



GRADE

1

**TEACHER'S
GUIDE**

Platinum

Mathematics

Platinum Mathematics Grade 1 Teacher's Guide

Maskew Miller Learning
10 Freedom Way, Milnerton, Cape Town, 7441

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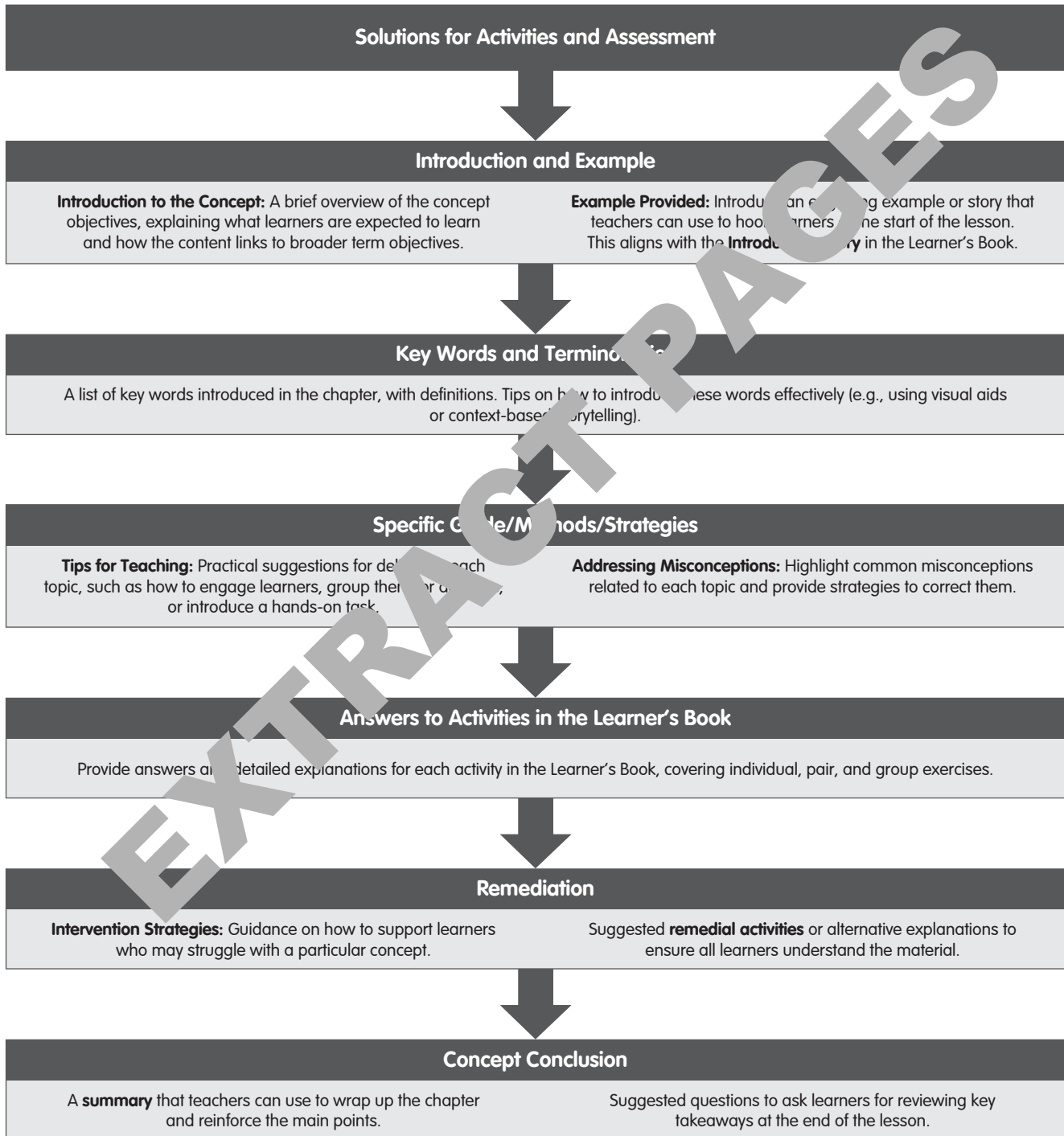
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Welcome

The Teacher's Guide (TG) is aligned with the Learner's Book, linking each topic to term objectives. It provides an introduction, teaching strategies, answers to activities, and more, giving teachers the tools to guide learners effectively through each chapter while connecting to Learner's Book content and activities.

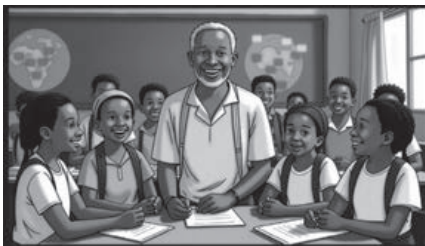


Message by Publisher and Authors

Dear Teacher

As you step into your classroom each day, you're not simply entering a space filled with desks and textbooks. You are entering a place where futures are shaped, and possibilities are born. You hold the incredible power to inspire, guide, and nurture the future leaders, innovators, and changemakers. By sharing your passion, you are doing far more than just teaching; you are planting the seeds of kindness, courage, respect, and Ubuntu in every young heart.

We understand it's not always easy. The challenges of teaching, especially in under-resourced classrooms, sometimes feel overwhelming. But with each challenge you face, you are making a real difference. You are showing your learners that their potential is limitless and that they are seen, valued, and capable of achieving great things. Putting a smile on every learner's face is invaluable!



That is why our teaching resources are here to support you. Designed with CAPS objectives in mind, they focus on inclusivity and on creating a learning environment where every child can see themselves represented. The images, stories, and lessons reflect the diversity of our local context, helping every learner feel a sense of belonging in your classroom.

And we have not forgotten about you. Your well-being is just as important as the success of your learners. We have included self-care tools to keep you energised and healthy because we know that when you feel good, your classroom thrives. Your happiness influences not just you're teaching but also the relationships you build with your learners, who look to you for inspiration.

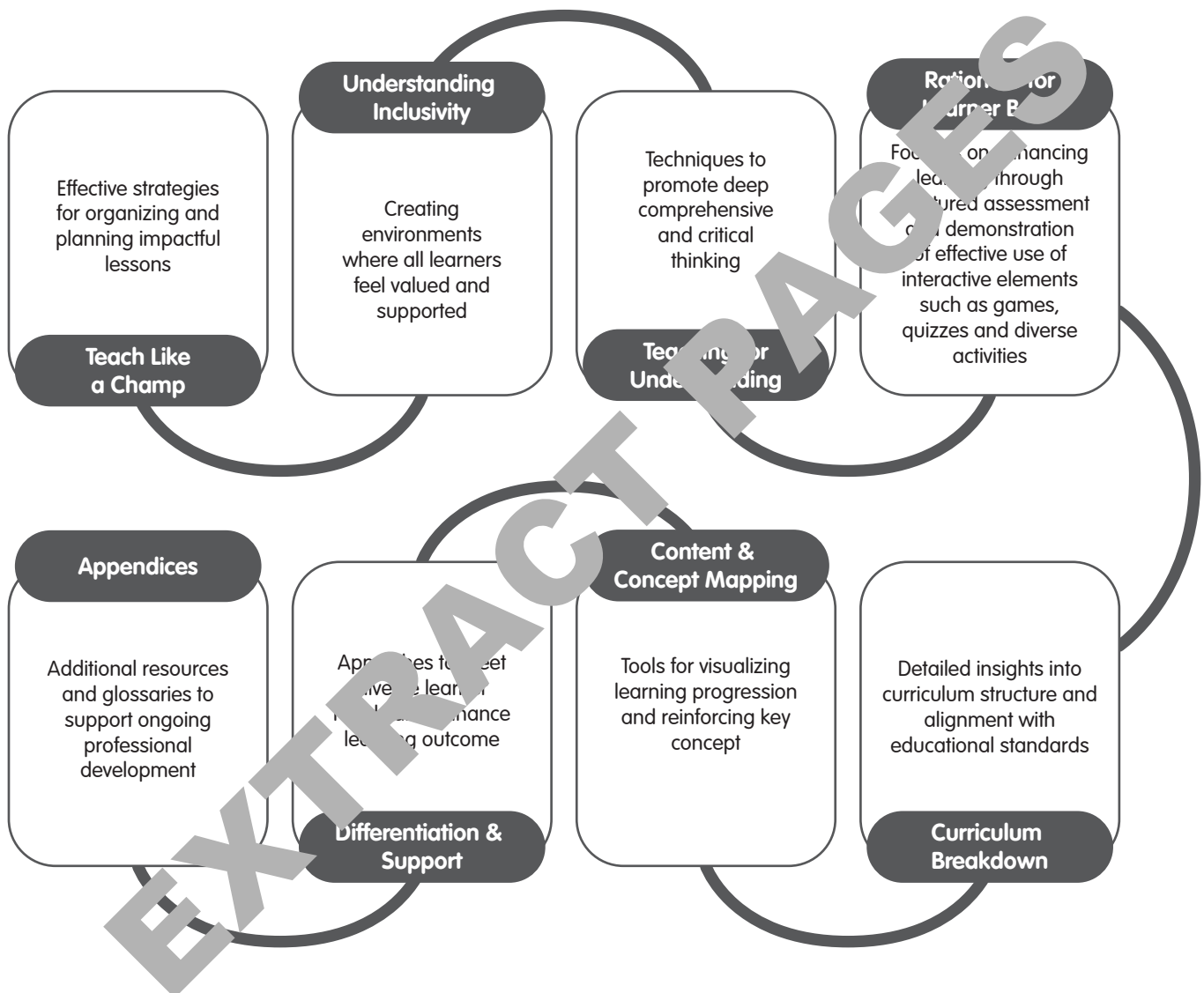
As South Africa continues to progress with the Basic Education Law Amendments Act (BELA), signed into law in 2024, the mission to create a more equitable and inclusive education system grows stronger. Your role in this mission is vital, and understanding both CAPS and BELA ensures your classroom is a place where learners are well-prepared for success.

You are a powerful force for positive change, and the impact you make in your classroom is greater than you may notice. As you teach, know that you are not just guiding your learners; you are shaping the future of our communities, our country, and the world.

Thank you for everything you do.

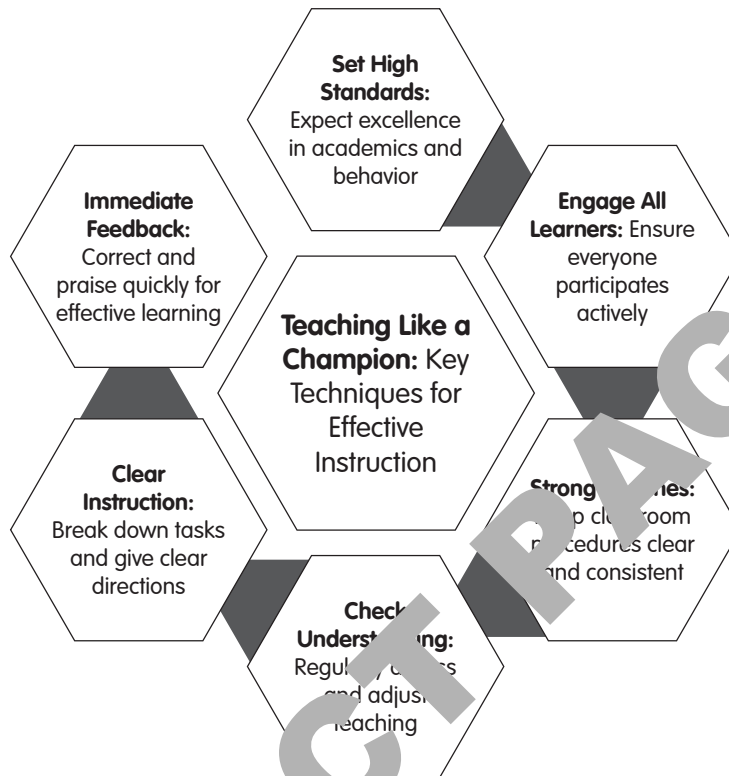
How to use this guide effectively!

