coins and notes), play money.

Learning Environment set-up: Classroom (Artificial Environment) or School surroundings/Any suitable safe space (Natural Environment)

Teacher's Roles:

- Introduce the concept of sequencing and money patterns.
- Create a money pattern using play money, such as " K1, K2, K5, K1, K2, K5"
- Put the learners in manageable groups.
- Choose an upbeat song that the learners can dance to, such as "If you're happy and you know it" or any other fun song.
- Sing the song and have learners dance to the rhythm.
- Sing the song while learners arrange money notes in a pattern on the floor (or a table).
- You can pause the song at intervals and call out a pattern for them to complete (e.g., "Arrange the money in descending order" or "Alternate K1, K2, K5"). Whenever the song stops, they have to freeze and show you, their sequence.
- Add a fun twist: Ask them to "hop" to a new position to change the sequence or "dance" while rearranging the notes.

:

- Learners sequencing the money pattern by repeating the dance moves in the correct order.
- Learners arranging money notes in a pattern on the floor (or a table) either in ascending, alternating, or descending order while dancing to the tune and taking other actions as guided.

:

- Observe learners during the dance party and assess their understanding of sequencing and money patterns.
- Use a rubric to assess learners' ability to sequence money patterns and create dance moves.
- Ask learners to reflect on their learning and identify what they found challenging or enjoyable.

: Collaboration, Communication, Fine motor, Creativity, Analytical thinking

Activity 3.3: Money Sequence Simon says -Game and Movement

This activity is about playing the game "Money Sequence Simon Says," which uses money sequences instead of actions. The game encourages learners to think, make quick decisions and engage in problem solving by identifying the correct sequence of money.

Suggested Teaching and Learning Materials:

- **Artificial Materials:** Money (coins and notes), play money.

Learning Environment set-up: Classroom (Artificial Environment) or School surroundings/Any suitable safe space (Natural Environment)

Teacher's Roles:

- Play a classic game of "Simon Says" where you instruct the learners to arrange money in different sequences, such as:

"Simon says, place the K1, then K2, then K5 in that order."

"Simon says, put the K5, K2, K1 in reverse order."

- If you give an instruction without saying "Simon says," and any learner follows it, they are out for that round.

Learners' Activity: Learners arranging money in different sequences following the instruction "Simon says".

 **:**

- Observe learners during the game to assess their understanding of money sequences.
- Use a quiz to evaluate learners' understanding of money sequences.
- Learners to come up with different sequences using coins and notes.

 **:** Collaboration, Communication, Creativity,

Learning Activity 4: Making a choice of what to buy and other means (barter system)

The activity involves a Choice-Making Dance Game, where players make decisions that influence the story, outcome, or progression of the game, allowing them to influence the narrative through their choices.

Suggested Teaching and Learning Materials

Artificial Materials: toy items (ball, book, pretend food items…), shop and barter corner

Learning Environment set-up: Classroom/any suitable safe space (Artificial Environment)
Teacher's Roles:

- Introduce this activity by asking learners to share examples of times when they may have traded something with someone else.
- Setup a shop corner and a barter corner.
- Play music and have the learners dance around. When the music stops, hold up toy items (like a ball, a book, or a pretend food item). Ask, "Would you like to buy this item or exchange for something else?" and encourage them to show their choice by moving to a selected area. If they choose to buy, they can walk to a "shop" corner. If they want to exchange, they can go to the "barter" corner. After a few rounds, give them more choices to work through. For example, "Do you want the toy truck or the doll? What will you exchange for the truck?"

: Learners holding up toys items and making choices on whether to buy or to exchange.

:

- Observe choices, gather the children in a circle. Ask learners the following questions based on the choices they made.
  - *What made you choose that item? What do you like about it?*
  - *Why did you decide to exchange instead of buying with money?*
  - *How did you feel when you made your choice or exchange?*
- Observe learner participation during the activities.
- Use a quiz or assessment to evaluate learners' understanding of the barter system and the introduction of money.

: Communication, Collaboration, Entrepreneurship, Fine motor

Learning Activity 5: Disposing waste items in the correct bins or designated places

This activity introduces learners to the concept of sorting waste into designated places, laying the foundation for good waste management habits. This activity helps learners to understand the importance of sorting waste into designated places and manage waste.

Activity 5.1: Nature Walk

The nature walk activity is designed to help investigate waste management in our natural environment. This activity will look at disposing it in designated places.

Suggested Teaching and Learning Materials:

- **Natural Materials:** Fruit and vegetable peels, Eggshells1, leaves, grass clippings, branches and twigs, garden waste (e.g., weeds, dead plants
- **Artificial Materials:** Pictures or real-life examples of different types of waste (e.g., plastic bottles, paper, glass, food waste

Learning Environment set-up: School environment (Natural Environment)

Teacher's Roles:

- Introduce the idea of designated waste disposal areas by asking learners to share examples of designated waste disposal areas they have seen at home and school
- Take learners in the school surroundings
- Begin by reviewing the different types of waste and their designated disposal areas.
- Show learners the pictures or real-life examples of waste
- Ask learners to dispose waste into the correct designated disposal areas.
- Provide guidance and feedback as needed.
- Encourage learners to explain why they sorted the waste into a particular designated area.

