Republic of Zambia

Ministry of Education

PRE-MATHEMATICS & SCIENCE

TEACHING MODULE

EARLY CHILDHOOD EDUCATION LEVEL II

TERM 3

Developed by Curriculum Development Centre
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Lusaka

2026

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VISION

Quality, lifelong education for all that is accessible, inclusive and relevant to individual, national and global needs.

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PREFACE

The Pre-Mathematics and Science Teaching Module for Level 2 has been developed in line with Competence-Based Education principles, which seek to connect learning with real-life experiences. The module contains content and activities for Early Childhood Education learners and serves as a practical guide for teachers facilitating age-appropriate Pre-Mathematics and Science learning.

The module supports the development of competences, knowledge, skills, values and positive attitudes through hands-on experiences, play, manipulation of real objects, interaction with natural and artificial environments, discussion and guided discovery. These experiences are intended to support learners' physical, cognitive, emotional, social and moral development while building a strong foundation for later learning in Science, Technology, Engineering and Mathematics (STEM).

Teachers are encouraged to adapt the suggested activities to the needs, interests and abilities of learners and to improvise with safe, locally available materials where appropriate. The module should be used flexibly alongside the approved syllabus and other authorised teaching and learning resources.

Kelvin Mambwe (PhD)
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ACKNOWLEDGEMENT

This Pre-Mathematics and Science Teaching Module is the result of collaborative and consultative curriculum development work involving teachers, teacher educators, curriculum specialists and other education stakeholders.

The Ministry of Education acknowledges the technical input, professional commitment and practical classroom experience contributed to the development and review of the learning activities. Appreciation is also extended to the Curriculum Development Centre staff who coordinated the development process and supported the alignment of the module to the Competence-Based Curriculum.

The contribution of all individuals and institutions that support quality Early Childhood Education in Zambia is sincerely appreciated.

Petronella M. Samutete (Ms.)
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HOW TO USE THIS MODULE

Read the module introduction and the relevant topic and sub-topic before facilitating an activity. Each activity follows a common structure to support consistent lesson preparation and delivery.

1. Prepare the teaching and learning materials before the activity. Use safe, age-appropriate and locally available resources.
2. Begin with the hook. Use a simple question, object, picture, story, song or demonstration to arouse curiosity and connect with learners' prior experiences.
3. Follow the teacher's role as a facilitation guide, while allowing learners to explore, talk, manipulate materials, ask questions and work with peers.
4. Use the learners' activity section to ensure learners are actively doing, discussing, creating, comparing, sorting, measuring, counting or investigating.
5. Use the assessment guide during the activity to observe learners' progress and the extent to which they demonstrate the intended competence.
6. Adapt and modify the activity to meet diverse learning needs, including learners who require additional support or additional challenge.
7. Use simple English and, where helpful, code-switch to a familiar local language so that instructions and key ideas are clearly understood.
8. Review the tips/safety precautions and key learning point before the activity.

Tips for Successful Implementation

- Create a positive, inclusive and supportive learning environment.
- Encourage active participation, cooperation and communication.
- Use visual aids, real objects and familiar examples.
- Allow repeated practice and exploration.
- Give timely feedback and support learners who need additional help.
- Prioritise safety, hygiene and age-appropriate supervision.

INTRODUCTION

The Pre-Mathematics and Science Teaching Module is designed for Early Childhood Education learners and focuses on foundational mathematical and scientific ideas through practical, playful and meaningful experiences. It provides teachers with structured activities that encourage curiosity, observation, communication, collaboration, creativity, critical thinking and problem-solving.

The module is organised into topics, sub-topics, learning activities and detailed classroom activities. Activities use familiar objects, local environments, games, stories, movement, songs, role-play, drawing, sorting, counting, measuring and simple investigations so that learners can connect new ideas with everyday life.

Suggested Teaching and Learning Materials

Teaching and learning materials should be safe, age-appropriate, easy to handle and relevant to the activity. Teachers should use a combination of natural and artificial materials and improvise where necessary. Examples include stones, sticks, leaves, sand, water, number cards, bottle tops, blocks, picture cards, mock money, paper, crayons, containers, toys and locally available materials.

Small objects must be used under close supervision. Clean mock money is preferred for young learners; where real money is used, it should be clean and handled safely.

Learning Environment Set-up

- Natural Environment: safe school surroundings, playgrounds, gardens or other outdoor areas where learners can observe and explore real phenomena.
- Artificial Environment: classrooms, learning corners, role-play areas and other intentionally prepared spaces for guided learning.
- Technological Environment: where available and appropriate, simple digital resources may be used to show pictures, sounds, stories or simulations that support the activity.

Safety in the Learning Environment

Clear safety rules should be introduced in simple language and reinforced throughout activities. Teachers should inspect materials and learning spaces before use, supervise learners closely, prevent the use of sharp or hazardous objects, avoid excessive sun exposure, manage water and paint spills promptly, and ensure that small objects are not placed in the mouth.

Suggested Teaching Methodology

- Play-based learning
- Guided discovery and exploration
- Nature walks and observation
- Group work and collaboration
- Demonstration
- Problem-solving
- Storytelling, songs and games
- Role-play
- Simple investigation and experimentation

The choice of methodology should reflect the intended competence, learners' developmental level, available resources, the learning environment and safety considerations.

LEARNING ACTIVITIES

Learning activities are intentional experiences that promote participation, learning and the development of competences. In this module, every detailed activity follows the same sequence so that teachers can prepare and facilitate learning consistently:

- Activity title and purpose
- Hook
- Suggested Teaching and Learning Materials
- Learning Environment Set-up
- Teacher's Role
- Learners' Activity
- Assessment Guide
- Tips/Safety Precautions
- Skills Developed
- Key Learning Point

Icons Used in This Module

Key Terms	Assessment Guide	Skills to be developed
Learner Activity	Tips/Safety precaution	Key learning points/Summary

Assessment Methods

Assessment in Early Childhood Education should be continuous, practical and closely linked to the activity. Teachers should use evidence gathered while learners play, talk, manipulate objects, solve simple problems and demonstrate skills.

- Observation: watch learners as they participate, communicate, manipulate materials and complete tasks.
- Checklists: record whether learners can demonstrate selected skills or behaviours.
- Performance tasks: ask learners to show what they can do through a practical task, drawing, model, pattern, explanation or role-play.
- Questioning and feedback: use simple oral questions to probe understanding and give immediate support.
- Portfolios: keep selected samples of learners' work to show progress over time.

Time Allocation

The standard period allocation for Pre-Mathematics and Science at Early Childhood Education level should follow the current Zambia Education Curriculum Framework and the approved Level 2 timetable. Teachers should organise the activities within the prescribed contact time and adjust the pace to learners' needs.

Key Competences to Be Developed

S/N	Competence	Descriptors
1	Analytical Thinking	Identify patterns; organise simple information; compare observations; consider possible solutions.
2	Communication	Use simple mathematical and scientific language; express ideas through speech, drawings, objects and symbols; listen and respond to others.
3	Creativity and Innovation	Explore objects and materials; try different ways of completing a task; create patterns, models, drawings and simple solutions.
4	Collaboration	Work with peers; share materials; take turns; participate in group play and practical activities.
5	Critical Thinking	Ask and answer simple questions; classify, match, arrange and compare objects; make predictions and explain observations.
6	Environmental Sustainability	Identify and care for the local environment; use materials responsibly; practise simple actions that protect resources and reduce waste.
7	Problem-Solving	Use counting, patterns, relationships, shapes, measurement and observations to complete simple tasks and solve everyday problems.

TERM 3

TOPIC 1: Exploring My World

In this topic, learners explore their surroundings by observing, touching, asking questions and sharing experiences. They use familiar objects and situations from home, school and the community to develop early mathematical and scientific ideas.

For Term 3, the topic focuses on Numbering Things and Things in the Surroundings. Learners develop number recognition, matching, money awareness and early measurement through practical and play-based experiences. The activities promote curiosity, responsibility, cooperation and confidence while strengthening critical thinking and problem-solving.

Key Competences

- Collaboration
- Communication
- Analytical Thinking
- Critical Thinking
- Problem-Solving

Key Concepts

- Number and quantity
- Matching and sequencing
- Money and financial literacy
- Measurement
- Comparison and classification

Sub-Topic 2: Numbering Things

In this sub-topic, learners develop the concept of number by recognising numerals and number names, counting objects, matching numbers to quantities and practising number formation. Practical and play-based activities build one-to-one correspondence, sequencing, visual recognition and early mathematical language.

Specific Competence

- Recognise numbers.

KEY TERMS

- **Quantity:** How many objects are in a group.
- **Count:** To say numbers in order while pointing to or moving one object at a time.
- **One-to-One Correspondence:** Matching one number word to one object while counting.
- **Sequence:** The order in which numbers follow one another.
- **Numeral:** A written symbol used to represent a number.
- **Number Name:** The word used to name a number, for example five.
- **Match:** To pair a numeral with its number name or with the correct quantity.
- **More:** A larger quantity than another group.
- **Less:** A smaller quantity than another group.

LEARNING ACTIVITY 1: Recognising Written Numbers and Number Names up to 20

Learners recognise written numerals and their number names from 1 to 20. They connect symbols, spoken number words and quantities through matching, reading, counting and sorting.

ACTIVITY 1.1: Match the Number to Its Name

In this activity, learners will develop the ability to recognise written numbers and their corresponding names from 1 to 20 through engaging and interactive tasks. By matching, reading, and identifying numbers and words, learners build foundational literacy and numeracy skills such as visual recognition, early reading, counting, and memory. The activity encourages active participation, communication, and collaboration as learners work in pairs or groups. It also promotes confidence and independence as learners beginto read simple number names on their own. Understanding numbers and their names is essential for everyday life, helping learners to solve problems, follow instructions, and use numbers meaningfully in their environment.

HOOK

"What number is this?"

Suggested Teaching and Learning Materials

- **Natural Materials:** stones, sticks
- **Artificial Materials:** bottle tops, number cards and number-name cards (1-20)

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: any safe outdoor learning area, where appropriate

Teacher's Role

- Introduce number cards (1-20) alongside their written names (one-twenty).
- Point, read aloud, and model pronunciation (e.g., "This is 3 - three").
- Use real objects (stones, bottle tops, sticks) to show quantity while displaying the number and its name.
- Encourage learners to repeat after the teacher.
- Give learners mixed number cards and word cards.
- Guide them to match numbers with their correct names.
- Move around to support learners and correct mistakes.

Learners' Activity

- Observe, listen, and repeat number names.
- Match what they hear with what they see on cards.
- Count objects as the teacher demonstrates.
- Work in pairs or small groups to match numbers (e.g., 5) with names (five).
- Say the number and name aloud after matching.
- Sort cards in order from 1 to 20.
- Independently match numbers to names.