Welcome to our Foundation Phase Teacher Guide, a valuable resource crafted to support educators utilizing our Grade 1, 2, and 3 educational series. Designed with your teaching journey in mind, this guide offers practical insights and resources aimed at enhancing your instructional strategies and enriching student learning experiences.



The Teacher Guide encourages ongoing reflection and growth, fostering a collaborative learning environment where teachers can continuously improve their pedagogical skills and positively impact learner achievement. As result, we invite you to navigate through this guide, leveraging its insights and resources to enhance your teaching effectiveness and create transformative learning experiences in your classroom. Together, let's empower our learners to succeed academically and beyond.

Teach like a Champ!



Diversity, Equity and Inclusion

In this section, we would like you to think about your own classroom. Picture the children sitting in front of you, each with their own story, experiences, and challenges. Now, remember a time when one of your learners struggled, perhaps with a difficult concept or something outside of school that impacted their learning. What did you do in that moment? How did you reach out, make them feel seen, and guide them through the difficulty?

Your classroom is filled with this kind of diversity, not just in background but in needs and abilities. Our country continues to face deep inequalities, whether economic, racial, or social, and these challenges often appear in your classroom. Yet it is here, in the heart of the classroom, that change happens. As a teacher, you play a vital role in ensuring each child can succeed, no matter where they come from or what obstacles they face.

CAPS places inclusivity and diversity at its core. It is not just about teaching the curriculum but about recognising the unique potential in each learner and helping them succeed. We understand this is not always easy. The challenges in many schools are real, and as a teacher, you are at the forefront of addressing them.



That is why our learning and teaching resources are designed to support you. They reflect the local context, showing learners a world that they recognise in the exercises, activities, and assessments they encounter. These materials consider the range of experiences and abilities in your classroom, giving you the tools to be inclusive and to support every learner, regardless of their background.

By using these resources, you are not just teaching the subject matter, you are meeting your learners where they are, recognising their struggles, and helping them overcome the barriers they face. In doing so, you are shaping a brighter future for every child, for your community, and for South Africa.

Types of diversity

In this series, we focus on 10 key types of diversity categories, each carefully selected to ensure broad and inclusive representation of different identities, perspectives, and experiences.

Table 1: Types of diversity

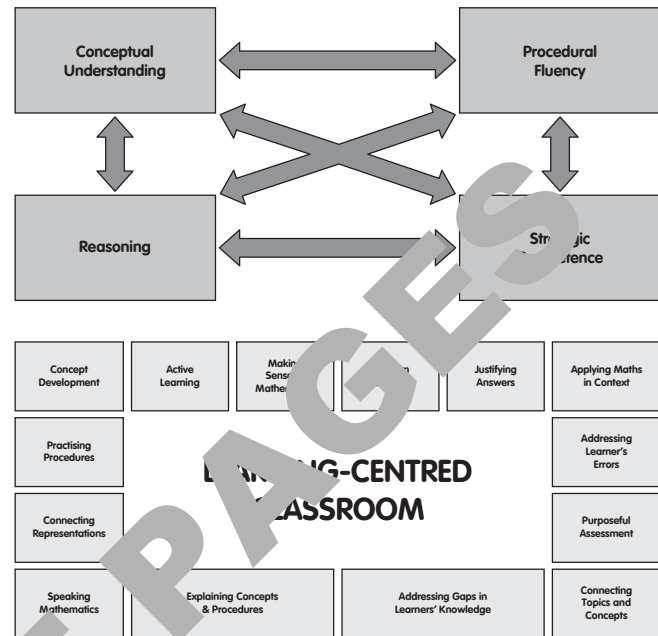
Diversity category	Definition	Coverage in the resources
1. Cultural and Ethnic Diversity	This refers to representing various cultural and ethnic backgrounds, ensuring learners are exposed to different perspectives and traditions.	We have included characters, authors, and historical figures from a diverse cultural backgrounds. Stories and examples incorporate a range of traditions, customs, and languages. This helps learners appreciate cultural richness and discourages stereotypes by offering nuanced views on historical and contemporary issues.
2. Gender Diversity	Gender diversity refers to the representation of all genders and includes discussion around gender roles, non-binary identities, and gender fluidity.	You will notice equal representation of all genders in text, illustrations, and examples. We've included non-binary and gender-fluid characters, along with activities that challenge traditional gender roles. For instance, both boys and girls are shown engaging in diverse career paths, from helping in the kitchen to science and arts, promoting gender equality.
3. Socio-Economic Diversity	This involves representing people from different socioeconomic backgrounds and discussing issues of economic inequality.	We feature characters from a variety of socioeconomic contexts, highlighting challenges like access to education, healthcare, and resources. This allows learners to engage with real-life examples and discussions that reflect diverse economic situations, making the content relatable to all.
4. Linguistic Diversity	Linguistic diversity means including multiple languages and respecting the various dialects spoken by different communities.	You will find content that features multiple languages and encourages learners to respect different dialects. We've also included examples that highlight the importance of translation and interpretation, especially in a global village, preparing learners to be more inclusive in their communication.
5. Disability and Accessibility	This focuses on the representation of people with disabilities and addressing barriers to accessibility.	Characters with disabilities have been included, ensuring their representation in stories and activities. We also discuss issues of accessibility, whether physical, technological, or societal, and use inclusive, person-first language. This creates a more accepting environment for all learners and encourages empathy and understanding.

Diversity category	Definition	Coverage in the book
6. Sexual Orientation and LGBTQ+ Inclusion	LGBTQ+ stands for Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, and others. The “+” represents inclusivity of other sexual orientations, gender identities, and expressions beyond those explicitly listed, such as non-binary, pansexual, asexual, and gender-fluid individuals. This term is used to encompass a broad spectrum of sexual and gender identities, promoting acceptance and inclusion for all.	LGBTQ+ family structures are represented throughout the books, offering a diverse perspective. We’ve included examples and scenarios that explore LGBTQ+ issues and rights, as well as discussions on anti-discrimination, helping learners understand and respect diversity in sexual orientation.
7. Religious and Spiritual Diversity	This involves representing a variety of religious beliefs and promoting respect for different spiritual practices	Our books contain content that introduces learners to various religions and spiritual practices. We’ve also encouraged interaction with dialogue to help foster respect and understanding across different belief systems. Secular perspectives are included as well, ensuring all belief systems are respected and represented fairly.
8. Age Diversity	Age diversity involves including people from different age groups and discussing issues related to aging.	In the books, you’ll find characters and examples ranging from young children to the elderly. We’ve highlighted the importance of intergenerational relationships, as well as discussed age-related topics like retirement and ageism. This helps learners understand the value of every age group in society.
9. Geographic Diversity	Geographic diversity represents people and issues from various regions and environments, both global and local.	The books include content from different regions around the world, addressing both global issues and local contexts that are relevant to learners. We’ve also balanced examples from urban and rural settings, showcasing the unique challenges and benefits of each environment.
10. Cognitive and Learning Diversity	This refers to addressing different learning styles, abilities, and cognitive differences, such as neurodiversity.	We have embraced cognitive and learning diversity by incorporating varied teaching methods that cater to different learning styles. Activities are designed to accommodate a wide range of learning needs, promoting an inclusive learning environment. We have also added quick pre-assessments for you to consider.

Teaching Mathematics for Understanding (TMU)

Understanding entails the ability to think critically and adapt effectively in relation to a topic or concept. It goes beyond simply gathering information, facts, or data, and it is not just the ability to mechanically follow procedural steps. In mathematics, understanding is demonstrated when learners can justify the truth of a mathematical claim or answer and explain the reasoning behind a mathematical rule (CCSSO, 2010). The diagram on the right illustrates the Framework model of mathematics teaching and learning, highlighting four key strands of mathematical proficiency, from Kilpatrick et al's 2003 strands for mathematics proficiency:

- **Conceptual understanding:** helping children understand what maths ideas mean and how they relate to each other.
- **Procedural fluency:** practicing maths steps so children can do them accurately, quickly, and in different ways.
- **Strategic competence:** guiding children to find, think about, and solve maths problems.
- **Reasoning:** encouraging children to think about and explain their math answers and the steps they took.



These strands interact dynamically within a **learning-centred classroom**, which emphasises active learning, concept development, problem solving, and making sense of mathematics.

The classroom also focuses on practicing procedures, connecting representations, and addressing gaps in learners' knowledge. Overall, the framework aims at teaching mathematics for understanding through a comprehensive and integrated approach.

Reference to Teaching Resources

Design of the Learners Book

The Learner's Book offers abundant **practice opportunities** through individual, peer, group, and class activities, supporting mastery in learning. Practice is essential for skill development, and the book incorporates **engaging games and enjoyable activities**, providing learners with additional avenues to reinforce their understanding. These activities not only promote continuous assessment but also create a **fun and creative learning experience**.

Stories	Stories are incorporated to enhance memory retention and understanding by connecting concepts to relatable contexts and encouraging imaginative engagement.
Independent Work	This develops self-discipline and critical thinking, empowering learners to take ownership of their learning and develop problem-solving skills.
Peer and Group Work	Collaborative activities foster communication, teamwork, and the ability to understand diverse perspectives, while promoting social skills.
Whole Class Activities	These activities promote a sense of community and collective learning, encouraging learners to share experiences and participate actively in discussions.
New Words	This feature introduces new vocabulary in a clear and accessible manner, helping learners understand and remember the meanings of words.
End of Term Quizzes	These quizzes integrate multiple subjects, requiring learners to apply their knowledge across various topics. This approach uses questions addressing different levels of complexity to help assess learners' overall understanding and retention.
Time to Explore	This learning feature provides learners with a wide range of stimulating and informative information, along with thought-provoking questions aimed at encouraging exploration and innovative problem solving.
Activities	Through practical projects, these activities stimulate creativity and innovation, allowing learners to apply theoretical knowledge in real-world scenarios and develop critical thinking.

Structure for Grade 1 Mathematics Learner book

Imagine guiding your young learners on a journey of discovery, beginning with familiar skills like counting and place value. Together, you lay a sturdy foundation—a safe starting point where they can build their confidence and sense of wonder.