: *Supervise learners closely during waste management activities to ensure they follow safety rules by wearing protective equipment, such as gloves and masks, when handling waste.*

:

- Learners sharing examples of designated waste disposal areas they have seen at home and school surroundings
- Learners' nature walking in the school surroundings
- learners viewing real-life examples of waste
- Learners sorting waste into the correct designated disposal areas.
- Learners explaining why they sorted the waste into a particular designated area.

:

- Observe learners during the activity to assess their understanding.
- Ask questions throughout the activity to assess learners' knowledge.

: Analytical Thinking, Collaborating, Communicating, Problem solving

Activity 5.2: Color-Coded Bins with Fun Labels

This activity requires suitable for both classroom environment or school surroundings. This will enable learners to dispose waste in the designated places such as correct bins.

Suggested Teaching and Learning Materials:

- **Natural Materials**: Fruit and vegetable peels, Eggshells1, leaves, grass clippings, branches and twigs, garden waste (e.g., weeds, dead plants
- **Artificial Materials**: Real/Diagrams/Pictures of designated waste disposal areas (e.g., recycling bins, compost bins, trash cans), different types of waste (e.g., plastic bottles, paper, glass, food waste)

Learning Environment set up: Classroom (Artificial Environment) or School surroundings/Any suitable safe space (Natural Environment)

Teacher's Roles:

- Put bright, colorful bins with pictures of the items that should go into them (e.g., paper, plastic, food scraps).
- Assign a specific color to each type of waste and let the learners know that they can match the item's color to the bin. For example, blue for paper, green for organic waste etc. Take learners outside within the school premises.
- Ask learners to search around the school surrounding for different types of waste. Let learners pick using gloves (plastics) or hooking with sticks.
- Ask learners to put different wastes collected in the correct bins.

 **:** *Supervise learners closely during waste management activities to ensure they follow safety protocols by wearing protective gear, such as gloves and masks, when handling waste.*

 **:**

- Learners searching around the school surrounding for different types of waste.
- Learners putting waste in correct bins

 **:**

- Teacher to take learners outside.
- Ask learners to pick waste and put in the correct bin.

 **:** Analytical thinking, Collaboration, Communication, Fine and Gross motor

Learning Activity 6: Sorting out different types of waste

The activity involves sorting waste into solid, liquid, e-waste, and general waste, raising awareness about environmental impact and encouraging a sustainable lifestyle and a more environmentally friendly approach to waste disposal.

Activity 6.1: The Sorting Station

This activity can be done inside the classroom environment or outside to explore both environments. This will help learners to differentiate types of waste and place them in correct bins in order to keep the environment clean.

Suggested Teaching and Learning Materials

- **Natural Materials:** leaves, banana peels, vegetable stalks
- **Artificial Materials:** Solid Waste **(**paper, plastic, or broken toys), Liquid Waste **(**Dirty water, leftover drinks, used oil), E-Waste (Old, broken electronics gadgets like phones or toys)

Teacher's Roles:

- Set up a simulated waste sorting station with different types of waste and well labeled bins.
- Provide four separate bins or boxes, each labeled clearly with one of the waste types (Solid, Liquid, E-waste, General).
- Place the bins in four different corners. Make the bins colorful
- Show the children a variety of items (pictures or actual items) that represent each waste type.
- Have learners work sort the waste into the correct bin

: *Also, you can divide learners into teams and set up four stations with labeled bins for solid waste, liquid waste, e-waste, and general waste. At each station, have a different type of waste for learners to sort. Turn it into a race to see who can sort the wastes the fastest.*

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- Learners sorting up waste and decide which bin they belong to.
- Learners racing to see who can sort the waste the fastest.

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- Observe how well each child can identify the different types of waste and sort them correctly.
- After the activity, hold a short discussion. Ask the learners to share which items they found easy or tricky to sort. Show them pictures of mixed waste and ask, “Where does this go?” You can do this individually or in pairs.

: Communication, Critical thinking, Fine motor, Problem solving

: *Managing waste should be an ongoing learning process and not just as a lesson. All homes, schools and classrooms should have properly labelled bins for putting in waste*.

Learning Activity 7: Participating in waste management

This activity is about participating in waste management activities such as reduce, reuse, recycle. This activity will help learners to problem solving skills and strategies for sorting and managing different types of waste.

Activity 7.1: Nature Walk & Clean-Up

The Nature Walk & Clean-up activity aims to investigate the effects of waste on the environment. The learners will walk around their school surroundings, observing waste in their natural surroundings. They will also collect trash and recyclables, learning about proper waste disposal and the importance of reducing, reusing, and recycling.

Suggested Teaching and Learning Materials:

- **Natural materials:** leaves, banana peels, vegetable stalks
- **Artificial materials:** gloves, litter (safe items only, like paper or plastic).