Assessment Guide

- Observe learners as they match what they hear to what they see on the board.
- Observe learners as they count as the teacher demonstrates.
- Observe learners sort cards in order from 1 to 20.

Tips/Safety Precautions

- Use large, clear cards. Supervise small objects closely and do not allow learners to put bottle tops or stones in their mouths.

Skills to be Developed

Recognition, matching, counting, early reading, communication.

Key Learning Point

A numeral represents a number, and a number name is the word used to say that number.

LEARNING ACTIVITY 2: Writing Numbers up to 20 Using Different Criteria

Learners practise writing numbers from 1 to 20 with attention to correct formation, size, spacing and neatness. They use air-writing, sand, chalkboards, paper and other suitable materials to strengthen fine-motor coordination and confidence.

ACTIVITY 2.1: Creative Number Writing (1-20)

In this activity, learners will explore writing numbers from 1 to 20 using different criteria such as size, spacing, and patterns through fun and hands-on experiences. By engaging with a variety of materials like sand, chalk, and paper, learners will strengthen their number formation and fine motor skills while developing confidence in writing. The activity encourages creativity and careful observation as learners learn to present their work clearly and neatly.

Through guided and independent practice, learners will build important values such as patience, as they take time to form numbers correctly; neatness, as they present their work clearly; and responsibility, as they take care of materials and complete tasks. The activity also promotes confidence and independence, helping learners take pride in their work and express themselves through writing. These values support positive learning habits and prepare learners for everyday use of numbers in real-life situations.

HOOK

"Let's turn numbers into art!"

Suggested Teaching and Learning Materials

- **Natural Materials:** clean sand
- **Artificial Materials:** sand trays, number cards (1-20), chalkboards/slates, paper and pencils or crayons

Learning Environment Set-up

- Artificial Environment: classroom or learning corner

Teacher's Role

- Introduce numbers 1-20 using charts and number cards.
- Demonstrate correct number formation (e.g., writing in the air, on the board).
- Show different ways of writing numbers (big/small sizes, straight/curved lines, using sand, chalk, or finger tracing).
- Explain the criteria (size, spacing, neatness, and formation).
- Provide learners with materials (sand trays, chalkboards, paper).
- Guide learners to write numbers 1-20 following given criteria (e.g., "Write big numbers", "Write small numbers", "Write in a line").
- Move around to support and correct learners.
- Give individual tasks (e.g., write numbers 1-20 neatly in books using correct formation and spacing).
- Provide minimal support and observe performance.

Learners' Activity

- Observe and listen carefully.
- Trace numbers in the air and on their desks.
- Repeat number formation with guidance.
- Practice writing numbers using different materials.
- Follow instructions based on criteria (size, spacing, neatness).
- Work in pairs to check each other's work.
- Independently write numbers 1-20 using the given criteria.

Assessment Guide

- Observe learners' ability to correctly write numbers 1-20.
- Observe learners' ability to follow given criteria (size, spacing, neatness).
- Observe learners demonstrate proper number formation.
- Observe learners complete the task independently.

Tips/Safety Precautions

- Use clean, dry sand and age-appropriate writing tools. Encourage correct number formation without rushing learners.

Skills to be Developed

Fine-motor coordination, number formation and writing, observation and confidence.

Key Learning Point

Correct number formation uses a consistent starting point, direction, size and spacing.

LEARNING ACTIVITY 3: Matching Things to Numbers up to 20

Learners count familiar objects and match each group to the correct numeral. The activity strengthens one-to-one correspondence, counting accuracy, number recognition and the connection between numbers and real quantities.

ACTIVITY 3.1: Count and Match Fun

In this activity, learners will develop the ability to match numbers with the correct quantity of objects up to 20 through practical and engaging experiences. By counting and grouping familiar items from their environment, learners strengthen essential numeracy skills such as one-to-one correspondence, number recognition, and observation. The activity encourages active participation as learners explore, count, and make meaningful connections between numbers and real objects.

Working individually and in groups, learners will build confidence and improve communication skills as they explain their answers. The activity also promotes important values such as cooperation, responsibility, and accuracy, as learners handle materials carefully, work together, and strive to match correctly. This understanding helps learners apply numbers in everyday situations, such as sharing, sorting, and organising objects in their daily lives.

HOOK

"Can you find three objects and match them to the number 3?"

Suggested Teaching and Learning Materials

- **Natural Materials:** stones, sticks
- **Artificial Materials:** bottle tops, number cards (1-20)

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: any safe outdoor learning area, where appropriate

Teacher's Role

- Introduce numbers 1-20 using number cards.
- Display objects (e.g., bottle tops, stones, sticks) and count them aloud.
- Demonstrate matching a number to a group of objects (e.g., 5 bottle tops → number 5).
- Ask simple questions like, "Which number matches these objects?"
- Provide learners with number cards and groups of objects.
- Guide learners to match correct quantities to numbers.
- Support and correct learners as they work in pairs or groups.
- Give individual tasks (e.g., worksheets or practical tasks).
- Observe learners as they match numbers independently.

Learners' Activity

- Observe and listen.
- Count objects with the teacher.
- Respond to questions and identify correct matches.
- Count objects and match them to the correct number card.
- Work in pairs/groups to complete matching tasks.
- Say the number aloud after matching.
- Independently match numbers to groups of objects.
- Draw lines or group items to show correct matches.

Assessment Guide

- Observe learners' ability to correctly count objects up to 20.
- Observe learners accurately match numbers with quantities.
- Observe learners as they participate actively in activities.

Tips/Safety Precautions

- Provide enough objects for each pair or group and supervise small materials to prevent choking or throwing.

Skills to be Developed

Counting, number recognition, observation, problem-solving, communication.

Key Learning Point

Each number can be matched to a group containing the same number of objects.

EXPECTED STANDARD: Numbers 1-20 recognised correctly.

Sub-Topic 3: Things in the Surroundings

In this sub-topic, learners use familiar objects and everyday situations to develop early financial literacy and measurement. They recognise and care for money, arrange money in simple patterns, plan a small budget, compare the length and width of objects, and measure using non-standard units. These experiences help learners use mathematics meaningfully in their surroundings.

Specific Competences

- Recognise money.
- Compare and measure the length and width of familiar objects using simple and non-standard units.

KEY TERMS

- **Coin:** A piece of money made in a round or shaped form.
- **Note:** Paper money with a stated value.
- **Money:** Coins and notes used to buy goods and services.
- **Denomination:** The value shown on a coin or note.
- **Pattern:** An arrangement that repeats or follows a rule.
- **Budget:** A simple plan for how available money will be used.
- **Length:** How long or short an object is.
- **Width:** How wide or narrow an object is.
- **Non-Standard Unit:** An informal unit such as a stick, block, hand span or paper strip used for measuring.

Key Concepts

- Financial literacy
- Patterns and sequencing
- Budgeting
- Length and width
- Non-standard measurement

LEARNING ACTIVITY 1: Forming Patterns Using Coins and Small Notes up to K10

Learners use mock coins and notes to create, continue and explain simple repeating patterns. The activity develops pattern recognition, sequencing, concentration, money recognition and fine-motor coordination.

ACTIVITY 1.1: Coin Tower Pattern

Coin tower pattern is a fun and hands-on activity that helps learners explore patterns, counting, and sequencing using coins. As learners stack and arrange coins in repeating or growing patterns, they develop a deeper understanding of order and relationships between numbers. The activity builds skills such as pattern recognition, counting, fine motor coordination, concentration, and problem-solving, while promoting values like patience, creativity, cooperation, responsibility, and active participation.

HOOK

"Can you make a pattern like this: K1, K2, K1, K2?"

Suggested Teaching and Learning Materials

- **Natural Materials:** None required for this activity.
- **Artificial Materials:** clean mock coins and notes (K1, K2, K5 and K10), small cups or containers for stacking

Learning Environment Set-up

- Artificial Environment: classroom

Teacher's Role

- Introduce the concept of patterns using coins and small notes.

- Demonstrate simple patterns (e.g., K1, K2, K10, K1, K2, K10 or K5, K2, K10, K5, K2, K10) using clean mock coins and notes.
- Explain that patterns can be repeated, extended or completed.
- Ask questions to check prior knowledge, such as; "What comes after this coin?" and "Can you see the repeating sequence?"
- Divide learners into pairs or small groups.
- Distribute coins and small notes to each group.
- Create a pattern using K1, K2, K5 and K10 coins and notes.
- Complete a given pattern (e.g., K5, K1, K10, K5, __, __).
- Move around the class to support, guide, and correct learners.
- Ask learners to present and explain their patterns.

Learners' Activity

- Observe the teacher demonstrate making simple pattern.
- Respond to questions and predict the next item in the pattern.
- Work in groups to create patterns using K1, K2, K5 and K10 coins and notes.
- Work in groups to complete the pattern.

Assessment Guide

- Observe learners work in groups arranging coins and notes into patterns.
- Observe learners' ability to explain their patterns to the class or teacher.

Tips/Safety Precautions

- Use clean mock money where possible. Ensure coins and small items are large enough to handle safely and are not placed in the mouth.

Assessment Checklist

Name of learner	Are learners able to **identify coins and notes** for pattern making?	Are learners able to **form simple patterns** using money?	Are learners able to **continue** a given **money pattern**?	Are learners able to **arrange coins and notes** in the correct order?	Are learners able to **build a coin tower** pattern correctly?	Are learners able to **explain the pattern** made?
Anna						
Ben						
Chola						

- You can mark each box using **Yes / No**, **Able / Not Able**, or ✓ / ✗ **depending on what want and help the learners who are behind to catchup**

Skills to be Developed

Communication, critical thinking, problem-solving, collaboration, fine motor.

Key Learning Point

A pattern follows an order that can be repeated, continued or completed.

LEARNING ACTIVITY 2: Caring for Money

Learners discuss and demonstrate responsible ways of handling and storing money. They distinguish good and poor practices and use role-play to develop respect for money and responsible financial habits.

ACTIVITY 2.1: Taking Care of Our Money

In this activity, learners will develop the skills and habits needed to care for money responsibly. They will learn how to handle coins and notes carefully, keep money safe, and understand its importance in daily life. Through practical exercises, discussions, and role-play, learners will build numeracy skills such as counting and organising money, as well as decision-making skills for using money wisely.

This activity also promotes important values such as honesty, as learners learn not to lose or misuse money; responsibility, by taking care of their own money; self-discipline, by managing money properly; and respect, for the effort it takes to earn and save money. By practicing these skills and values, learners develop confidence and independence, laying a foundation for wise financial habits that will benefit them throughout life.

HOOK

"How do you keep money safe?"