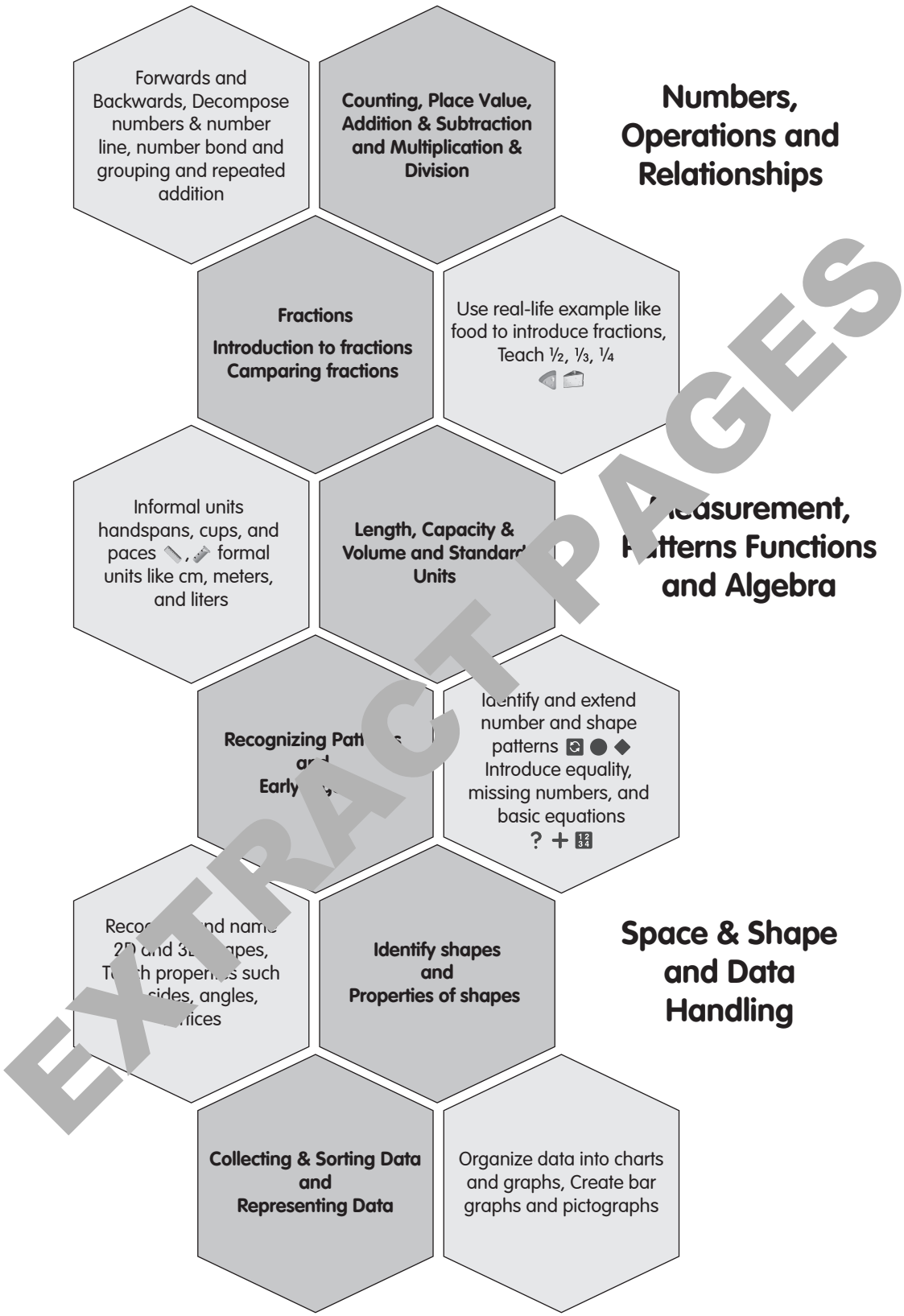
The content of this series has been designed in such a way that the curriculum is covered seamlessly, not as a series of tick-box exercises, but as a flowing story where each topic naturally leads to the next, creating a path that feels intuitive and connected.

As they grow, you lead them further along this journey. Numbers become trusted friends, and learners start unlocking mysteries of the world around them. Counting becomes more than just numbers—it's the beginning of understanding fractions, like slicing up a favourite treat and seeing each part as a piece of a whole.

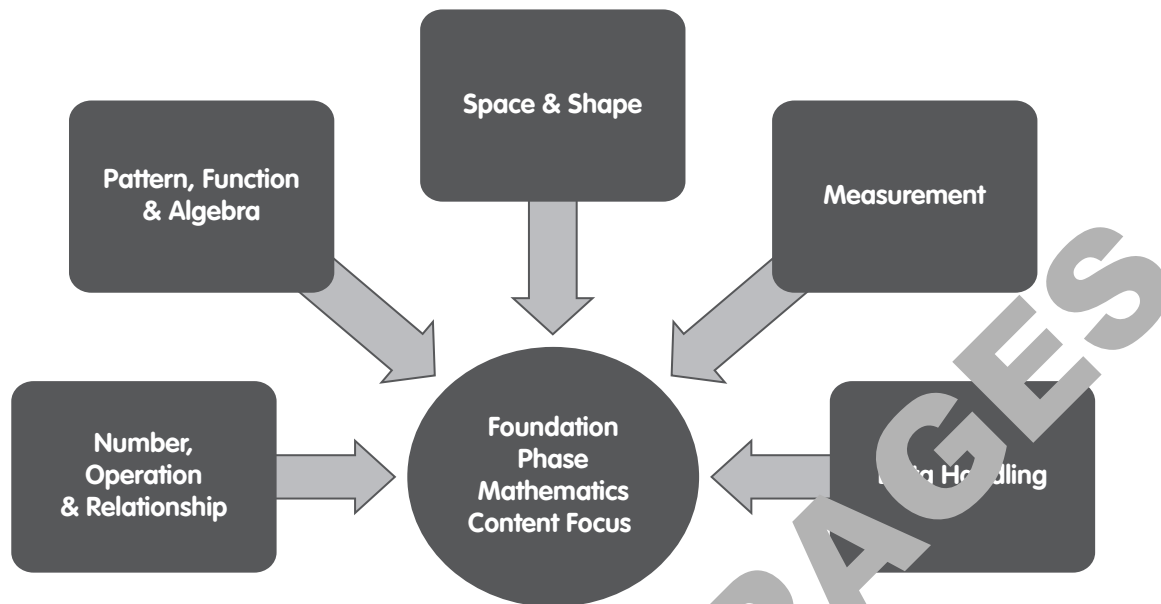
Next come patterns, woven into the lessons like a melody they can follow, forming the first steps into algebraic thinking—a puzzle that becomes clearer with each step. Then, measurement comes, involving hands-on exploration of size and quantity, helping learners see how things fit together in their world. Finally, they dive into data handling, where they learn to compare, sort, and interpret information, setting the stage for future skills in graphing and analysis.

The Annual Teaching Plan (ATP) brings this story to life, with each topic building into the next like chapters in a book, reinforcing previous learning and introducing new ideas with intention. By the end of each term, learners can draw from each part of their journey, weaving together the concepts they've encountered into a colourful picture of understanding.

When it's time for the end-of-term assessment, it's not merely a test—it's a way for learners to bring the full story of their learning together. Questions draw on various topics and present different levels of challenge, ensuring each learner feels supported, engaged, and fully prepared for the next exciting chapter.



Curriculum Breakdown (CAPS)



Learning Objective per Content Area

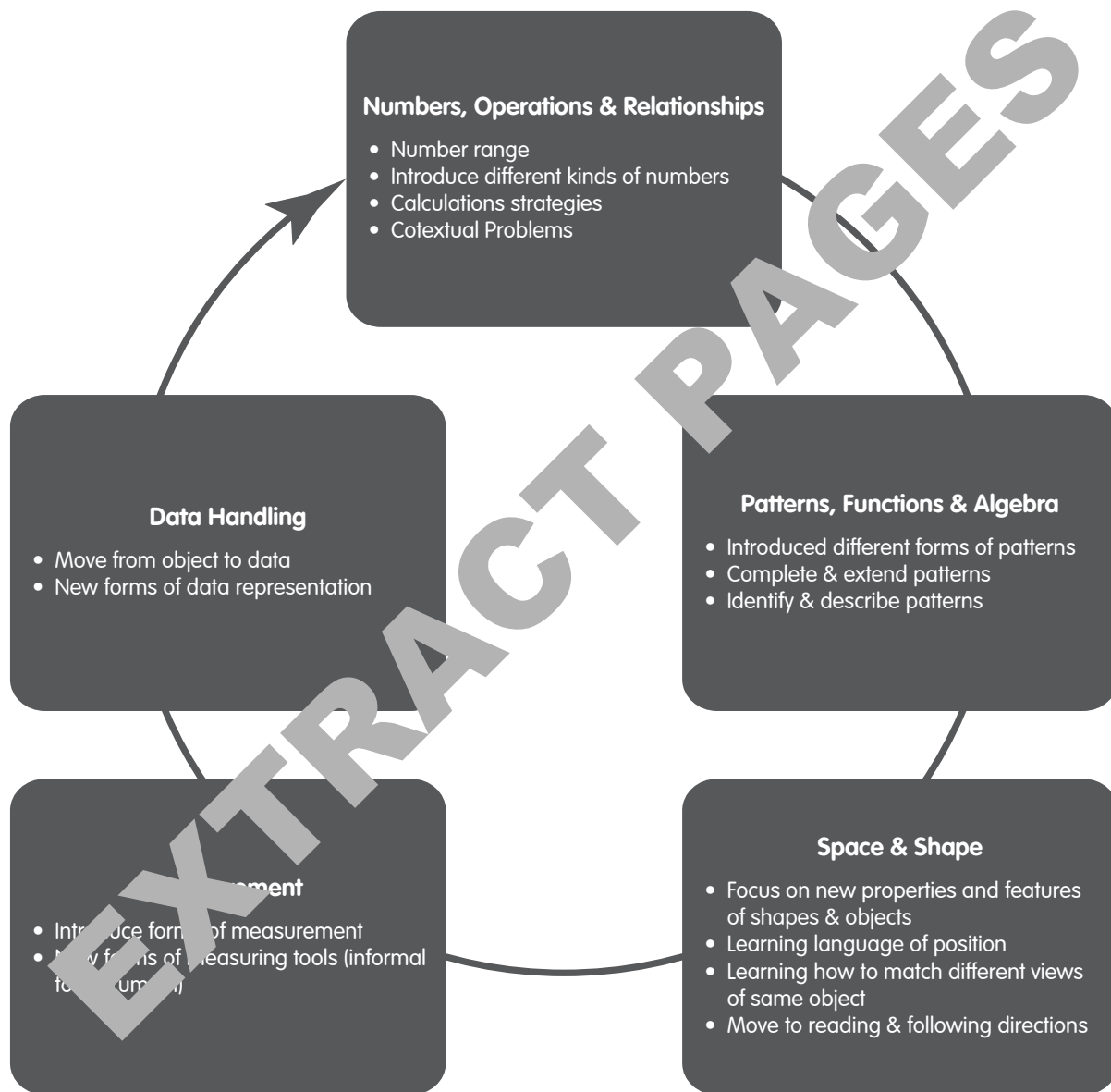
Number, Operation and Relationships	Patterns, Functions and Algebra
<p>In this phase, the learners' number concept is developed through working with physical objects to count collections of objects, partition and combine quantities, skip count in various ways, solve contextual (word) problems, build up and break down numbers.</p> <p>Counting enables learners to develop number concepts, mental mathematics, estimation, calculation skills and recognition of patterns.</p> <p>Number concept development helps learners to learn about properties of numbers and to develop strategies that can make calculations easier.</p> <p>Solving problems enables learners to communicate their own thinking orally and in writing through drawing and symbols.</p> <p>Learners build an understanding of basic operations of addition, subtraction, multiplication and division.</p> <p>Learners develop fraction concepts through solving problems involving the sharing of physical quantities and by using drawings. Problems should include solutions that result in a whole number of remainders or fractions. Sharing should involve not only finding parts of whole, but also finding parts of collections of objects. In this phase, learners are not expected to read or write fraction symbols.</p>	<p>In this phase, learners work with both number patterns (e.g. skip counting); and geometric patterns (e.g. pictures).</p> <p>Learners should use physical objects, drawings and symbolic forms to copy, extend, describe and create patterns.</p> <p>Copying the pattern helps learners to see the logic of how the pattern is made. Extending the pattern helps learners to check that they have properly understood the logic of the pattern.</p> <p>Describing the pattern helps learners to develop their language skills. Focusing on the logic of patterns lays the basis for developing algebraic thinking skills.</p> <p>Number patterns support number concept development and operational sense built in Numbers, Operations and Relationships.</p> <p>Geometric patterns include sequences of lines, shapes and objects but also patterns in the world. In geometric patterns learners apply their knowledge of space and shape.</p>