Learning Environment set-up: School surroundings
Teacher's Roles:

- Take learners on a short nature walk around the school.
- Provide learners small gloves and have them collect litter (safe items only, like paper or plastic).
- Talk about keeping nature clean and how picking up litter helps animals

 : Observe learners' participation in waste management activities and assess their ability to apply the 3Rs in their daily lives.

 : Communication, Collaboration, Critical thinking, Fine motor, Problem solving

Activity 7.2: Reducing of waste

This activity aims to teach practical tips, games, and activities to reduce waste in daily life, fostering mindfulness and awareness of waste habits.

Suggested Teaching and Learning Materials:

- **Natural materials:** leaves, banana peels, vegetable stalks
- **Artificial materials:** gloves, litter (safe items only, like paper or plastic).

Learning Environment set-up: Classroom (Artificial Environment)

- Introduce the activity by asking learners reducing waste is and its importance in waste management.
- Learners sharing ways they can reduce waste in their daily lives, such as using reusable bags, avoiding single-use plastics, and buying in bulk.

- Learners' Activity: learners conducting a "Waste Audit" in the classroom or school surroundings, while sorting and grouping waste into different types.

 : Observe learners sharing their findings on the waste audit and discuss ways to reduce waste in their school or community.

 : Communication, Collaboration, Critical thinking, Fine motor, Problem solving

 : Explain that reusing materials helps reduce waste and protect the planet.

Activity 7.3: Reusing waste

This activity aims to teach practical tips, games, and activities to reusing waste in daily life, fostering mindfulness and awareness of managing waste.

Teacher's Roles:

- Introduce the activity by explaining the concept of reusing items and its benefits in reducing waste.
- Ask learners to share examples of items they can reuse, such as using old jars for storage, turning old t-shirts into bags, or using reusable water bottles.

 **:** Conduct a "Reuse Challenge" where learners are given a set of items and challenged to come up with creative ways to reuse them.

 **:** Have learners share on the reuse challenge and discuss the benefits of reusing waste

 : Communication, Collaboration, Critical thinking, Fine motor, Problem solving

Activity 7.4: Recycling waste

This activity aims to teach practical tips, games, and activities to reduce waste in daily life, fostering mindfulness and awareness of managing waste.

Teacher's Roles:

- Introduce the recycling of waste by explaining to the learners the concept of recycling and its importance in waste management.
- Ask learners to share examples of items that can be recycled, such as paper, plastic, glass, and metal. (Discussion)

 **:** Conduct a "Recycling Relay" where learners sort different types of recyclable materials into correct bins.

 : Have learners share on the recycling relay and discuss the importance of recycling in reducing waste.

 : Communication, Collaboration, Critical thinking, Fine motor, Problem solving

Expected Standards:

- Money up to K5 recognised correctly.
- Waste managed accordingly.

Summative Assessment Guide

1. **Money Recognition**
   Prepare a coin identification activity where learners can;
   - Can identify 5 different coins
   - Can name the value of each coin

2. **Counting Money**
   Provide learners with money (coins and small notes up to K5) for a counting money activity where learners can;
   - Can count money up to K5 accurately
   - Can demonstrate understanding of basic addition concepts
3. **Pattern Creation**
   Provide learners with money (coins and small notes up to K5) for a pattern creation activity where learners can;
   - Can create a simple pattern using coins and notes
   - Can explain/tell a story about the pattern created
4. **Sequencing Money**
   Provide learners with money (small notes up to K5) for a counting money activity where learners can;
   - Can sequence small notes in order from smallest to largest value
5. **Bartering System**
   Provide learners with various items for a bartering system activity where learners can;
   - Can demonstrate a basic understanding of bartering
   - Can provide an example of a bartering system
6. **Waste Disposal**
   Provide learners with various waste items for a waste disposal activity where learners can;
   - Can dispose of waste items in the correct bins
   - Can explain the importance of proper waste disposal
7. **Sorting Waste**
   Provide learners with various waste items for a waste disposal activity where learners can;
   - Can sort waste into different categories (solid, liquid, e-waste, general)
   - Can explain the differences between each group
8. **Waste Management Activities**
   Provide learners with various waste items for a waste disposal activity where learners can;
   - Can participate in waste management activities (Reduce, Reuse, Recycle)
   - Can explain the importance of these activities

These key learning points under the sub-topic ***things in the surrounding*** include the following:

Financial Literacy

- Identifying coins and small notes up to K5
- Counting money up to K5
- Creating patterns using coins and small notes
- Sequencing money according to pattern

Consumer Education

- Making choices about what to buy
- Understanding the bartering system

Environmental Sustainability

- Disposing waste items in the correct bins or designated places
- Sorting waste into types (solid, liquid, e-waste, general)
- Participating in waste management activities (Reduce, Reuse, Recycle)

Cross-Curricular Skills

- Critical thinking and problem-solving skills
- Fine motor skills (through handling coins and notes)
- Environmental awareness and responsibility