Suggested Teaching and Learning Materials

- **Natural Materials:** None required for this activity.
- **Artificial Materials:** clean mock coins and notes (50 ngwee to K10), wallet, purse, envelope or money box, picture cards showing correct and incorrect ways of caring for money

Learning Environment Set-up

- Artificial Environment: classroom or role-play corner

Teacher's Role

- Introduce the topic by showing clean mock money (coins and notes).
- "What do we use money for?"
- "How should we care for money?"
- Ask learners to demonstrate how they care for money in real-life situations.
- Demonstrate good and bad ways of handling money (e.g., folding neatly vs crumpling, keeping in a wallet vs dropping on the floor).
- Explain the importance of keeping money safe, clean and organised.
- Provide learners with clean mock money.
- Sorting clean vs damaged money.
- Practicing proper storage (e.g., placing money in an envelope or wallet).
- "Where should we keep our money?"
- Move around the class to support and guide learners.

Learners' Activity

- Answer questions and share their ideas.

- Observe the teacher's demonstration.
- Identify correct and incorrect ways of handling money.
- Independently demonstrate proper handling of money.
- Role-play real-life situations (e.g., receiving change and keeping it safely).
- Practice keeping money neatly (not folding excessively or tearing).
- Draw or explain ways of caring for money.
- Discuss with peers the importance of caring for money.

Assessment Guide

- Observe learners practice proper ways of handling money.
- Observe learners' ability to explain the importance of caring for money.

Tips/Safety Precautions

- Use clean mock money where possible. Emphasise safe handling, handwashing and keeping money away from the mouth.

Assessment Checklist

Name of learner	Are learners able to tell that **money is important**?	Are learners able to **keep money safely**?	Are learners able to **avoid tearing** or **scribbling on money**?	Are learners able to **explain how** to **care** for **money**?	Are learners able to **show responsible handling** of **money**?	Are learners able to **practice good habits** when using **money?**
Anna						
Ben						
Chola						

- You can mark each box using **Yes / No**, **Able / Not Able**, or ✓ / ✗ **depending on what want and help the learners who are behind to catchup**

Skills to be Developed

Communication, critical thinking, problem-solving, collaboration, fine motor.

Key Learning Point

Money should be handled carefully, kept clean and stored safely.

LEARNING ACTIVITY 3: Sequencing Money in Patterns

Learners identify money denominations and arrange them in repeating patterns or simple value sequences. They predict missing items and explain the order they have created.

ACTIVITY 3.1: Learning Money Patterns

In this activity, learners will explore sequencing money by arranging coins and notes (K2, K5, K10) in patterns. Through hands-on practice, learners will develop essential numeracy skills such as counting, recognising money denominations, identifying patterns, and organising items in order. This activity encourages observation, concentration, and problem-solving as learners carefully place coins and notes in the correct sequence. It also fosters important values such as responsibility, as learners learn to handle money carefully; honesty, in respecting the value of money; patience, when completing sequences accurately; and cooperation, as learners work together during group activities. By learning to sequence money, learners gain confidence in using coins and notes correctly, build a foundation for financial literacy, and develop habits that support responsible money management in everyday life.

HOOK

"Can you find the missing item in this money pattern?"

Suggested Teaching and Learning Materials

- **Natural Materials:** None required for this activity.
- **Artificial Materials:** mock coins and notes (K1, K2, K5 and K10), money picture cards or pattern strips

Learning Environment Set-up

- Artificial Environment: classroom

Teacher's Role

- Introduce coins and notes (K1, K2, K5, K10) using clean mock money.
- Display a simple pattern (e.g., K1, K2, K5, K10, K2, K5, K10).
- Explain what sequencing and patterns mean.
- "What comes next in this pattern?"
- "Which coin or note is repeated?"
- Provide learners with coins and notes.
- Give structured activities such as:
- Arrange K2, K5, K10 in a repeating pattern.
- Complete the sequence (e.g., K2, K5, __, K2, __).
- Guide learners step by step and correct errors.
- Encourage group or pair work for collaboration.
- Learners' Activities.
- Observe and identify the coins and notes presented.
- Listen to explanations and respond to questions.
- Predict the next item in the sequence.
- Arrange coins and notes into correct sequences.
- Complete given patterns with missing values.

Learners` Activities

- Observe and identify the coins and notes presented.
- Listen to explanations and respond to questions.
- Predict the next item in the sequence.
- Arrange coins and notes into correct sequences.
- Complete given patterns with missing values.

Assessment Guide

- Observe and assess learners' understanding and accuracy.
- Observe learners' responses to questions asked.
- Observe learners' responses to questions.

Tips/Safety Precautions

- Use simple patterns first, then increase the challenge gradually. Supervise learners when handling small money pieces.

Assessment Checklist

Name of learner	Are learners able to **identify different money** denominations?	Are learners able to **arrange money** in the correct order?	Are learners able to **sequence money** from smaller value to bigger value?	Are learners able to **sequence money** according to a given pattern?	Are learners able to **recognise missing money** in a sequence?	Are learners able to **complete the money sequence** with little help
Anna						
Ben						
Chola						

- You can mark each box using **Yes / No**, **Able / Not Able**, or **✓ / ✗ depending on what want and help the learners who are behind to catchup.**

Skills to be Developed

Pattern recognition, problem-solving, communication, critical thinking and collaboration.

Key Learning Point

Coins and notes can be arranged in a repeating sequence or ordered by value.

LEARNING ACTIVITY 4: Setting a Simple Budget

Learners use a small K1-K10 budget to choose simple items, distinguish needs from wants and make a mini shopping list without exceeding the available amount.

ACTIVITY 4.1: Planning a Mini Shopping List (K1-K10 Budget)

In this activity, learners will practice planning a mini shopping list, learning how to decide what items they need and how to organise them before shopping. Through hands-on exercises, learners will develop important numeracy and organisational skills, such as counting items, understanding quantities, comparing prices, and making simple decisions about what to buy. This activity also strengthens critical thinking and planning abilities as learners prioritise their choices.

It promotes key values such as responsibility, by helping learners plan thoughtfully; honesty, in keeping track of items and money; self-discipline, by choosing wisely within limits; and cooperation, when working in groups to discuss and plan the list. By engaging in this activity, learners gain confidence, independence, and practical skills that prepare them to make informed decisions in everyday life while understanding the importance of planning and resource management.

HOOK

"Let's go shopping. What can we buy without spending more than K10?"

Suggested Teaching and Learning Materials

- **Natural Materials:** None required for this activity.
- **Artificial Materials:** mock money (K1-K10), price tags, picture cards or classroom items, mini shopping-list sheet

Learning Environment Set-up

- Artificial Environment: classroom or role-play shop

Teacher's Role

- Introduce the concept of planning a shopping list within a budget of K1 to K10.
- Provide learners with mock money (K1 - K10), price tags, and items or picture cards.
- Guide learners to create a shopping list without exceeding the budget.
- Explain what needs are (e.g., clothes, food) and what wants are (e.g., sweets, biscuits).
- Demonstrate a simple shopping list using mock prices within the budget:
- Pen - K2.
- Sweet - K1.
- Book - K3.
- "If you have K5, what will you buy first?"
- "Do you have enough money?"
- Ask learners to create their own shopping list independently within K1 -K10.

Learners' Activity

- Listen and observe the teacher's example.
- Identify needs and wants within the budget.
- Answer questions about what they would buy with a limited amount.
- Work in pairs or small groups to select items and make a list within K1-K10.
- Discuss in small groups why they chose certain items.
- Make an independent shopping list within the budget of K1 to K10.

Assessment Guide

- Observe and assess learners' ability to plan, calculate, and prioritise purchases.
- Observe learners' ability to explain why each item was chosen.
- Listen to learners' understanding of spending and saving wisely.

Tips/Safety Precautions

- Use mock money and simple whole-kwacha prices. Keep the task within the K10 budget and focus on needs before wants.

Skills to be Developed

Basic financial literacy (budgeting and spending wisely), Numeracy (addition, subtraction, counting money), Decision-making and prioritisation, Problem-solving, Critical thinking, Communication.

Key Learning Point

A simple budget helps us choose what to buy without spending more money than we have.

LEARNING ACTIVITY 5: Comparing Lengths and Widths of Different Objects

Learners compare familiar objects and describe them using the words long, short, wide and narrow. The activity builds observation, comparison and spatial language.

ACTIVITY 5.1: Exploring Lengths and Widths

In this activity, learners will explore the lengths and widths of different objects in their environment, developing an understanding of size, measurement, and spatial awareness. Through hands-on activities such as measuring, comparing, and sorting objects, learners will strengthen observation, analytical, and problem-solving skills while learning how to describe objects accurately using terms like long, short, wide, and narrow. The activity also promotes important values such as accuracy, by encouraging careful measurement; patience, as learners take time to compare objects; responsibility, in handling materials carefully; and cooperation, when learners work together to explore and discuss findings. By engaging in this activity, learners develop confidence, critical thinking, and practical skills that help them understand and interact meaningfully with the world around them.

HOOK

"Which object is longer or wider? Let's find out."

Suggested Teaching and Learning Materials

- **Natural Materials:** sticks or leaves of different lengths
- **Artificial Materials:** books, pencils, desks, tables, ribbons or paper strips

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: school surroundings, where appropriate

Teacher's Role

- Introduce the activity by showing learners two books of different widths and lengths.
- Ask learners what differences they can see in the two books.
- Show the learners the differences in length and width in the two books.
- Ask learners to compare the lengths and widths of different objects in the classroom (e.g., desk/table).
- Invite learners to use the words long, short, wide and narrow when comparing objects.
- Allow learners to compare a second pair of objects independently.

Learners' Activity

- Respond to oral questions.
- Compare the lengths and widths of two different table/desks.
- Compare the lengths and widths of different objects in the classroom (e.g., desk/table).

- Use the words long, short, wide and narrow to describe what they observe.
- Work in pairs to compare and explain their findings.

Assessment Guide

- Observe learners as they compare the lengths and widths of two objects.
- Listen for correct use of the words long, short, wide and narrow.

Tips/Safety Precautions

- Choose objects that are safe to handle and easy to compare. Use the words long, short, wide and narrow consistently.

Skills to be Developed

Communication, critical thinking, problem-solving, collaboration, observation, comparison.

Key Learning Point

Length describes how long or short an object is; width describes how wide or narrow it is.

LEARNING ACTIVITY 6: Measuring Length and Width Using Non-Standard Units

Learners measure the length and width of familiar objects using non-standard units such as sticks, blocks, hand spans, footsteps, paper strips or string. They count the units and compare results.

ACTIVITY 6.1: Let's Measure

In this activity, learners will explore measuring the lengths and widths of different objects using non-standard units such as sticks, blocks, or paper strips. Through hands-on experience, learners will develop important mathematical skills including observation, counting, comparing, and problem-solving, while learning how to estimate and measure objects in practical ways. This activity makes learning fun and relatable, as learners use familiar materials to understand size and measurement.