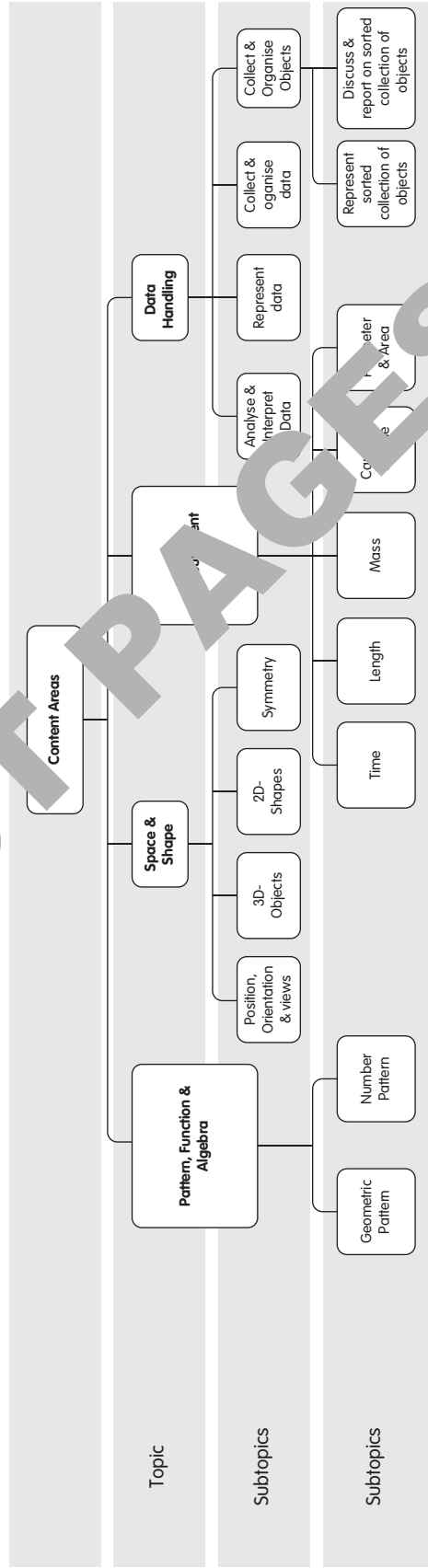
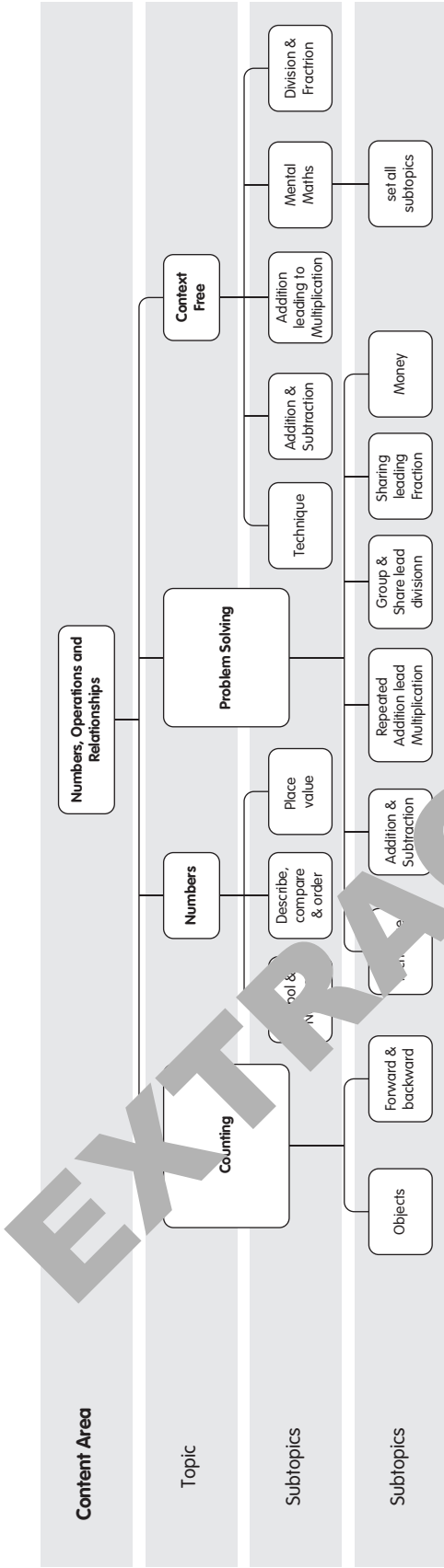
Space and Shape (Geometry)	Measurement
<p>In this phase learners focus on three-dimensional (3-D) objects, two dimensional (2-D) shapes, position and directions.</p> <p>Learners explore properties of 3-D objects and 2-D shapes by sorting, classifying, describing and naming them.</p> <p>Learners draw shapes and build with objects.</p> <p>Learners recognise and describe shapes and objects in their environment that resemble mathematical objects and shapes.</p> <p>Learners describe the position of objects, themselves and others using the appropriate vocabulary.</p> <p>Learners follow and give directions</p>	<p>In this phase the learners' concept of measurement is developed by working practically with different concrete objects and shapes, learning the properties of length, capacity, mass, area and time.</p> <p>Learners measure the properties of shapes and objects using informal units where appropriate, such as hands, paces, containers, etc.</p> <p>Learners compare different quantities by using comparative words such as taller/shorter, heavier/lighter etc.</p> <p>Learners are introduced to standard units such as grams, kilograms; millilitres, litres, centimetres, metres.</p> <p>Activities related to time should be structured with the awareness that learners' understanding of the passing of time should be developed before they read about time.</p>
Data Handling	
<p>In this phase, learners work with:</p> <p>Sorting, representing and describing the sorted collection are useful skills for learners to develop early on in schooling. The process also develops the skills learners will use when doing the data handling cycle.</p> <p>Learners can be given collections of objects and asked to sort them. For example, give groups of the same kinds of counters and ask learner to sort them into colour. Give collections of different kinds of counters such as bread tags, peach pips, matches, bottles tops and ask learners to sort them into groups.</p> <p>Learners then draw a picture of the groups that they have made. In this way learners record what they have done. They answer questions in groups. As learners have experienced the whole data cycle, they can focus on analysing representations that are given to them. It is recommended that in Term 4 learners analyse (answer questions) on at least 2 pictograms.</p>	

Recommended Number of Lessons per Content Area

Number of lessons						
Content area	Topic	Term 1	Term 2	Term 3	Term 4	Total
Numbers, Operations and Relationships	All topics of Numbers, Operations and Relationships	22	30	28	25	
Patterns, Functions and Algebra	Number patterns	3	3U	3		12
	Geometric patterns	1	1		1	4
Space and Shape (Geometry)	2-D shapes		3		3	6
	3-D shapes	3		2	1	6
	Position, orientation and views				1	3
	Symmetry			1	1	2
Measurement	Time	2				2
	Length	2		2		4
	Mass	2			2	4
	Capacity/Volume	1	2		1	4
Data Handling	Collecting, sorting, representing and analysing objects	2	1			3
	Whole data cycle			3		3
	Sections of data cycle				2	2
Lessons		40	40	40	40	160

Content and Concepts Mapping





Term 1

Term 1: The world of numbers!

LB page 2

Let us see what you know: a baseline assessment to evaluate Grade 1 learners' prior knowledge and readiness in essential foundational concepts.

Key concepts

- Count objects, sort them, and match them based on their attributes.
- Describe the collections after they have been sorted.
- Use more, less, big, and small vocabulary to discuss the objects.
- Identify and talk about the days of the week by stating what today is, what tomorrow will be, and what yesterday was.

Topic: Counting objects reliably	Topic: Counting objects reliably
1. 8	2. a. 7 b. 7
Topic: Counting forwards	Topic: Counting objects reliably
3. 1; 2; 3; 4; 5; 6; 7; 8; 9; 10	4. a. three or 3 b. one or 1
Topic: Number symbols and number names	
5. a. two b. four	
Topic: Time	
6. a. The answer is dependent on when the activity was done, i.e., the answer is the day before the activity was done. b. Thursday c. Sunday d. Monday	

Explore the number island

Topic: Counting

LB page 3

Learning objectives

Learners will develop and practice their number sequencing skills by:

- counting forwards and backwards within a specified range.
- identifying and distinguishing between forward and backward counting.
- completing number lines by recognising missing numbers.
- filling in missing numbers in a sequence, enhancing their understanding of numerical order.

Introduction	
<ul style="list-style-type: none">• Introduce the concept of counting forwards and backwards using a story like Zara's number adventure. In the story, Zara navigates through different number sequences, sometimes moving forward and sometimes backwards on her journey.• Encourage learners to participate by counting along with Zara as you read the story, paying attention to when she counts forwards (going higher in numbers) and when she counts backwards (going lower in numbers).	
TMU notes	
<ul style="list-style-type: none">• Conceptual Understanding Learners need to understand the relationship between numbers, recognising that counting forwards increases and counting backwards decreases quantity. Tools like number lines and counters can help internalize this concept. Example: Display a visual of a boy jumping forwards from 5 to 10 on a number line, symbolising counting forwards, and a girl jumping backwards from 10 to 1, symbolising counting backwards.• Procedural Fluency Learners should practice counting both forwards and backwards until it becomes automatic and accurate, such as counting from 1 to 20 and back. Example: Ask the learners to identify if the numbers in the sequence are moving forwards (getting larger) or backwards (getting smaller).• Strategic Competence Learners use counting strategies to solve problems, like counting forwards to determine the next number or backwards for subtraction or finding the previous number. Example: Emphasise the directionality and relationship between the numbers in both cases to help them grasp the concept of numerical order.• Adaptive Reasoning Learners apply logical thinking to explain how and why counting forwards and backwards works, such as recognising that counting backwards is useful in subtraction or reversing processes. Example: ask learners to explain their answers.	
Materials	New words
<ul style="list-style-type: none">• Counters (to help learners can use to count when introducing the topic)• Examples: buttons, stones, beads, sticks, bottle caps	<ul style="list-style-type: none">• Counting is saying numbers to find out how many things there are.• A number line is a straight line with numbers on it.• Forwards means to move toward something.• Backwards means to move away from something.

Teaching methods

- **Object counting:** show five objects and ask learners to count them out loud.
- **Hands-on counting:** distribute up to ten counters to each learner, asking them to count each one aloud.
- **Group counting:** ask them to organise their counters in groups from 1 to 10.
- **Class discussion:** display a poster with different objects (e.g. animals, fruits) and lead a discussion on how many of each item they see.
- **Visual demonstration:** use a large number line on the floor. Have one learner jump forwards from 1 to 10, and another jump backwards from 10 to 1.
- **Sequence identification:** ask learners how many steps they took forwards or backwards on the number line.
- **Pronunciation practice:** reinforce number pronunciation by having learners repeat numbers as they count forwards and backwards.
- **Ascending and descending practice:** Have learners practice ascending and descending on the number line.

Teaching tips

- **Engage learners:** make the lesson interactive by encouraging learners to participate in counting aloud and number line activities.
- **Pair work:** pair learners to practice counting together, allowing them to support each other in identifying forward and backwards sequences.
- **Address misconceptions:** frequently check learners' understanding by asking them to identify whether a sequence is forwards or backwards.

Examples of misconceptions

- **Skipping Numbers:**
Learners may skip numbers when counting forwards (e.g. "1, 2, 4" instead of "1, 2, 3").
- **Reversing Digits:**
When counting backwards, learners might incorrectly reverse digits (e.g. saying "21" after "20" instead of "19").
- **Reinforcement:** use additional visuals or tools like number lines and counters to reinforce the concepts of ascending and descending numbers.

Answers to textbook activities

Activity 1:

LB page 5

- 1; 2; 3; 4; 5; 6; 7
 - 3; 4; 5; 6; 7; 8; 9; 10
- 6; 5; 4; 3; 2
 - 9; 8; 7; 6
- forwards
 - backwards
 - forward
 - backwards
- There is no need for learners to illustrate the number lines.
 - 3; 4; 5; 6; 7; 8; 9; 10.
 - 0; 1; 2; 3; 4; 5; 6.
- 1; 2; 3; 4; 5; 6
 - 10; 9; 8; 7; 6; 5; 4

Activity 2:

LB page 6

- 8; 9; 10; 11; 12; 13; 14; 15; 16; 17
- 20; 19; 18; 17; 16; 15; 14; 13; 12; 11; 10
- 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19
 - 17; 16; 15; 14; 13; 12; 11; 10; 9; 8

Remediation

- **Assessment practice:** have learners count both forwards and backwards on a number line and write the correct sequence (e.g. 5 to 1 and 1 to 5).
- **Group/pair work:** pair learners and ask them to take turns counting aloud forwards and backwards, using number lines or cards to check each other's work.
- **Support for struggling learners:** use simpler sequences (e.g. 1 to 5, 5 to 1) with visual aids like number charts or counting manipulatives.
- **Differentiation**
- **Advanced learners:** introduce larger or mixed sequences, such as counting by twos or threes forwards (e.g. 2; 4; 6) and backwards (e.g. 10; 8; 6).
- **Independent practice:** provide worksheets with number lines for learners to fill in missing numbers counting forwards from 1 to 10 and backwards from 10 to 1.
- **Reinforcement**
- **Practice number pronunciation** by having learners count aloud, forwards and backwards, using different ranges (e.g. 1 to 7, 6 to 2) to build confidence.

Conclusion

- **Restatement of Learning Objectives:** Learners practiced counting forwards and backwards using number lines and sequences.
- **Summary of Activities:** Learners engaged in storytelling, number line practice and sequence identification.
- **Reflection on Learning:** Visual aids and hands-on practice helped learners understand counting sequences, keeping them engaged and improving their skills.
- **Next Steps:** Learners will continue to practice with varied sequences and more complex number lines.

Count to add and subtract

Topic: Counting

LB page 7

Learning objectives

Learners will develop their addition and subtraction skills by:

- practicing counting on by adding one more to a starting number.
- practicing counting back by subtracting one from a starting number.
- recording the resulting quantities after each step, reinforcing the concept of increasing and decreasing sequences.

Introduction	
<ul style="list-style-type: none"> • Introduce addition and subtraction through a relatable scenario, such as adding and taking away apples or stars. • Explain that we add when we combine objects and subtract when we remove them. • Hand out visual aids, such as counters or small cutouts, to help learners follow along. • Example: <ul style="list-style-type: none"> ○ For addition: start with 4 apples, add one more each time, and show how the number increases. ○ For subtraction: start with 6 stars, subtract one each time, and show how the number decreases. ○ Use counters or drawings to visually demonstrate the concept of adding and subtracting one. 	
Materials	New words
<ul style="list-style-type: none"> • Counters or paper cutouts representing apples and stars (or other objects learners are familiar with). • Number lines for visualizing the increasing and decreasing sequences. 	<ul style="list-style-type: none"> • Addition/combine (+): putting together objects or joining objects. • Subtraction/minus (-): taking away objects from joined ones. • Equal: same.
Teaching method	
<ul style="list-style-type: none"> • Introduce adding and subtracting: explain how adding increases the total number and subtracting decreases it, using apples and stars as examples. • Addition activity: demonstrate by starting with 4 apples and adding one more each time, writing down the increasing total after each step. • Learner practice: have learners use their own counters or cutouts to perform similar addition and subtraction problems. 	
Teaching tips	
<ul style="list-style-type: none"> • Engage learners: have learners manipulate their counters to physically add or subtract as they follow along. • Visual aid: use number lines or drawings to support understanding. • Check understanding: ask learners to explain their process and verify their results by showing their work. • Reinforcement: use variations of the activity to ensure learners can apply the concept to different scenarios. 	
Answers to textbook activities	
Activity 3: LB page 8–9 1. 4; 5; 6; 7; 8 2. 6; 5; 4; 3; 2 3. 3; 4; 5; 6; 7; 8; 9; 10 4. 7; 6; 5; 4; 3; 2; 1	Activity 4: LB Page 9 1. 1; 3; 5; 7. 2. 8 is greater than 4

Remediations

- **Assessment practice:** have learners draw or cut out groups of objects and label them with the correct number (e.g. create 5 stars and write '5' next to it).
- **Group/pair work:** in pairs, one learner picks a number card, and the other finds the matching group of objects. Then, they switch roles.
- **Support for learners needing help:** use fewer numbers and objects, along with visual aids like charts or counters, to assist in matching and counting.
- **Independent practice:** provide worksheets where learners match numbers (e.g. 1; 4; 9) with groups of objects, counting and writing the correct number symbol next to each group.
- **Differentiation**
- **For advanced learners:** challenge learners to match larger numbers or create their own sets of objects to match number symbols, going beyond 10.

Conclusion

- **Restate learning objectives:** this lesson helped learners match number symbols with groups of objects, building foundational number recognition skills.
- **Summary of activities:** learners engaged in a story, practiced matching numbers with objects, and participated in interactive exercises.
- **Reflection:** the mix of storytelling, hands-on activities, and visual aids supported learners' understanding of numbers and quantities.
- **Next steps:** learners will move on to more complex tasks involving number sequences and basic arithmetic concepts.

EXTRACT PAGES

Doing maths in the head!

Topic: Mental maths

LB page 10

Learning objectives

Learners will develop number comparison and sequencing skills by:

- ordering numbers from smallest to greatest.
- identifying which numbers are more or less than given numbers.
- recognising numbers that come before, after, or between given numbers.
- answering questions related to increasing or decreasing quantities and identifying relationships between numbers without counting objects.

Introduction

- Introduce the concept of comparing and ordering numbers using familiar terms like “more” and “less.”
- Engage learners with a story or visual scenario where they identify which group of objects has more or fewer items, leading to an understanding of terms such as “many,” “fewer,” “most,” and “least.”

TMU notes

- **Conceptual Understanding:** Learners must understand how numbers and operations work to solve problems in their heads.
- **Procedural Fluency:** They should be able to quickly and accurately do basic calculations like addition and subtraction mentally.
- **Strategic Competence:** Learners need to choose the best strategies, like breaking numbers down or rounding, to solve problems easily.
- **Adaptive Reasoning:** They should be able to explain and justify their mental math solutions logically.

Organise Teaching Methods

Teacher modeling:

- Show learners examples by holding up different numbers of counters (0; 1; 2; etc.).
- Ask questions like, “how many counters do I have?” to practice identifying quantities.
- Involve learners by having two students compare their counters. Ask the class which has more or fewer.
- Encourage learners to use the terms “many,” “fewer,” “most,” and “least” during comparisons.

Class activity:

- Have learners work in groups or pairs, picking different numbers of counters and comparing who has more or less.
- Extend the activity by rolling a dice and discussing whether the number rolled is more, fewer, or the same as another number.

Explain concepts:

- Reinforce comparisons by using visual examples, such as “3 stars are more than 2 stars,” and ensure learners understand how to identify greater or smaller numbers.

Practical:

- Allow learners to practice comparing numbers and objects in various scenarios, focusing on using the correct terms to describe the comparisons.

Teaching Tips

- Encourage learners to compare and discuss their findings with partners, making the lesson interactive.
- Regularly check learners’ understanding by having them explain why one number is greater or smaller.
- Provide a variety of examples to ensure learners can apply the concepts of “more” and “less” in different situations.

Answers to textbook activities	
Activity: 1. 2; 3; 5 2. 5 is more than 4 . 3. One more than 2 is 3 . 4. three (3). 5. number that comes after 3 is 4 . 6. number between 1 and 3 is 2 . 7. a. 3 is big and 1 is small . b. 5 is big and 2 is small . c. 4 is big and 3 is small .	LB page 14 8. a. 3 is less than 5 and 5 is equal to 5 . b. 2 is less than 5 and 4 is less than 5 . 9. a. 3 . b. 4 . c. 4 . d. 2 comes before 3 . 2 comes after 1 . 2 comes in between 1 and 3 .
Remediation	
<ul style="list-style-type: none"> • Assessment practice: have learners draw two sets of objects (e.g. 4 apples and 6 apples) and write a sentence to describe which set has more or fewer, circling the larger set and underlining the smaller one. • Group/pair work: in pairs, learners use blocks or counters to create two sets, compare them, and discuss which has more or fewer. • Support for struggling learners: simplify tasks using fewer sets and visual aids like number cards to help identify which has more and fewer. • Independent practice: provide a worksheet for learners to compare and order sets of objects, indicating which has the most and which has the fewest. • For advanced learners: introduce activities where learners compare three or more sets and order them from most to least. 	
Conclusion	
<ul style="list-style-type: none"> • Restatement of learning objectives: this lesson aimed to have learners sort and describe objects based on similarities using terms like "more," "fewer," and "different." • Summary of activities: learners engaged in sorting activities, categorizing objects by characteristics, and discussing their criteria. • Reflection on learning: the sorting activities enhanced learners' categorization and pattern recognition skills through hands-on engagement. • Next steps: future lessons will focus on sorting with more complex criteria and applying these skills to problem-solving tasks. 	

Grouping objects around us

Topic: Count objects reliably

LB page 15

Learning objectives

Learners will be able to:

- sort and classify objects by shape and quantity,
- answer questions about the number of each shape and combining quantities, ultimately demonstrating their understanding of categorization and counting.

Introduction
<ul style="list-style-type: none">• Introduce the concept of sorting, collecting, and describing objects through a hands-on activity.• Sorting objects helps learners understand how to group similar items together, which makes it easier to see how many items are in each group and how to describe them.
TMU notes
<ul style="list-style-type: none">• Conceptual understanding: learners need to grasp the concept of counting objects, understanding that each object represents one unit.• Procedural fluency: learners should be able to count objects accurately and reliably, without missing or double counting.• Strategic competence: learners must apply effective counting strategies, such as grouping or organising objects to count more efficiently.• Adaptive reasoning: learners should explain and justify their counting process, demonstrating how they counted objects reliably and why their method works.
Materials
<ul style="list-style-type: none">• Counters• Any object learners can use to count when introducing the topic.
Instructional guide for practice
<p>Distribute different objects to groups of learners.</p> <ul style="list-style-type: none">• Combine counters of various colours and sizes such as counting blocks, stones, triangles, squares, and rectangles.• Ask the learners what they notice about the counters. (size, colour and shape)• Tell learners to sort the objects by an attribute/criterion of their choice. <p>Clarify instruction to help learners understand the concept.</p> <ul style="list-style-type: none">• Discuss the different ways that learners sorted their objects.• Ask learners to sort their bottle tops again but in a different way this time.• Ask the learners to make a drawing of their different sets of (sorting size or colour) <p>Guided sorting activity</p> <ul style="list-style-type: none">• Provide learners with a variety of objects. Instruct them to sort these objects into different groups based on similarities such as colour, shape, or size.• Encourage learners to describe the groups they create, using terms like "more," "fewer," "similar," or "different." <p>Practice and application:</p> <ul style="list-style-type: none">• Have learners apply these skills to different sets of objects, encouraging them to sort and describe the objects in various ways. Provide feedback to reinforce their understanding of• Sorting and pattern recognition.