It also promotes key values such as accuracy, by encouraging careful measurement; patience, while repeating measurements for correctness; responsibility, in handling objects and materials carefully; and cooperation, as learners work together and share their findings. By engaging in this activity, learners gain confidence, develop critical thinking, and build foundational skills for understanding measurement in everyday life.

HOOK

"How long is our desk? Let's measure it."

Suggested Teaching and Learning Materials

- **Natural Materials:** sticks, hand spans, footsteps
- **Artificial Materials:** blocks, paper strips or string, books, pencils, desks, chairs

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: school surroundings

Teacher's Role

- Show learners how to measure an object using a non-standard unit (e.g., placing sticks end-to-end along the length of a book).
- Demonstrate measuring both length and width.
- Explain that the same unit should be used consistently for an object.

- Divide learners into pairs or small groups.
- Give each group non-standard units (sticks, blocks, etc.) and objects to measure.
- Guide learners to: measure the length and width of each object using the chosen unit.
- Ask learners to count how many units long or wide the object is.
- Teacher moves around to support and correct learners as needed.
- Give learners a set of objects to measure independently.
- Ask them to draw or write down their measurements using non-standard units.

Learners' Activity

- Observe the teacher and ask questions.
- Try measuring small objects in the air or on the table using one non-standard unit:
- Measure and record the lengths and widths of 3-5 classroom objects.
- Compare results with peers to see if measurements match.

Assessment Guide

- Observe learners' ability to measure objects correctly using non-standard units.
- Observe learners' ability to count units accurately and consistently.

Tips/Safety Precautions

- Model how to place non-standard units end-to-end without gaps or overlaps. Use the same unit for each measurement.

Name of Learner	Are learners able to identify objects whose length or width can be measured?	Are learners able to select suitable non-standard units such as blocks, sticks, bottle tops or hand spans?	Are learners able to place the non-standard units correctly from one end of an object to the other?	Are learners able to measure the length and width of objects using non-standard units?	Are learners able to compare measurements and tell which object is longer, shorter, wider or narrower?
Anna					
Ben					
Chola					
_____					

Skills to be Developed

Observation and careful measuring, Counting and comparison, Analytical thinking.

Key Learning Point

Non-standard units can be used to measure length and width when the same unit is placed consistently.

EXPECTED STANDARD: Money up to K10 recognised correctly.

TOPIC 3: Exploring the Sky and Seasons

This topic helps learners observe the sky, weather and seasonal changes in their local environment. Through stories, songs, games, picture discussions and outdoor observations, learners develop awareness of how natural changes influence clothing, farming, travel, play and other daily activities.

The activities strengthen observation, communication, comparison, reasoning and environmental awareness while promoting curiosity, cooperation and responsible behaviour.

Key Competences

- Collaboration
- Communication
- Analytical Thinking
- Critical Thinking
- Problem-Solving

Sub-Topic 1: Time and Seasons

Time and seasons help learners understand patterns and changes that occur in daily life and in the environment. Learners relate daily routines to different times of day and recognise seasonal conditions such as hot, cold and wet weather. In this Term 3 sequence, the activities place particular emphasis on seasonal changes and their effects on the local environment.

Specific Competences

- Tell time by activities of the day.
- Recognise seasonal and environmental changes in the local environment.

KEY TERMS

- **Time:** How we describe when events happen, for example morning, afternoon or night.
- **Day:** The period when it is generally light because the sun is above the horizon.
- **Night:** The period when it is generally dark and the moon or stars may be visible.
- **Season:** A period of the year with particular weather conditions.
- **Hot:** Having a high temperature or feeling very warm.
- **Dry:** Having little or no rain or moisture.
- **Wet:** Having rain or a lot of moisture.
- **Climate Change:** Long-term changes in usual weather patterns that can affect the local environment.

Key Concepts

- Time and daily routines
- Weather
- Hot, cold and wet seasons
- Seasonal change
- Environmental change

LEARNING ACTIVITY 1: Recognising the Hot Season in Zambia through Games, Stories and Songs

Learners identify common features of the hot season in Zambia through familiar objects, pictures, stories, songs and simple games. They also discuss safe ways of staying comfortable in hot weather.

ACTIVITY 1.1: Hot Season Fun

Learners will explore and recognise the hot season in Zambia through engaging games, stories, and songs drawn from their local environment. Through these interactive experiences, learners will develop observation, listening, communication, and critical thinking skills as they identify common features of the hot season such as high temperatures, dry conditions, and changes in daily activities. This activity strengthens language development, creativity, and memory while making learning enjoyable and meaningful. It also promotes values of awareness, adaptability, cooperation, and care for self and others by helping learners understand how to stay safe and healthy during the hot season.

HOOK

"Look outside. How can we tell that the weather is hot?"

Suggested Teaching and Learning Materials

- **Natural Materials:** sunlight, dry grass
- **Artificial Materials:** hat, water bottle, umbrella, picture cards

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: school surroundings or shaded outdoor area

Teacher's Role

- Introduce the hot season using a short story or song about sunny, hot days in Zambia.
- Show pictures or real objects (e.g., sun, hat, water bottle, dry grass, umbrella).
- Ask guiding questions: "How do we feel when it is very hot?"
- Organise a simple game (e.g., sorting or matching items used in the hot season like hats, water, shade vs. non-related items).
- Lead learners in a song or action game about the sun and staying cool.
- Guide learners to repeat key words (hot, sun, dry, water).
- Ask learners to draw or talk about what happens during the hot season.
- Encourage learners to explain their drawings or act out how they stay safe in hot weather.

Learners' Activity

- Listen to the story/song and observe the materials.
- Respond to simple questions and share experiences.
- Draw or describe hot season experiences.
- Take part in a simple sorting, matching, song or action game about the hot season.
- Explain one way to stay safe and comfortable in hot weather.

Assessment Guide

- Observe learners' ability to respond to oral questions.
- Observe learners' ability to draw hot-season experiences.
- Observe whether learners can identify at least two features of the hot season.
- Listen for one appropriate way of staying safe in hot weather.

Tips/Safety Precautions

- Conduct outdoor activities in a shaded or safe area, provide water breaks and avoid prolonged exposure to strong heat

Assessment Checklist

Name of Learner	**Are learners able to identify things seen in the sky such as the sun, clouds, moon and stars?**	**Are learners able to describe simple changes in the sky such as sunny, cloudy or rainy conditions?**	**Are learners able to identify different seasons such as rainy, cool dry and hot dry seasons?**	**Are learners able to match weather conditions with the correct season?**	**Are learners able to identify suitable clothing or activities for different weather conditions and seasons with little help?**
Anna					
Ben					
Chola					

Note: You can mark each box using **Yes / No**, **Able / Not Able**, or ✓ / ✗ depending on the learner's performance. Give additional support and practical experiences to learners who need help to develop the required skills.

Skills to be Developed

Listening, observation, communication, classification.

Key Learning Point

The hot season is characterised by high temperatures and requires safe habits such as drinking water and seeking shade.

LEARNING ACTIVITY 2: Comparing Pictures of the Same Place during Different Seasons

Learners compare pictures of the same place in different seasons and identify similarities and differences in weather, vegetation, clothing and activities.

ACTIVITY 2.1: Same Place, Different Seasons

Learners will explore and compare pictures of the same place taken during different seasons, such as the rainy and dry seasons, to observe how the environment changes over time. Through guided observation and discussion, learners will develop important skills in comparison, critical thinking, and communication as they identify differences and similarities between the pictures. This activity also enhances language development as learners describe what they see and express ideas clearly. Additionally, it fosters values such as curiosity, appreciation for nature, cooperation, and responsibility, helping learners understand the effect of seasonal changes on their environment and daily life.

HOOK

"Look at these two pictures. What is the same and what is different?"

Suggested Teaching and Learning Materials

- **Natural Materials:** None required for this activity.
- **Artificial Materials:** paired picture cards showing the same place in different seasons, season labels or sorting cards

Learning Environment Set-up

- Artificial Environment: classroom

Teacher's Role

- Display two or more pictures of the same place during different seasons (e.g., rainy and dry season).
- Ask guiding questions: “What do you see?”, “Are these pictures the same or different?”
- Introduce simple vocabulary such as rainy, dry, green, cloudy, sunny.
- Guide learners to compare the pictures by pointing out differences and similarities.
- Organise a matching or sorting game (e.g., grouping pictures by season).
- Ask learners to draw or talk about how the same place looks in different seasons.
- Encourage learners to explain their drawings or ideas.

Learners' Activity

- Observe the pictures carefully.
- Respond to questions and describe what they notice.
- Compare pictures in pairs or groups.
- Sort or match pictures according to the season.
- Use simple words to describe differences (e.g., wet/dry, green/brown).

Assessment Guide

- Observe learners' ability to respond to oral questions.
- Observe learners' ability to identify similarities and differences between pictures.
- Observe whether learners can use simple words such as wet, dry, green, brown, sunny or cloudy to describe differences.

Tips/Safety Precautions

- Use clear pictures of the same place so that seasonal differences are easy to observe. Avoid overwhelming learners with too many details.

Skills to be Developed

Observation, Listening, Communication, Comparison, Classification, Creativity, Critical thinking.

Key Learning Point

The same place can look different in different seasons because weather and environmental conditions change.

LEARNING ACTIVITY 3: Discussing Why Changes Happen over Time

Learners observe and discuss familiar changes such as growth, day and night, seasonal changes and changes in plants or surroundings. They begin to use simple cause-and-effect language.

ACTIVITY 3.1: Changes Around Us

Learners will explore and discuss changes that happen around them over time, such as day turning to night, plants growing, or seasons changing. Through observation, discussion, and simple examples from their local environment, learners will develop key skills in observation, reasoning, critical thinking, and communication. This activity encourages learners to notice and reflect on natural and everyday changes, enhancing their understanding of cause-and-effect relationships. It also promotes important values such as curiosity, patience, responsibility, cooperation, and respect for the

environment, helping learners appreciate that changes are a natural part of life and that caring for their surroundings is essential.

HOOK

"What changes can you see in these two pictures?"

Suggested Teaching and Learning Materials

- **Natural Materials:** plants at different stages, where available
- **Artificial Materials:** sequence picture cards (e.g., baby/child, caterpillar/butterfly, dry field/growing crop)

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: school surroundings, where suitable

Teacher's Role

- Introduce the idea of changes that happen over time using familiar examples, e.g., day turning to night, a seed growing into a plant, or ice melting.
- Organise a group discussion or sorting game: show pairs of "before and after" pictures (e.g., a caterpillar and a butterfly, a baby and a child, a dry field and a growing crop).
- Help learners identify what has changed and discuss why it happened.
- Use pictures, objects, or a short story to show changes.
- Ask guiding questions: "What do you notice?", "Has this always looked like this?
- Ask learners to draw or describe a change they have seen in their environment over time (e.g., a plant growing, a sunny day turning to rainy, a tree losing leaves).
- Encourage learners to explain their drawings to the class.