Teaching tips
<ul style="list-style-type: none"> • Engage learners: Make the sorting activity interactive by using a variety of objects and encouraging learners to discuss their sorting criteria with peers. • Interactive sorting: Allow learners to work in pairs or small groups to sort and describe objects, promoting collaboration and communication. • Check understanding: Ask learners to explain their sorting decisions and describe the patterns they observe. This helps assess their comprehension of sorting and pattern recognition. • Reinforcement: Provide additional sorting challenges with different objects or criteria to strengthen learners' ability to categorise and identify patterns effectively.
Answers to textbook activities
<p>Activity 1: LF Page 16</p> <ol style="list-style-type: none"> 1. stars = 10 2. circles = 7 3. rectangle = 6 4. squares = 9 5. triangle = 8 6. rectangles + triangle = 6 + 8 = 14
Remediation
<ul style="list-style-type: none"> • Assessment practice: Include tasks like, "Have learners sort a collection of objects into three different categories (e.g. red, blue, green) and then write a brief description of each group, noting how many items are in each category." • Group/pair work: Organise learners into pairs or small groups for collaborative sorting activities. For example, "in pairs, use a mixed set of blocks and sort them based on their colour. Each pair should then present their sorted groups and describe the sorting criteria they used." • For learners needing more support: Provide pre-sorted categories or visual aids to help with sorting. For example, "Use sorting mats with labelled sections (e.g. 'red,' 'blue,' 'green') to help organise and categorise objects. Then, count and describe each group."
Differentiation
<ul style="list-style-type: none"> • Independent practice: Provide a worksheet where learners sort a set of pictures or drawings of objects by distinctive characteristics such as colour, shape, or size. For example, "Sort these pictures of fruits and animals into two groups: fruits and animals. Then, describe each group using terms like 'more' or 'fewer.'" • For advanced learners: Introduce more complex sorting tasks, such as sorting objects by multiple characteristics (e.g. colour and shape). For example, "Sort these blocks into groups by both colour and shape, and then explain how you grouped them."
Conclusion
<ul style="list-style-type: none"> • Restatement of learning objectives: The lesson aimed to help learners understand and practice sorting and describing objects based on their similarities, using terms like "more," "fewer," "similar," and "different." • Summary of activities: Learners engaged in hands-on sorting activities; categorised objects based on specific characteristics and described their groups. Activities included sorting objects by colour, shape, or size, and discussing sorting criteria. • Reflection on learning: The interactive sorting activity helped learners develop categorisation and pattern recognition skills. By working with various objects and discussing their sorting criteria, learners deepened their understanding of organising and describing items. • Next steps: In future lessons, learners will continue to practice sorting with more complex criteria and apply their sorting skills to problem-solving tasks, enhancing their ability to identify and describe patterns.

Guess the number!

Topic: Estimating the numbers of objects

LB page 17

Learning Objective

Learners will

- develop skills in estimation and counting by predicting the number of objects in a group,
- counting them accurately and comparing their estimates with the actual count to enhance their number sense and understanding of quantity.

Introduction	
<ul style="list-style-type: none">• Learners count forwards and backwards from 1 – 10 in 1s.• Example: Show learners using different colour counter counters and ask them to guess the number of each colour they can draw on the board.• In the explanation, clarify that learners are tested through activities where they make a reasonable guess about quantities before counting them exactly.	
Materials	New words
<ul style="list-style-type: none">• Multiple Counters – enough for learners to make meaningful estimates with• Any object learners can use to count when introducing the topic	Estimation: this involves making an educated guess about the number of objects or people without needing an exact count
Instructional guide/strategy	
<ul style="list-style-type: none">• Introduce estimation: Begin by explaining the concept of estimation (guessing a number) Demonstrate with an example, such as asking learners to guess the number of pencils in a jar before counting them to show how estimation works. Put pencils and crayons in a jar/ cup to various numbers and let learners estimate the number, then take them out of the jar and let them count.• Practice estimation: Have learners practice making estimates in various scenarios, such as estimating the number of chairs in the room.• Compare estimates: Conduct activities where learners compare their estimates with the actual counts.• Discuss and reflect: Encourage learners to discuss their estimation methods and reflect on the accuracy of their guesses. Ask them to share strategies they used and think about how they might improve their estimates in the future.• Apply estimation: Encourage learners to apply estimation in real-life situations. For example, have them estimate the number of people in a group or the amount of time needed to complete a task, helping them see the practical use of estimation.	

Answers to textbook activities

LB page 17–18

Activity 2:

- The answers will vary from learner to learner but should show some understanding of the concept.
- estimate – anything between 9–12; count – 11

Counting game
Group Activity

Preparation:

- Before the lesson, gather a variety of objects (beads, toy animals, fruit cutouts, etc.) ensuring there are enough sets of 1 to 5 objects for each group.
- Organise the objects into small sets to give to the groups during the activity.

Introducing the Activity:

- Begin by introducing the concept of comparing and ordering objects. Explain that today, learners will help Squeaky the squirrel organise her treasures.
- Briefly review the vocabulary related to comparing and ordering (e.g. more, fewer, least, most, same).

Instructions to Learners:

- Divide learners into small groups and hand each group a set of 1 to 5 objects.
- Explain the two tasks:

Task 1: Comparing

Each group compares the number of objects in their collection. Ask them:

- Which object group has the most?
- Which has the least?
- Are any groups the same?

Task 2: Ordering

- Now, ask learners to order their treasures from least to most and then from most to least.

Guiding the Activity:

- Walk around the classroom and assist groups as they work on comparing and ordering.
- Encourage discussions within the groups to ensure learners understand how to compare and sequence.
- Offer prompts such as:
 - “What happens if you add another object to your group?”
 - “How can you rearrange your objects to show the order from least to most?”

Group Reflection:

- After the activity, bring the groups together to share their results. Have each group explain how they compared and ordered their objects.
- Ask open-ended questions like:
 - “Which object were easiest to compare?”
 - “What strategy did you use to count and order?”

Wrap-up and Reinforcement:

- Conclude the activity by summarizing the key learning points:
 - Comparing helps us identify which group has more or fewer objects.
 - Ordering helps us organise from least to most or most to least.
- Reinforce the skill by suggesting learners try comparing and ordering objects at home.

Remediation

- **Assessment practice:** Include tasks such as, “Have learners estimate and count various quantities, such as the number of blocks in a set or the number of pages in a book. Assess their ability to make reasonable estimates and compare them to the actual counts.”
- **Group/pair work:** Organise learners into pairs or small groups for collaborative estimation activities. For example, “Work with a partner to estimate the number of objects in a jar, then count them together and compare your estimates to the actual number. Discuss why your estimates were close or far off.”
- **For learners needing more support:** Use visual aids or manipulatives to help with estimation. For example, “Use a jar filled with smaller objects like beads or counters to practice estimating and counting. Provide a smaller set of objects to help learners get used to making and verifying estimates.”

Differentiation

- **Independent practice:** provide worksheets where learners can practice estimation. For example, “Estimate and then count the number of buttons in a box, or the number of steps in a staircase. Record your estimates and actual counts.”
- **For advanced learners:** Provide more complex estimation challenges, such as estimating larger quantities or applying estimation to more abstract problems. For instance, “Estimate the total number of pages in a stack of books by looking at the top book and comparing it to other books in the stack.”

Conclusion

- **Restatement of learning objectives:** This lesson aimed to introduce the concept of estimation, practice making and comparing estimates, and apply estimation to real-life situations.
- **Summary of activities:** Learners engaged in various activities to practice estimation, including making guesses about quantities, comparing estimates with actual counts, and reflecting on their estimation strategies.
- **Reflection on learning:** The hands-on and interactive activities helped learners understand how to make and refine estimates. By comparing their guesses with actual counts and discussing their strategies, learners improved their estimation skills and their understanding of approximate quantities.
- **Next steps:** Learners will continue to practice estimation through more complex scenarios and apply these skills to everyday situations. They will also refine their strategies for making accurate estimates in diverse contexts.

Special names for numbers

Topic: Number symbols and number names

LB page 19

Learning objectives

- Recognise and write number symbols from a visual representation (e.g. dots from a caterpillar).
- Write the corresponding number names for given symbols.
- Complete missing numbers and names in a sequence.
- Verbally articulate numbers from a provided table.

Introduction																																
Introduce the concept of number names up to 10 using the story of Khaya and his friends, The Numerals. Khaya introduces his numeral friends, each one saying their name: "Hi, I am Zero," and so on up to Ten.																																
TMU Notes																																
<ul style="list-style-type: none"> • Conceptual understanding: Learners must understand the connection between number symbols and their number names and how they represent quantities. • Procedural fluency: Learners should quickly and accurately read, write, and use number symbols and number names in calculations. • Strategic Competence: Learners need to apply effective strategies for solving problems using number symbols and number names. • Adaptive reasoning: Learners should explain and justify how they use number symbols and number names in their mental math solutions. 																																
Materials																																
Counters (any object learners can use to count when introducing the topic)																																
Teaching methods																																
<ul style="list-style-type: none"> • Ask learners to count out loud with as you write down the number. <table border="1" data-bbox="177 1178 1302 1262"> <tbody> <tr> <td>Learners count</td> <td>One</td> <td>Two</td> <td>Three</td> <td>Four</td> <td>Five</td> <td>Six</td> <td>Seven</td> <td>Eight</td> <td>Nine</td> <td>Ten</td> </tr> <tr> <td>Teacher writes</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Engage learners with the story: Encourage learners to listen and respond as each numeral introduces itself. Have them repeat the number names aloud to familiarise themselves with the sequence. • Matching activity: Present a visual with number symbols and corresponding groups of objects. Have learners match each number symbol (e.g. 5; 6; 7) with the correct group of objects that represents that number. • Practice number recognition: Reinforce understanding by asking learners to identify and count the objects that match each number symbol. 											Learners count	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Teacher writes	1	2	3	4	5	6	7	8	9	10
Learners count	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten																						
Teacher writes	1	2	3	4	5	6	7	8	9	10																						
Teaching tips																																
<ul style="list-style-type: none"> • Engage learners: Use enthusiastic and interactive storytelling to keep learners interested and make the numeral introductions fun. • Interactive practice: Have learners work in pairs or small groups to match number symbols with objects, fostering collaboration and discussion. • Check understanding: Regularly ask learners to explain their matches and count the objects aloud to ensure they understand the connection between number symbols and quantities. • Reinforcement: Use additional visual aids or manipulatives if needed to reinforce the concept of matching numbers to quantities, and to support learners in developing accurate number recognition and counting skills. 																																

Answers to textbook activities

Activity 1

LB page 20

- 3; 5; 1; 2; 4
 - 3 – three
5 – five
1 – one
2 – two
4 – four
- 5 – five; 4 – four; 3 – three; 2 – two; 1 – one

Activity 2:

LB page 21

- 6 – six
8 – eight
10 – ten
- Read the numbers out loud with the learners.

Remediation

- **Assessment practice:** Include assessment tasks such as, “Have learners identify and write down the number symbols that correspond to different groups of objects. For instance, present a group of 7 apples and ask learners to write the matching number symbol.”
- **Group/pair work:** Organise learners into pairs or small groups to complete matching activities. For example, “Pair learners to work together on a matching game where one learner holds up a number symbol and the other matches it with the correct group of objects. They can then switch roles.”
- **For learners needing more support:** Use fewer numbers and objects and provide more visual aids, such as number charts and object counters, to help with matching and counting.

Differentiation

- **Provide learners with a worksheet that includes number symbols and images of objects.** For example, “Match each number symbol (e.g. 3, 8, 10) to the correct group of objects shown on the sheet. Count the objects to ensure they match the number symbol.”
- **For advanced learners:** Introduce numbers beyond ten or create more complex matching activities involving sequences of numbers or larger groups of objects.

Conclusion

- **Restatement of learning objectives:** The aim of this lesson was to help learners recognise and match number symbols with quantities, improving their understanding of number representation from zero to ten.
- **Summary of activities:** Learners engaged in an interactive story, participated in numeral introductions, and practised matching number symbols to groups of objects. They reinforced their number recognition skills through counting and visual matching.
- **Reflection on learning:** The storytelling approach and interactive activities successfully maintained learner engagement and supported their ability to connect number symbols with corresponding quantities. The use of visual aids and hands-on practice was effective in reinforcing these concepts.
- **Next steps:** Moving forward, learners will continue to practice number recognition and matching with more complex sets of numbers and objects and will begin exploring basic addition and subtraction using these numbers.

Counting is fun!

Topic: Describe, compare and order objects and numbers

LB page 21

Learning objectives

- Count and compare quantities of objects (e.g. hearts and fruit) in different boxes.
- Identify which box contains more or fewer items using comparative language (e.g. "more," "less").
- Understand the concepts of greater and lesser quantities through hands-on counting and comparison activities.

Introduction	
<ul style="list-style-type: none"> • Introduce the concepts of counting and comparing quantities using familiar objects (e.g. hearts and fruit) • Explain that this activity helps learners develop their ability to identify which group has more or less 	
TMU notes	
<ul style="list-style-type: none"> • Conceptual understanding: Learners need to understand how to describe, compare, and order objects and numbers based on size, quantity, or position. • Procedural fluency: Learners should be able to accurately compare and order objects or numbers, determining which is bigger, smaller, or in sequence. • Strategic competence: Learners must use appropriate strategies to compare or order objects or numbers, such as lining up objects or using number lines. • Adaptive reasoning: Learners should explain their reasoning when comparing and ordering, justifying why one object or number is bigger, smaller, or in a specific order. 	
Materials	
Counters (any object learners can use to count when introducing the topic)	
Teaching methods	
<p>Teacher modeling:</p> <ul style="list-style-type: none"> • Count objects aloud while demonstrating the comparison between two groups. • Use clear language to describe the quantities (e.g. "Box A has 2 hearts, and Box B has 1 heart. Box A has more."). <p>Addressing misconceptions:</p> <ul style="list-style-type: none"> • If learners struggle, reinforce the idea that "more" means a larger quantity and "less" means a smaller quantity. • Use concrete examples to clarify the terms. 	
Teaching tips	
<ul style="list-style-type: none"> • Use visual aids to support counting (e.g. pictures or physical objects). • Encourage learners to explain their reasoning when identifying which group has more or less objects 	
Answers to textbook activities	
<p>Activity 1:</p> <ol style="list-style-type: none"> a. B - 4 hearts are more than 3 b. A - 4 hearts are more than 2. c. B - 5 hearts are more than 3. 	<p>LB page 23</p> <ol style="list-style-type: none"> a. B - 3 pineapples are more than 2 b. A - 5 apples are more than 2 a. B - 3 oranges are less than 4 b. B - 4 bananas are less than 5

Remediation

- **Assessment practice:** Have learners draw two sets of objects (e.g. 4 apples and 6 apples) and describe which set has more or fewer.
- **Group/pair work:** Organise learners into pairs to count and compare their sets of objects, discussing their findings.
- **Support for struggling learners:** Provide additional visual aids like number cards or counters to help with counting and comparison.
- **Advanced learners:** Introduce activities that involve comparing three or more sets of objects and ordering them from most to least.

Conclusion

- **Restatement of learning objectives:** The lesson aimed to help learners count and compare quantities of objects, identifying which group has more or fewer items.
- **Summary of activities:** Learners engaged in hands-on counting and comparison activities using hearts and fruit.
- **Reflection on learning:** The activity effectively supported learners in understanding the concepts of more and less through practical examples.
- **Next steps:** In future lessons, learners will continue practicing counting and comparing larger quantities, reinforcing their understanding of these concepts.

EXTRACT PAGES

Let's draw the number lines

Topic: Describe, compare and order numbers

LB page 24

Learning objectives

- Practice solving problems with counters or objects you can touch.
- Visualise math problems by drawing them out.

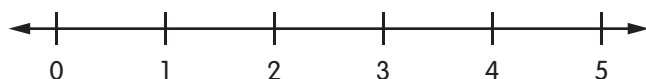
Learners will also use

- a number line to practice counting on and counting back, enhancing their understanding of addition and subtraction within the range of 0 to 5.
- learners will identify and describe the results of adding or subtracting small quantities from given numbers using a number line.

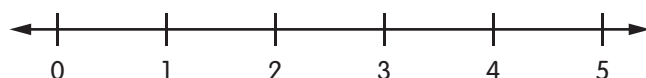
Introduction
<ul style="list-style-type: none">• Introduce the concept of number lines as tools that display numbers in sequence from smallest to largest. Explain how number lines help visualise the order of numbers, making it easier to understand their relative positions.• Demonstrate how to use a number line for counting. Show learners how to move along the line to see how numbers increase or decrease.• Use number lines to practice addition and subtraction. For example, demonstrate adding by moving forward on the number line and subtracting by moving backwards.• Engage learners in activities where they use number lines to solve addition and subtraction problems. For instance, have them add 3 to 5 by moving 3 steps forward on the number line, or subtract 2 from 7 by moving 2 steps backward.• Encourage learners to explain how they use the number line to solve problems and understand changes in numbers.
<p>Example</p> <ul style="list-style-type: none">• This example illustrates how to use a number line to count forwards. By starting at 3 and counting 2 steps forward, the final number landed on is 5.• This example aims to test the ability to use a number line for addition. Visualizing the movement from 3 to 5 reinforces the concept of adding steps to a starting number.• Another example could be: If you start at 6 on the number line and count on 4 steps, what number do you end up on? The answer is 10, which reinforces the concept of counting forwards using a number line.
Materials
Counters (any object learners can use to count when introducing the topic)

Teaching Methods

- **Introduce number lines:** begin by explaining that number lines display numbers in a sequence from smallest to largest.



- Use the number line to talk about the position of the number. Show learners numbers increase to the right and decrease to the left.
- Use jumps to count on and backwards.
- Show example 2 and 2 more.
- Start at 2 and jump to the right 2 hops.



- Now show 5 and 1 less.



Show how the counting and the arrows are moving forwards.

When using a number line, emphasise the starting point and direction of the count.

Emphasise counting forwards to the right and counting backwards to the left.

- **Demonstrate Counting:** Show how to use a number line for counting. Illustrate how moving forward on the number line represents counting and moving backwards represents counting down. Demonstrate addition and subtraction on the number line. For addition, move forward from a starting number by the number of steps to be added. For subtraction, move backwards by the number of steps to be subtracted.
- **Have learners use number lines to solve addition and subtraction problems.** For instance, guide them to add 3 by counting 2 steps forward or subtract 2 from 5 by counting 2 steps backward.

Teaching tips

- **Use visual aids:** Use visual aids such as number lines on a whiteboard or printable number lines for learners to follow along and interact with.
- **Incorporate hands-on practice:** Provide physical number lines that learners can manipulate to physically move along the line for addition and subtraction activities.
- **Model the process:** Demonstrate each step clearly, showing how moving forward and backwards affects the numbers. Use examples that gradually increase in complexity to build learners' confidence.
- **Check for Understanding:** Frequently ask learners to explain their thought process and how they arrived at their answers using the number line.
- **Apply real-life scenarios:** Use real-life scenarios to make number lines more relatable. For example, illustrate how a number line can represent days of the week or steps in a process.

Answers to textbook activities	
Activity 2:	LB page 24
1. 5 2. 2 3. a. 4 and 1 more = 5 b. 5 and 1 less = 4 c. 3 and 2 more = 5 d. 3 and 2 less = 1	
Remediation	
<ul style="list-style-type: none"> • Assessment practice: Include tasks such as, "Have learners solve problems using a number line and write their answers. For example, 'Use the number line to show how you would add 2 to 6 and then find the result.'" • Group/Pair work: Facilitate activities where learners work together to solve problems using number lines. For example, "Pair up and use a shared number line to solve addition and subtraction problems. Discuss how each step on the number line helps find the correct answer." • For learners needing more support: Use number lines with visual aids or manipulatives. For example, "Provide number lines with clear markers and use counters to help learners physically move along the line for addition and subtraction." 	
Differentiation	
<ul style="list-style-type: none"> • Independent practice: Provide worksheets where learners practice using number lines to solve addition and subtraction problems. For example, "Complete the worksheet by using the number line to add and subtract numbers, such as finding the result of $4 + 3$ or $9 - 5$." • For advanced learners: Introduce more complex problems or number lines with larger ranges. For example, "Use a number line to solve multi-step problems or to handle large numbers, such as adding 15 to 20 or subtracting 12 from 25." 	
Conclusion	
<ul style="list-style-type: none"> • Restatement of learning objectives: The aim of this lesson was to introduce learners to number lines for visualizing and solving addition and subtraction problems, and to help them understand the sequential nature of numbers. • Summary of activities: Learners practised counting, addition, and subtraction using number lines. They engaged in hands-on activities to solve problems and used the number line to visually track numerical changes. • Reflection on learning: The use of number lines helped learners grasp the concepts of counting up and down, as well as performing addition and subtraction. The visual and interactive nature of the activities reinforced their understanding and application of these operations. • Next steps: Moving forward, learners should apply their understanding of number lines to more complex mathematical problems and real-world scenarios, enhancing their ability to solve problems and visualise numerical relationships. 	

The basics and beyond

Topic: Solve problems

LB page 25

Learning objectives

- Learners will solve basic addition and subtraction problems using numbers up to 20, strengthening their ability to perform simple calculations.
- Learners will apply their understanding of real-life problem-solving by determining how many objects remain or are left after a change in quantity (adding or taking away).
- Learners will practice completing number sentences and equations by finding missing addends and differences within 5.

Introduction

- Begin by having learners count forwards and backwards from 1 to 10 in 1s to reinforce their number sense.
- Explain that today they will solve problems involving adding, taking away, and sharing objects.

TMU Notes

- **Conceptual understanding:** Learners need to grasp how mathematical operations apply to real-life situations when solving problems in context.
- **Procedural fluency:** Learners should be able to follow steps to accurately solve word problems, including addition, subtraction, or other operations.
- **Strategic competence:** Learners must choose effective strategies, like identifying key information and breaking down problems, to solve them efficiently.
- **Adaptive reasoning:** Learners should explain their problem-solving process, logically justifying their solutions and how they fit the context of the problem.