Learners' Activity

- Observe the pictures, objects, or story.
- Share what they notice about the changes.
- Listen and respond to questions.
- Work in pairs or small groups to describe changes.
- Compare "before and after" pictures and talk about the differences.
- Draw a picture showing a change over time.
- Present or describe their work to the class using simple sentences.

Assessment Guide

- Observe learners' ability to respond to oral questions.
- Observe learners' ability to identify changes that happen over time.
- Observe learners' ability to explain why a change happened in simple words.
- Listen to learners' explanations of why a change may have happened.

Tips/Safety Precautions

- Use familiar, age-appropriate examples of change and avoid examples that may frighten learners.

Skills to be Developed

Observation, Listening, Communication, Comparison, reasoning and critical thinking.

Key Learning Point

Living things and environments change over time, and these changes can be observed and described.

LEARNING ACTIVITY 4: Recognising Effects of Climate Change in the Local Environment

Learners observe or discuss simple environmental changes such as increased heat, dryness, reduced water, heavy rainfall or changes in plants. They suggest age-appropriate actions for caring for the environment.

ACTIVITY 4.1: Spot the Changes Around Us

Learners will engage in the activity "Spot the Changes Around Us" by observing and identifying changes in their immediate environment, such as increased heat, dryness, or changes in plants and water sources. Through guided exploration, discussion, and simple comparisons, learners will develop key skills in observation, comparison, and critical thinking. They will also strengthen communication skills as they describe what they see and share their ideas with others. This activity nurtures curiosity and encourages learners to make connections between environmental changes and their daily lives. It also promotes values of responsibility, cooperation, and care for the environment, helping learners understand the importance of protecting and sustaining their surroundings.

HOOK

"What changes have you noticed in our environment?"

Suggested Teaching and Learning Materials

- **Natural Materials:** dry grass, soil, leaves
- **Artificial Materials:** picture cards showing environmental changes, drawing paper and crayons

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: school surroundings

Teacher's Role

- Show pictures or tell a short story about changes in the environment (e.g., very hot weather, dry rivers, withered plants).
- Ask simple guiding questions: "What do you see?", "Is the place wet or dry?"
- Introduce simple terms like hot, dry, less rain, few plants.
- Organise a sorting or matching game using pictures (e.g., healthy environment vs. changed environment).
- Guide learners to identify and talk about differences.
- Support group discussions and correct misunderstandings.
- Ask learners to draw or talk about one change they have seen in their environment.
- Encourage learners to suggest simple ways to care for the environment (e.g., planting trees, saving water).

Learners' Activity

- Observe pictures and listen to the story.
- Respond to questions and share what they already know.
- Sort or match pictures into correct groups.
- Work in pairs or small groups to discuss what they see.
- Use simple words to describe changes (e.g., dry, hot, no water).
- Draw a picture or describe an environmental change.

Assessment Guide

- Observe learners' ability to identify simple effects of climate change (e.g., heat, dryness, less water).
- Observe learners' ability to sort or match pictures correctly.
- Listen to learners' suggestions for simple ways of caring for the environment.

Tips/Safety Precautions

- Keep environmental observations local and simple. Avoid unsafe areas, floodwater, sharp objects and excessive heat.

Assessment checklist

Name of Learner	Are learners able to identify simple changes in the local environment such as less rain, too much rain or very hot weather?	Are learners able to recognise effects of climate change such as drying plants, floods, drought or water shortages?	Are learners able to match changes in weather with their effects on people, animals and plants?	Are learners able to describe simple ways climate change affects daily life in their community?	Are learners able to identify simple actions that help care for the environment such as planting trees, saving water and avoiding burning rubbish?
Anna					
Ben					
Chola					

Note: You can mark each box using **Yes / No**, **Able / Not Able**, or ✓ / ✗ depending on the learner's performance. Give additional support through pictures, stories, observation walks and simple practical activities to learners who need help.

Skills to be Developed

Observation, listening, communication, classification, comparison and teamwork.

Key Learning Point

Environmental changes such as heat, dryness, heavy rainfall or reduced water can affect plants, animals and people.

EXPECTED STANDARD: Time of day told correctly through familiar daily activities.

TOPIC 4: Understanding Materials

Learners explore materials and objects in their environment by observing, touching, comparing, constructing and testing. The activities help learners notice properties such as shape, size, colour, whether an object sinks or floats, and how light creates shadows.

Hands-on exploration strengthens observation, classification, comparison, communication, prediction and critical thinking while promoting curiosity, creativity, cooperation and responsible use of materials.

Key Competences

- Analytical Thinking
- Critical Thinking
- Collaboration
- Communication

Sub-Topic 1: Shapes and Patterns

Learners identify, create, compare, trace and arrange shapes using familiar materials. They also investigate sinking and floating to explore how different materials behave in water.

Specific Competences

- Create simple shapes.
- Recognise sinking and floating objects in everyday life.

KEY TERMS

- **Dimension:** A measurement that describes the size of an object.
- **Constructing:** Building or making something from available materials.
- **Comparing:** Looking at two or more things to identify similarities and differences.
- **Shape:** The form or outline of an object.
- **Pattern:** A repeated arrangement that follows a rule.
- **Sink:** To move below the surface of a liquid.
- **Float:** To remain on the surface of a liquid.
- **Line:** A mark that may be straight, curved or zigzag and can be used to form shapes.

Key Concepts

- Comparison
- Construction
- Shapes
- Patterns
- Sinking and floating

LEARNING ACTIVITY 1: Making 3-Dimensional (3D) Shapes

Learners explore and construct simple 3D shapes using boxes, clay, sticks, paper and other safe materials. They handle real objects, name shapes and describe simple properties such as whether a shape can roll or stack.

ACTIVITY 1.1: Building Shapes in 3D

In this activity, learners will explore the exciting world of 3-dimensional shapes. They will use materials such as clay, straws, or cardboard to create shapes like cubes, spheres, and pyramids.

Through hands-on construction, learners will develop skills in observation, creativity, and spatial awareness, while understanding concepts of edges, faces, and vertices.

This activity also promotes problem-solving and teamwork, as learners figure out how to assemble shapes correctly. By engaging with shapes physically, learners will connect mathematical ideas to the real world, making learning meaningful, fun, and memorable.

HOOK

"Can you guess which 3D shapes were used to make this object?"

Suggested Teaching and Learning Materials

- **Natural Materials:** clay, sticks
- **Artificial Materials:** boxes, balls, tins, straws, cardboard, plasticine

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: school surroundings, where materials are collected

Teacher's Role

- Introduce simple 3D shapes such as cube, sphere, and cylinder using real objects (e.g., box, ball, tin).
- Allow learners to touch and observe the objects.
- Ask guiding questions: "Can it roll or stack?", "What shape is this?"
- Demonstrate how to make simple 3D shapes using materials such as clay, paper, boxes, or sticks and plasticine.
- Guide learners step-by-step in small groups.
- Provide support and encourage teamwork.
- Ask learners to independently create a 3D shape of their choice.
- Encourage them to explain what they have made and how they made it.

Learners' Activity

- Observe and handle the objects.
- Name shapes and describe what they notice.
- Work in groups to create 3D shapes using provided materials.
- Follow instructions and try different ways to build shapes.
- Create their own 3D shape.
- Present or describe their work to the class.

Assessment Guide

- Observe learners' ability to respond to oral questions.
- Observe learners' ability to identify and name simple 3D shapes.
- Observe learners use materials correctly to create shapes.
- Observe whether learners can describe one property of the shape they made, such as whether it can roll or stack.

Tips/Safety Precautions

- Use materials without sharp edges. Supervise the use of clay, straws and small construction pieces.

Skills to be Developed

Manipulation, fine-motor coordination, problem-solving, teamwork, creativity, observation, identification, communication and critical thinking.

Key Learning Point

3D shapes are solid objects that can be handled, built, rolled or stacked.

LEARNING ACTIVITY 2: Comparing Shapes by Size and Colour

Learners sort and compare shapes by attributes such as size and colour. They use simple descriptive language to explain how shapes are similar or different.

ACTIVITY 2.1: Shape Sort and Compare

Learners will explore and compare shapes made from different materials by observing their size and colour. Through hands-on activities such as sorting, grouping, and describing shapes, learners will develop important skills in observation, comparison, classification, and communication. They will learn to identify similarities and differences using simple language, strengthening both their thinking and language abilities. This activity also enhances concentration, fine motor skills, and problem-solving as learners interact with a variety of materials. It promotes values such as cooperation, patience, respect for materials, and appreciation of diversity, helping learners understand that objects can be different in many ways while still being useful in everyday life.

HOOK

"Spot the colours and find the shapes."

Suggested Teaching and Learning Materials

- **Natural Materials:** leaves or stones with clear shapes, where appropriate
- **Artificial Materials:** paper circles, wooden/plastic shapes of different sizes and colours, sorting trays

Learning Environment Set-up

- Artificial Environment: classroom

Teacher's Role

- Display a variety of shapes made from different materials (e.g., paper circles, wooden squares, plastic triangles) in different sizes and colours.
- Introduce key words: big/small, long/short, red/blue/green.
- Ask guiding questions: "Which shape is big?", "Which one is red?"
- Organise a sorting activity where learners group shapes by size (big/small) and by colour.
- Guide learners to compare shapes using simple language.
- Ask learners to create their own groups of shapes or draw shapes showing different sizes and colours.
- Encourage them to explain their work.

Learners' Activity

- Observe and touch the shapes.
- Name colours and sizes.
- Respond to questions.
- Sort shapes into groups based on size and colour.
- Compare shapes in pairs or small groups.
- Describe what they are doing (e.g., "This is a big blue circle").

Assessment Guide

- Observe learners' ability to identify shapes by size and colour.
- Observe learners' ability to sort shapes correctly into groups.
- Observe learners' ability to use simple descriptive language (e.g., big, small, red, blue).
- Observe learners' ability to participate actively in activities and group work.
- Observe learners' ability to respond to oral questions.

Tips/Safety Precautions

- Use large, easily handled shapes and ensure the sorting area is free from obstacles.
  Assessment checklist

• Name of Learner	**Are learners able to identify common shapes such as circles, squares, triangles and rectangles?**	**Are learners able to identify different colours of shapes?**	**Are learners able to compare shapes by size such as big/small or bigger/smaller?**	**Are learners able to group or match shapes according to colour and size?**	**Are learners able to describe similarities and differences between shapes with little help?**
Anna					
Ben					
Chola					

Note: You can mark each box using **Yes / No**, **Able / Not Able**, or ✓ / ✗ depending on the learner's performance. Give additional support and practice to learners who need help in identifying, comparing and sorting shapes by size and colour.

Skills to be Developed

observation, identification, communication, classification, comparison, teamwork, language development.

Key Learning Point

Shapes can be compared and grouped by attributes such as size and colour.

LEARNING ACTIVITY 3: Tracing, Drawing and Creating Shape Patterns

Learners trace and draw shapes, continue simple sequences and create their own patterns using shape cut-outs, cards and drawing materials.

ACTIVITY 3.1: Tracing, Drawing and Creating Shape Patterns

Learners will explore and create patterns using different shapes, developing essential skills in observation, critical thinking, sequencing, and problem-solving. Through hands-on activities, learners will identify repeating shapes, continue patterns, and design their own arrangements, which strengthens creativity, concentration, and fine motor skills. This activity also promotes values such as patience, perseverance, cooperation, and attention to detail, as learners work carefully and often collaborate with peers. By engaging with shape patterns, learners gain an understanding of order,

relationships, and organization in their environment, while appreciating the beauty and usefulness of patterns in everyday life.

HOOK

"Let's trace, draw and continue a shape pattern."

Suggested Teaching and Learning Materials

- **Natural Materials:** sticks or leaves for pattern-making
- **Artificial Materials:** shape cut-outs of different sizes and colours, pattern cards, coloured paper, glue or crayons

Learning Environment Set-up

- Artificial Environment: classroom or art corner
- Natural Environment: school surroundings, where appropriate

Teacher's Role

- Provide learners with pattern cards or boards showing shape sequences (e.g., circle - square - circle).
- Provide learners with shapes (cut outs or drawing).
- Provide learners with coloured paper.
- Ask learners to replicate the pattern using shapes (cut outs or drawing) on coloured paper. Patterns should be of different colours and sizes.
- Encourage learners to create their own patterns.

Learners' Activity

- Replicate the pattern using shapes (cut outs or drawing).
- Continue a given pattern by adding the next shape.
- Create a simple pattern of their own and explain the repeating rule.

Assessment Guide

- Observe learners' ability to create patterns.
- Discuss similarities/differences in the patterns.
- Ask questions like, "What is next in the pattern?".
- Observe whether learners can continue a given shape pattern correctly.

Tips/Safety Precautions

- Provide large shape pieces and non-toxic materials. Support learners who need help with tracing, cutting or gluing.

Skills to be Developed

Observation, comparison, classification, communication, collaboration, critical thinking and fine-motor coordination.

Key Learning Point

Patterns are created by repeating or arranging shapes according to a rule.

LEARNING ACTIVITY 4: Predicting and Testing Sinking and Floating

Learners predict whether familiar objects will sink or float, test their ideas in water, compare results and discuss what they observed.

ACTIVITY 4.1: Sinking and Floating Objects

In this activity, learners will predict and test which objects will sink in water and which ones will float. They will begin by observing and collecting different materials from their surroundings such as rocks, leaves, and plastic toys. They will be encouraged to touch, feel, and talk about these objects, then make simple predictions about whether each item will sink or float when placed in water. Through this hands-on exploration, learners will discover that different materials behave differently in water and beginto understand basic scientific ideas through experience.

HOOK

"Sink or float - what do you predict?"

Suggested Teaching and Learning Materials

- **Natural Materials:** stones, leaves, twigs, water
- **Artificial Materials:** plastic toys, bowl or basin, towel or cloth

Learning Environment Set-up

- Artificial Environment: classroom or science corner
- Natural Environment: safe outdoor area

Teacher's Role

- Show a container of water and a few objects (e.g., rock, leaf, plastic toy).
- Demonstrate placing one object in water and ask: "What do you think will happen?"
- Introduce simple terms: sink (goes down), float (stays on top).
- Divide learners into small groups and provide a bowl of water and different objects.
- Guide learners to predict first, then test each object.
- Ask questions: "Why do you think it sank?", "Why did it float?"
- Ask learners to draw or explain one object that sank and one that floated.
- Encourage them to give simple reasons (e.g., "The rock is heavy", "The leaf is light").

Learners' Activity

- Observe the demonstration.
- Listen and respond to questions.
- Share their ideas about what might happen.
- Collect or use given objects (rock, leaf, plastic toy, etc.).
- Predict whether each will sink or float before testing.
- Test objects and compare results with their predictions.
- Discuss findings in groups. Draw or talk about their results.
- Present findings to the class or in small groups.

Assessment Guide

- Observe learners' ability to predict whether each object will sink or float before testing.
- Observe learners' ability to test objects and compare results with their predictions.
- Observe learners' ability to discuss findings in groups.
- Observe learners' ability to present findings to the class or in small groups.

Tips/Safety Precautions

- Use shallow water and supervise continuously. Wipe spills immediately and ensure objects are clean and safe.

Skills to be Developed

Observation, listening, communication, prediction, reasoning, investigation, comparison, critical thinking and creativity.

Key Learning Point

Some objects sink in water while others float; predictions can be tested through observation.

EXPECTED STANDARD: Simple shapes created successfully.

Sub-Topic 2: Light and Shadows

Learners investigate how shadows form when light from the sun, a torch or another light source is blocked by an object. They observe how shadows change in size, position, length and width and use simple language to describe their findings.

Specific Competence

- Demonstrate how shadows are formed.

KEY TERMS

- **Light:** Energy that enables us to see.
- **Light Source:** Something that produces light, such as the sun, a lamp or a torch.
- **Shadow:** A dark shape formed when an object blocks light.
- **Block:** To stop light from passing through.
- **Length:** How long or short something is.
- **Width:** How wide or narrow something is.

Key Concepts

- Light sources
- Blocking light
- Shadow formation
- Shadow size and position
- Length and width

LEARNING ACTIVITY 1: Exploring the Formation of Shadows

Learners use sunlight or a safe artificial light source and familiar objects to observe how shadows form when light is blocked.

ACTIVITY 1.1: Light and Shadows

Learners will explore how light helps us see and how shadows are formed when objects block light. Using simple materials like a torch, the sun, and everyday objects, learners will observe how shadows appear, move, and change size. Through play and investigation, they will begin to understand that light travels in straight lines and that shadows are created when light is blocked.

HOOK

"Where did this shadow come from?"

Suggested Teaching and Learning Materials

- **Natural Materials:** sunlight, sticks, learners' hands
- **Artificial Materials:** torch or lamp, cup, toy car, cardboard cut-outs, wall or screen

Learning Environment Set-up

- Artificial Environment: classroom with a torch/lamp
- Natural Environment: shaded or sunny outdoor area

Teacher's Role

- Gather learners in a well-lit space or a room where a strong light source can be used (like a torch, lamp, or sunlight).
- Show learners a variety of objects: a cup, a toy car, a stick, a hand, and a cardboard cut-out.
- Demonstrate by placing an object between the light source and a wall or a screen and point out the shadow that forms.
- “What do you see on the wall?”
- “Why do you think this shape appeared?”
- “What happens if I move the object closer to or farther from the light?”
- Divide learners into small groups or pairs.
- Provide each group with a light source and a set of objects.
- Guide learners to experiment:
- Hold an object close to the light and observe the shadow.
- Move it farther from the light and note the change.
- Try different shapes and sizes of objects and compare shadows.
- “Which shadow is bigger?
- Why do you think that happened?”
- “Can you make your shadow match this shape?”

Learners' Activity

- Learners individually or in groups create a “shadow display”:
- Choose one object and make different shadows on the wall or paper.
- Draw around the shadow with chalk or pencil to record the shape.
- Experiment with changing the distance between the object and the light to see how the shadow changes size.

Assessment Guide

- Observe learners' ability to make different shadows on the wall or paper.
- Observe learners' ability to draw around the shadow with chalk or pencil.
- Ask learners to explain in simple language that a shadow forms when light is blocked.

Tips/Safety Precautions

- Never ask learners to look directly at the sun. Use torches safely and avoid shining light into anyone's eyes.

Skills to be Developed

Observation, investigation, critical thinking, reasoning, communication, explanation and creativity.

Key Learning Point

A shadow forms when an object blocks light.

LEARNING ACTIVITY 2: Observing Shadows Outside on a Sunny Day

Learners observe outdoor shadows, trace them and discuss how an object must block sunlight for a shadow to form.

ACTIVITY 2.1: Shadows in the Sun - Exploring How Light Is Blocked

Learners will explore and observe shadows outdoors on a sunny day to understand how shadows are formed when objects block light. Through hands-on observation, tracing, and discussion, learners will notice that every object can create a shadow, and that the shape and size of shadows can change depending on the position of the sun and the object.

This activity develops important skills such as observation, critical thinking, reasoning, and communication. It also promotes values such as curiosity, patience, respect for nature, and cooperation as learners work together to explore and explain their findings. By connecting what they see with simple scientific ideas, learners beginto appreciate the relationship between light, objects, and the natural environment.

HOOK

"Can you make your shadow bigger or smaller?"

Suggested Teaching and Learning Materials

- **Natural Materials:** sunlight, sticks
- **Artificial Materials:** ball, toy, chalk, cardboard cut-outs

Learning Environment Set-up

- Natural Environment: school surroundings on a sunny day

Teacher's Role

- Take learners outside to a sunny area.
- Show them different objects (stick, ball, toy) and demonstrate how placing them on the ground creates shadows.
- "What do you see on the ground?"
- "Why do you think that shape appeared?"
- "Does the shadow change when we move the object?"
- Explain clearly that shadows are formed when an object blocks light.
- Ask learners to describe how the shadow changes with movement of the object or sun.
- Put learners in pairs or small groups.
- Each group chooses an object and observes its shadow in different positions relative to the sun.
- Compare the size and shape of the shadow when the object is moved.
- Trace the shadow on the ground using chalk or sticks.

Learners' Activity

- Respond to oral questions.
- Observe how shadows are formed when an object blocks light.
- Describe how the shadow changes when the object is moved closer or farther from the light.
- Compare the size and shape of the shadow when the object is moved.
- Trace the shadow on the ground using chalk or sticks.

Assessment Guide

- Observe learners as they respond to oral questions.
- Observe learners describe how the shadow changes when the object is moved closer or farther from the light.
- Observe learners compare the size and shape of the shadow when the object is moved.
- Observe learners trace the shadow on the ground using chalk or sticks.

Tips/Safety Precautions

- Never ask learners to look directly at the sun. Keep the outdoor area clear and supervise tracing activities.

Skills to be Developed

Communication, observation, analysis and comparison.

Key Learning Point

Outdoor shadows form when objects block sunlight, and their size or position can change.

LEARNING ACTIVITY 3: Comparing Shadows by Length and Width

Learners form and compare shadows from different objects, using the words long, short, wide and narrow and simple measuring tools where appropriate.

ACTIVITY 3.1: Shadows in Shape - Comparing Lengths and Widths

In this activity, learners will explore shadows formed by different objects and compare them according to their lengths and widths. By observing and discussing these shadows, learners will develop important skills such as careful observation, reasoning, and communication.

The activity encourages learners to be curious, patient, and cooperative as they investigate how the size and position of objects affect their shadows. Through this hands-on exploration, learners also learn to appreciate the natural world and understand basic scientific ideas about light and shadows.

HOOK

"Let's compare these shadow shapes. Which is longer or wider?"

Suggested Teaching and Learning Materials

- **Natural Materials:** sunlight, sticks
- **Artificial Materials:** toy car, cup, book, chalk, string or ruler

Learning Environment Set-up

- Artificial Environment: classroom with a strong torch, if needed
- Natural Environment: school surroundings on a sunny day

Teacher's Role

- Take learners to a sunny area or use a strong torch indoors.
- Show different objects (stick, toy car, cup, book) and place them in the light to form shadows on the ground or a wall.
- Demonstrate how to compare shadows: Show learners how to identify which shadows are long, short, wide, or narrow.
- "Which shadow is longer?"
- "Which shadow is wider?"
- "What happens to the shadow when we move the object closer or farther from the light?"
- Divide learners into pairs or small groups.
- Provide each group with 3-5 different objects.
- Ask learners to form shadows by blocking light using the provided objects.
- Ask learners to compare the lengths and widths of shadows using hands, chalk, sticks, or rulers.

Learners' Activity

- Observe the demonstration by the teacher as the teacher forms shadows by blocking light using different objects (stick, toy car, cup, book).
- Respond to oral questions.
- Form shadows by blocking light using the provided objects.
- Compare the lengths and widths of shadows using hands, chalk, sticks, or rulers.
- Individually, learners choose one object and create shadows in different positions.
- Compare and describe the shadow's length and width.
- Draw shadows of different lengths and widths.

Assessment Guide

- Observe learners as they respond to oral questions.
- Observe learners form shadows by blocking light using different objects.
- Observe learners' ability to identify differences in shadow lengths and widths.
- Listen to learners use the words long, short, wide and narrow appropriately.

Tips/Safety Precautions

- Never ask learners to look directly at the sun. Use safe objects and ensure measuring tools are appropriate for young learners.

Assessment Checklist

• Name of Learner	**Are learners able to identify shadows made by different objects?**	**Are learners able to recognise the shapes of shadows?**	**Are learners able to compare the lengths of different shadows using words such as longer and shorter?**	**Are learners able to compare the widths of different shadows using words such as wider and narrower?**	**Are learners able to match an object with its shadow and describe its size with little help?**
Anna					
Ben					
Chola					

Note: You can mark each box using **Yes / No**, **Able / Not Able**, or ✓ / ✗ depending on the learner's performance. Give additional practical support to learners who need help identifying, matching and comparing shadows by shape, length and width.

Skills to be Developed

Observation, critical thinking, creativity, teamwork, reasoning and communication.

Key Learning Point

Shadows can be compared using words such as long, short, wide and narrow.

EXPECTED STANDARD: Formation of shadows demonstrated correctly.

TOPIC 5: Exploring Mixtures

This topic helps learners explore how different materials can be put together to form simple mixtures. Learners use familiar, locally available materials such as rice, beans, sand, water, colours and small objects to observe what remains separate and what changes when materials are combined.

The sub-topic also integrates early addition and subtraction using concrete objects. Through mixing, combining and taking away, learners develop observation, counting, reasoning, communication and problem-solving skills.

Key Competences

- Communication
- Critical Thinking
- Collaboration
- Problem-Solving

Sub-Topic 1: Adding and Subtracting Things

Learners explore the ideas of mixing, adding and subtracting through practical activities. They observe mixtures, mix colours, combine small groups to make a larger total and take objects away to find how many are left.

Specific Competences

- Make simple mixtures.
- Add and subtract small groups using concrete objects.

KEY TERMS

- **Mixture:** Two or more materials put together.
- **Component:** One of the materials that makes up a mixture.
- **Separate:** To take materials or objects apart.
- **Adding:** Putting objects or groups together to make a larger total.
- **Subtraction:** Taking objects away from a group to find how many remain.
- **Combination:** Joining things together to form one group.
- **Concrete Objects:** Real objects that learners can see, touch and move.

Key Concepts

- Mixtures
- Separation
- Adding
- Subtracting
- Combining concrete objects

LEARNING ACTIVITY 1: Discussing How Items in a Mixture Remain Separate but Together

Learners combine familiar materials and observe that the different components can remain visible and may be separated again.

ACTIVITY 1.1: Together but Separate - Exploring Mixtures

In this activity, learners will learn what happens when different things are mixed together. The activity will help learners understand different mixtures whose components can be separated and those that

have components that cannot be separated. Exploring mixtures will build a strong foundation in learners in basic chemistry and science in general.

HOOK

"Let's mix these items. What happens?"

Suggested Teaching and Learning Materials

- **Natural Materials:** rice, beans, sand, small pebbles
- **Artificial Materials:** buttons, beads, clear bowls or trays, small scoops

Learning Environment Set-up

- Artificial Environment: classroom

Teacher's Role

- Gather learners in a circle and show a mixture of familiar items, e.g., rice and beans, sand and small pebbles, or pasta and corn.
- Pour the mixture into a clear bowl or tray so learners can see all items clearly.
- "What do you notice about these items?"
- "Can you see the rice and beans separately?"
- "Do they stick together or stay apart?"
- Explain that a mixture is when two or more items are together but each item keeps its own properties.
- Divide learners into small groups.
- Provide each group with simple mixtures such as:
- Rice and beans.
- Sand and small pebbles.
- Coloured beads and buttons.
- Ask learners to separate the mixture and identify its components.

Learners' Activity

- Identify and name the components of the mixture.
- Use fingers or small scoops to separate and identify the items.
- Individually or in pairs create their own simple mixture using items from a provided set (e.g., buttons, beans, beads).

Assessment Guide

- Observe learners' ability to identify and describe the items in the mixture.
- Observe learners' ability to separate the items in the mixture.
- Ask learners to explain that the items are together in one mixture but can still be identified.

Tips/Safety Precautions

- Use clean, non-food-contaminated materials. Supervise small items and remind learners not to taste or swallow materials.

Skills to be Developed

Observation, critical thinking, questioning, collaboration, reasoning, communication and creativity.

Key Learning Point

A mixture contains two or more materials together; in some mixtures the different components can still be seen and separated.

LEARNING ACTIVITY 2: Making Simple Mixtures Using Watercolours

Learners mix safe colours during a painting activity and observe how two colours can combine to make a new colour.

ACTIVITY 2.1: Mixing Colours in Painting

In this activity learners will have fun mixing colours to see how new colours are made. They will explore and discover what happens when they combine colours while painting. This activity will help learners develop creativity and understand how colours can be mixed to form new ones.

HOOK

"Let's discover new colours. What happens when we mix two colours?"

Suggested Teaching and Learning Materials

- **Natural Materials:** water, safe natural dyes from flowers or leaves, where available
- **Artificial Materials:** non-toxic poster paints, brushes or sponges, mixing palettes or plates, paper or cardboard, aprons or old clothes

Learning Environment Set-up

- Artificial Environment: classroom or art area
- Natural Environment: school surroundings, if natural dyes are collected

Teacher's Role

- Provide watercolours, clean water, brushes, containers, and paper.
- Demonstrate how to mix two colours gently and use the new mixture for painting.
- Guide learners to observe the change in colour.
- Encourage them to talk about what happens when the colours are mixed.
- Ensure that learners use the materials safely and neatly.

Learners' Activity

- Use watercolours to mix simple colour combinations during a painting activity.
- Paint on paper using the mixed colours.
- Describe the colours they used and what happened when they mixed them.

Assessment Guide

- Observe whether learners can combine colours to make a simple mixture and use it in painting.
- Check whether learners can describe the mixing activity in simple language.
- Observe whether learners can identify the new colour produced from a simple colour combination.

Tips/Safety Precautions

- Use non-toxic paints and clean water. Protect clothing, wipe spills promptly and ensure learners wash their hands after the activity.

Skills to be Developed

Creativity, observation, fine-motor coordination, communication, experimentation and early scientific exploration.

Key Learning Point

Mixing two colours can produce a new colour, creating a simple mixture.

LEARNING ACTIVITY 3: Adding Objects to Make a Larger Group

Learners use concrete objects, story mats and movement to experience addition as adding more or joining groups. They describe what happens using the words first, then and now.

ACTIVITY 3.1: The 'Add More' Cup - Combining Groups

In this activity, learners will explore what happens when more objects are added to an existing group. The activity will help learners understand that adding more objects increases the total number of objects. Through counting and combining small groups, learners will develop early addition concepts, number sense and mathematical language using the words first, then and now.

HOOK

"What happens when we add one more object?"

Suggested Teaching and Learning Materials

- **Natural Materials:** stones, seeds, sticks
- **Artificial Materials:** counting bears, bottle tops, blocks, small cups

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: safe outdoor learning area, where appropriate

Teacher's Role

- Gather learners together in a circle.
- Give each learner a small cup and five counting objects such as counting bears, blocks or bottle tops.
- Keep a larger "story cup" or container at the front for demonstration.
- Show learners two counting objects and say:
- "First, I have 2 bears."
- Ask learners to place two objects in their cups.
- Add one more object and say:
- "Then, I add 1 more bear."
- Ask learners to add one more object to their cups.
- Show all the objects together and ask:
- "Now, how many bears do I have?"
- "How many do we have altogether?"
- "Is the number we have now more than what we had first?"
- Guide learners to count the objects together: "1, 2, 3."
- Lead learners in saying:
- "First 2, then 1 more, now I have 3."
- Repeat the activity using different combinations of numbers without exceeding five objects.

Learners' Activity

- Count and place the required number of objects in their cups.
- Add more objects when instructed.
- Combine the two groups of objects.
- Count the objects to find the new total.
- Respond to questions about the number of objects before and after adding.
- Use the words first, then and now when describing what happened.
- Repeat the activity individually, in pairs or as a whole group using different numbers.

Assessment Guide

- Observe learners' ability to count objects accurately up to five.
- Observe learners' ability to combine two small groups of objects.
- Assess learners' understanding that adding more objects increases the total.
- Listen to learners' use of the words first, then and now when explaining the activity.

Tips/Safety Precautions

- Supervise small counters and keep the quantities within five so that learners focus on the idea of adding.

Skills to be Developed

Counting, observation, communication, critical thinking, collaboration, reasoning, problem-solving and number sense.

Key Learning Point

Adding more objects makes the total number of objects larger.

ACTIVITY 3.2: 'First, Then, Now' Story Mats - Telling Addition Stories

In this activity, learners will use pictures and concrete objects to represent simple addition stories. The activity will help learners understand how two small groups can be combined to make a new total. Learners will develop counting skills and mathematical language by describing what happens first, what is added then, and how many objects there are now.

HOOK

"Can you tell an addition story using first, then and now?"

Suggested Teaching and Learning Materials

- **Natural Materials:** seeds, small stones, small fruits or leaves
- **Artificial Materials:** 'First, Then, Now' story mats, toy fruits, counters, blocks or playdough balls

Learning Environment Set-up

- Artificial Environment: classroom learning corner or small-group area

Teacher's Role

- Divide learners into small groups.
- Provide each learner or pair with a simple mat divided into three sections labelled:
- First.
- Then.
- Now.

- Provide concrete objects such as toy fruits, blocks, counters or playdough balls.
- Tell learners a simple story, for example:
- “First, 2 apples are on the tree.”
- Ask learners to place two apples or counters in the First section.
- Continue the story:
- “Then, 1 more apple grows.”
- Ask learners to place one apple in the Then section.
- Guide learners to bring the objects together in the Now section.
- “What do we have first?”
- “How many are we adding then?”
- “How many do we have now?”
- “How many are there altogether?”
- “Is the number now more than the number we had first?”
- Guide learners to count the objects.
- Encourage learners to say the complete sentence:
- “First 2, then 1 more, now 3.”
- Repeat using different simple stories and quantities up to five.

Learners' Activity

- Listen to the simple number story.
- Place the correct number of objects in the First section.
- Place additional objects in the Then section.
- Combine all the objects in the Now section.
- Count the objects to determine the total.
- Describe what happened using the words first, then and now.
- Create simple addition stories using toys or other available objects.
- Work individually or in pairs to demonstrate their stories.

Assessment Guide

- Observe learners' ability to represent quantities using concrete objects.
- Observe learners' ability to combine two small groups correctly.
- Assess learners' ability to count the resulting total up to five.
- Listen to learners' ability to explain the process using first, then and now.
- Ask learners to demonstrate a simple “add more” story independently.

Tips/Safety Precautions

- Use simple, familiar stories and concrete objects. Give learners time to move the objects before introducing oral number sentences.

Skills to be Developed

Counting, storytelling, communication, sequencing, observation, critical thinking, creativity, collaboration, reasoning and problem-solving.

Key Learning Point

Addition stories show what we have first, what is added, and how many there are now.

ACTIVITY 3.3: The 'Add More' Action Game - Adding Through Movement

In this activity, learners will use physical movement to explore the idea of adding more. Learners will observe how the number of people in a group increases when another person joins. The activity will help learners connect movement, counting and number recognition while developing an understanding of simple addition.

HOOK

"What happens when one more friend joins the group?"

Suggested Teaching and Learning Materials

- **Natural Materials:** learners, open ground
- **Artificial Materials:** hoops, number cards (1-5), masking tape or chalk

Learning Environment Set-up

- Artificial Environment: classroom with adequate space
- Natural Environment: safe outdoor play area

Teacher's Role

- Prepare hoops or marked spaces on the floor or ground.
- Gather learners where they can clearly see the activity.
- Place two learners inside a hoop or marked space.
- Say:
- "First, 2 friends are jumping."
- Ask the two learners to jump inside the hoop.
- Invite one more learner to join them and say:
- "Then, 1 more friend joins."
- Ask the class:
- "Now, how many friends are jumping?"
- "How many friends do we have altogether?"
- "Is the number now more than the number we had first?"
- "Why is it more?"
- Guide learners to count the learners together.
- Hold up the corresponding number card.
- Lead learners in saying:
- "First 2, then 1 more, now 3."
- Repeat the activity using different groups of learners and numbers up to five.
- Encourage all learners to participate in the movement activity.

Learners' Activity

- Move into the hoops or marked spaces as directed.
- Count the number of learners in the group.
- Observe what happens when another learner joins the group.
- Identify and name the new total.
- Match the total number of learners with the correct number card.
- Say the number sentence orally using first, then and now.
- Participate in jumping, running, hopping or other safe movements during the activity.

Assessment Guide

- Observe learners' ability to count the number of learners in a group.
- Observe whether learners recognise that the group becomes larger when another learner joins.
- Assess learners' ability to identify the correct number card representing the total.
- Listen to learners' use of the words first, then and now.
- Ask individual learners to explain how the number changed after another learner joined.

Tips/Safety Precautions

- Clear the movement area before the activity. Use safe movements and ensure every learner has a turn without pushing or rushing.

Skills to be Developed

Counting, number recognition, gross motor coordination, observation, communication, collaboration, reasoning, critical thinking and problem-solving.

Key Learning Point

When another learner joins a group, the total number in the group increases.

Teacher's Language Prompting Guide for Addition

- What do we have first?
- How many are we adding then?
- Let us count now. How many are there altogether?
- Is the number now more than the number we had first?
- Why do we have more now?
- What happened when we added one more?

LEARNING ACTIVITY 4: Taking Objects Away to Find How Many Are Left

Learners use concrete objects and story mats to experience subtraction as taking away. They describe what happens using the words first, take away and left.

ACTIVITY 4.1: The 'Take Away' Cup - Finding How Many Are Left

In this activity, learners will explore what happens when some objects are removed from a group. The activity will help learners understand that taking away makes the number of objects smaller. Through practical counting and removing objects, learners will develop an early understanding of subtraction using the words first, take away and now.

HOOK

"What happens when we take one object away?"

Suggested Teaching and Learning Materials

- **Natural Materials:** stones, seeds, beans
- **Artificial Materials:** counting bears, blocks, small cups, bottle tops

Learning Environment Set-up

- Artificial Environment: classroom
- Natural Environment: safe outdoor learning area, where appropriate

Teacher's Role

- Gather learners in a circle.

- Give each learner a small cup and five counting objects.
- Show learners four counting objects and say:
- “First, I have 4 bears.”
- Ask learners to place four objects in their cups.
- Remove one object and say:
- “Then, I take away 1 bear.”
- Ask learners to remove one object from their cups.
- “How many did we have first?”
- “How many did we take away?”
- “How many are left now?”
- “Is the number now smaller than the number we had first?”
- Guide learners to count the remaining objects.
- Lead learners in saying:
- “First 4, take away 1, now 3 are left.”
- Repeat the activity using different numbers up to five.

Learners' Activity

- Count and place the required number of objects in their cups.
- Remove the stated number of objects.
- Count the objects that remain.
- Say how many objects are left.
- Use the words first, take away and now to describe what happened.
- Repeat the activity individually or in pairs using different quantities.

Assessment Guide

- Observe learners' ability to count objects accurately.
- Observe learners' ability to remove the correct number of objects.
- Assess learners' ability to identify how many objects are left.

Tips/Safety Precautions

- Supervise small counters. Emphasise that 'take away' means removing objects from the group, not hiding them.

Skills to be Developed

Counting, observation, communication, reasoning, critical thinking, problem-solving, collaboration and number sense.

Key Learning Point

Taking objects away makes the number left smaller.

ACTIVITY 4.2: 'First, Take Away, Left' Story Mat - Taking Away Objects

In this activity, learners will use simple stories and concrete objects to understand subtraction. The activity will help learners see that when some objects are taken away from a group, the number of objects remaining becomes smaller. Learners will develop counting, reasoning and mathematical language through practical experiences.

HOOK

"Can you tell a subtraction story using first, take away and left?"

Suggested Teaching and Learning Materials

- **Natural Materials:** stones, seeds, leaves, small fruits
- **Artificial Materials:** 'First, Take Away, Left' story mats, toy fruits, counters, blocks or playdough balls

Learning Environment Set-up

- Artificial Environment: classroom learning corner or small-group area

Teacher's Role

- Divide learners into small groups.
- Provide each learner or pair with a simple story mat divided into three sections:
- First.
- Take Away.
- Left.
- Provide learners with counters, blocks, toy fruits or other small objects.
- Tell a simple subtraction story, for example:
- "First, there are 5 oranges in a basket."
- Ask learners to place five objects in the First section.
- Continue the story:
- "Then, 2 oranges are taken away."
- Ask learners to remove two objects and place them in the Take Away section.
- Ask learners to count the objects that remain.
- "How many did we have first?"
- "How many did we take away?"
- "How many are left?"
- "Is the number left smaller than the number we had first?"
- "Why do we have fewer objects now?"
- Guide learners to say:
- "First 5, take away 2, now 3 are left."
- Repeat the activity using different numbers up to five.

Learners' Activity

- Listen to the subtraction story.
- Count and place the correct number of objects in the First section.
- Remove the stated number of objects.
- Count the objects that remain.
- Say how many objects are left.
- Use the words first, take away and left when explaining what happened.
- Create their own simple subtraction stories using available objects.
- Work individually or in pairs to demonstrate taking away.

Assessment Guide

- Observe learners' ability to represent quantities using concrete objects.
- Observe learners' ability to remove the correct number of objects.
- Assess learners' ability to count the objects that remain.
- Listen to learners' use of subtraction language such as take away, left, fewer and less.
- Ask learners to explain what happens to a group when some objects are removed.

Tips/Safety Precautions

- Use simple stories and concrete objects. Allow learners to physically move the objects before describing how many are left.

Assessment checklist

• Name of Learner	**Are learners able to count objects correctly up to 5?**	**Are learners able to combine two small groups of objects and find how many altogether?**	**Are learners able to add numbers up to 5 using concrete objects such as bottle tops, sticks or counters?**	**Are learners able to take away objects from a group and tell how many remain?**	**Are learners able to solve simple addition and subtraction problems up to 5 with little help?**
Anna					
Ben					
Chola					
_____					

Note: Mark each box using **Yes / No**, **Able / Not Able**, or ✓ / ✗. Learners who experience difficulties should be given more opportunities to use familiar concrete objects when practising addition and subtraction.

Skills to be Developed

Counting, observation, communication, reasoning, critical thinking, problem-solving, creativity and collaboration.

Key Learning Point

Subtraction stories show what we have first, what is taken away, and how many are left.

Teacher's Language Prompting Guide for Subtraction

- How many do we have first?
- How many are we taking away?
- How many are left now?
- Is the number left smaller than the number we had first?
- Why do we have fewer objects now?
- What happened when we took some away?

EXPECTED STANDARD: Simple mixtures made accordingly.

Teacher Reflection

After each activity, record brief observations on learners who demonstrated the intended competence, learners who require additional support, adaptations that worked well and any materials or safety issues to address in the next lesson.

References

Ministry of Education. (2020). *National Numeracy Framework.* Lusaka: Zambia Education Publishing House.

Ministry of Education. (2023). *Zambia Education Curriculum Framework.* Lusaka: Zambia Education Publishing House.

Ministry of Education. (2024). *Early Childhood Education Syllabus.* Lusaka: Zambia Education Publishing House.