Materials

Counters (any object learners can use to count) and introducing the topic) new words introduced.

Teaching methods

- **Introduce mathematical concepts:** present basic addition, subtraction, and sharing through real-life examples. show how these help in dividing and managing items.
- **Engage in problem-solving:** use activities from the learning objective like "Lily has 6 eggs and broke 2" or "You have 5 oranges, share them with 2 friends." Work through these problems together.
- **Example problem:** use the multiple-sharing example, illustrating how to equally divide and handle remainders.
- **Explain process:** guide learners through each step and have them verbalize their reasoning to reinforce understanding.
- **Encourage justification:** prompt learners to explain their methods and why they arrived at their answers.

Teaching tips

- **Intentional problem-solving:** Solve problems together, encouraging discussion on various methods.
- **Check for understanding:** Ask learners to explain their process after each problem.
- **Real-life application:** Present relatable problems, such as sharing toys or fruit, to make math relevant.
- **Reinforcement:** Use different objects and scenarios to strengthen learners' skills in addition, subtraction, and equal sharing.

Answers to textbook activities

LB page 26–27

Activity:

1. a. $2 + 4 = 6$ b. $7 - 3 = 4$ c. $3 + 7 = 10$
 d. $10 - 4 = 6$ e. $10 - 5 = 5$ f. $20 - 10 = 10$
2. 6 eggs – 2 broken eggs = 4 eggs remaining
3. 4 birds + 2 birds = 6 birds
4. $6 - 3 = 3$ toy cars
5. $5 - 3 = 2$ oranges left
6. a. 3 plums each
 b. 1 plum left over
7. a. $2 + 3 = 5$ b. $2 + 3 = 5$
 c. $4 + 1 = 5$ d. $3 + 2 = 5$
 e. $1 + 4 = 5$ f. $5 - 3 = 2$
 g. $5 - 1 = 4$ h. $5 - 2 = 3$

Remediation

- **Assessment Practice:** Have learners create their own problems, such as you have 8 apples and give 3 away. How many are left?
- **Group Work:** In small groups, solve sharing and subtraction problems using counters, comparing strategies.
- **For Learners Needing Support:** Simplify problems using smaller numbers and aids such as number lines or counters to help learners grasp subtraction and equal sharing.

Differentiation

- **Independent practice:** Offer worksheets with a range of addition, subtraction, and equal sharing problems. For example, Complete the worksheet where you solve problems like, 'You have 8 apples and need to share them equally with 3 friends. How many apples does each friend get, and how many are left over?'
- **For advanced learners:** Provide more complex problems that involve multi-step solutions or larger numbers. For instance, 'If you have 15 marbles and need to share them equally among 4 friends, how many marbles does each friend get, and how many are left over? Solve the problem and explain your steps.'

Conclusion

- **Restate the learning objectives:** Today, learners practiced addition, subtraction, and sharing objects, helping them solve real-life problems.
- **Summary of activities:** Learners worked through examples of sharing marbles, counting objects, and subtracting items to find out how many remain.
- **Reflection on learning:** Through interactive problem-solving, learners developed their ability to calculate and divide objects fairly, reinforcing their mathematical skills.
- **Next steps:** Learners will move on to solving more complex problems involving bigger numbers and exploring multiplication as repeated addition.

Topic: Calculations

LB page 28

Learning objectives

- Learners will understand the concept of number bonds, where two numbers combine to make a larger number, and practice basic addition and subtraction through simple maths problems.
- Learners will develop skills in solving problems using physical objects like buttons or toys to visualize number combinations and operations.

Introduction

- Introduce the concept of number bonds as a fun way to combine two numbers to make a larger number.
- Explain that learners will practice addition by finding pairs of numbers that sum up to a target number using counters or any available objects.

TMU Notes

- **Conceptual understanding:** learners need to understand mathematical operations and their properties, recognizing how they relate to numbers and calculations without context.
- **Procedural fluency:** learners should perform basic calculations, such as addition and subtraction, quickly and accurately without relying on visual aids or contextual clues.
- **Strategic competence:** learners must select appropriate methods for calculating, like mental math or written strategies, to solve numerical problems effectively.
- **Adaptive reasoning:** Learners should be able to articulate their reasoning and processes for calculations, demonstrating logical thinking in arriving at their answers.

Materials

- Counters (or any objects learners can count)
- Number cards

Teaching methods

- **Practice Number Bonds for 5:** The goal is to find different pairs of numbers that add up to 5.
- **Distribute Counters:** Give each pair of learners 5 counters (or similar objects) to work with.
- **Grouping Exercise:** Ask learners to split the 5 counters into two groups in various ways.
Expected answers: $1 + 4$, $2 + 3$, $3 + 2$, $4 + 1$.

 Expected answers



Learners can now try $1 + 4$, $2 + 3$, $3 + 2$, $4 + 1$.

- **Zero grouping:** Then, ask learners to group all 5 counters together in one group and ask how many more they need to make 5 (answer: 0).
- **Explain Number Bonds:** Clarify that this activity helps learners find different pairs of numbers that add up to 5, known as number bonds of 5.

- **Demonstration:** Use counters or number cards to show various ways of making 5, such as $1 + 4$, $2 + 3$ and show different representations of number bonds.
 - **1 + 4:** Place 1 counter in one group and 4 in another. Show the number cards “1” and “4” to represent the counters.
 - **+ 3:** Separate 2 counters in one group and 3 in another, displaying the “2” and “3” number cards.
- **Explore More Bonds:** Demonstrate how combining different pairs like 2 and 3 or 1 and 4 create 5. Emphasize that these pairs are called number bonds.
- **Hands-on Practice:** Provide learners with more opportunities to practice creating number bonds using objects or numbers to solidify their understanding.

Teaching tips

- **Visual Aids:** Use charts showing number bonds up to 5 to visually reinforce the concept.
- **Interactive Practice:** Encourage learners to explore number bonds using counters or cards, allowing them to physically see the combinations.
- **Modeling:** Demonstrate how to form number bonds step by step and explain how the pairs relate to each other.
- **Real-Life Application:** Relate the activity to practical examples, such as combining objects in a group.
- **Check Understanding:** Regularly ask learners to explain their answers, ensuring they understand the process of creating number bonds.

Answers to textbook activities

<p>Activity 1:</p> <p>1. $1 + 4 = 5$ 2. $2 + 3 = 5$ 3. $4 - 1 = 3$ 4. $5 - 3 = 2$</p>	<p>LB page 28</p>
<p>Activity 2:</p> <p>1. $2 + 3 = 5$ 2. $4 - 1 = 3$ 3. $1 + 4 = 5$ 4. $5 - 2 = 3$</p>	<p>LB page 29</p>
<p>Activity 3:</p> <p>1. $3 + 1 = 4$ 2. $2 + 2 = 4$ 3. $4 + 1 = 5$ 4. $3 - 1 = 2$ 5. $4 - 1 = 3$ 6. $5 - 2 = 3$</p>	<p>LB page 31</p>

Remediation

- **Prompt:** “If you have the number 4, what number pairs with it to make 6? Write down your number bonds.”
- **Group/pair work:** “Work with a classmate using number cards to create number bonds up to 10. Discuss your combinations and check with other answers.”
- **Support for struggling learners:** use visual aids like number lines and counters to demonstrate number bonds. For example, “use counters to physically group numbers to make totals like 7. Visualize the process with a number line.”
- **Independent practice:** provide worksheets for matching number names with symbols and creating number bonds. For example, “Match number names with symbols, then show ways to create number bonds for 5.”

Differentiation

For advanced learners: challenge learners with number bonds beyond 10. For example, “Create number bonds for 12, showing different pairs that combine to make 12.”

Conclusion

- **Learning Objective Restated:** Learners were introduced to number bonds and practiced combining numbers to perform basic arithmetic.
- **Activity summary:** Learners explored number bonds using manipulatives and practiced creating combinations.
- **Next Steps:** Learners will continue practicing number bonds with larger numbers and apply these concepts in more complex addition and subtraction problems.

Comparing time

Topic: Time

LB page 32

Learning objectives

- Identify and compare the duration of everyday activities (e.g. brushing teeth, playing a game).
- Recognise different times of the day (morning, afternoon, evening) and relate them to daily routines.
- Sequence events in the correct order of the day.
- Distinguish between past, present, and future events based on given scenarios.
- Develop an understanding of temporal relationships and how they apply to real life situations.

Introduction

- Introduce the concept of time by discussing daily activities and how long they take.
- Explain that we can compare activities based on how fast or slow they happen and recognise different times of the day (morning, afternoon, evening).

TMU Notes

- **Conceptual understanding:** Learners need to grasp the basic concepts of time and length, understanding how to read clocks and measure objects using standard units.
- **Procedural fluency:** Learners should accurately tell time and measure length using tools like clocks, rulers, or tape measures.
- **Strategic competence:** Learners must choose appropriate methods and tools for measuring time or length depending on the situation.
- **Adaptive reasoning:** Learners should explain their reasoning when measuring or telling time, justifying their methods and results logically.

Teaching methods

- **Teach Time Concepts:** Use familiar activities to explain concepts like fast, slow, and durations. Introduce morning, afternoon, and evening by relating them with daily routines (e.g. breakfast in the morning, play in the afternoon).
- **Engage Learners in Sequencing:** Show pictures of daily activities (e.g. breakfast, playing, sleeping) and ask learners to sequence them in the correct order.
- **Teach Days of the Week:** Focus on days of the week using practical examples like, "Today is Monday, what was yesterday?"
- **Common Misconceptions:** Learners may confuse the order of events. Use visual aids and routines to clarify.
- **Misunderstanding of present, and future events** can be addressed by discussing known dates (e.g. birthdays).

Teaching tip

- **Visual aids:** Use pictures to represent activities for comparison and sequencing.
- **Interactive practice:** Have learners act out daily routines to help them understand morning, afternoon, and evening.
- **Check for understanding:** Ask questions like, "What do you do in the morning?" to gauge comprehension.

Answers to textbook activities

Activity 1:

1. Playing a game
2. Brushing your teeth
3. Brushing your teeth
4. Yes, playing a game is slower than brushing teeth, because a game can go on for a very long time.

LB page 33

Intervention/Extended Work

- **Intervention:** For learners who struggle, provide hands-on activities like physically sorting pictures of daily events into the correct sequence.
- **Extension:** Ask advanced learners to create their own timeline of activities, or discuss longer periods like months and years, applying concepts of past and future events.

Conclusion

- **Restate the Objective:** The lesson focused on understanding time through comparing activities, recognising parts of the day, and sequencing events.
- **Summaries Activities:** Learners compared durations of activities, sequenced events, and identified times of day.
- **Next Steps:** Learners will continue practicing by discussing other daily activities and their relation to time, building towards an understanding of calendars and longer periods.

EXTRACT PAGES

Topic: Time

LB page 34

Learning objectives

- Use words like longer, shorter, faster, and slower to describe how things happen and understand the passing of time.
- Identify and describe morning, afternoon, and evening to recognise the times of the day.
- Use terms like yesterday, today, and tomorrow to sequence events.
- Name and order the days of the week and the months of the year to know the days and months.

Introduction

- Begin by introducing the concept of time and its importance in organising our daily activities.
- Explain how time helps us know when to do things and plan our day, such as waking up in the morning, going to school in the afternoon, and going to bed in the evening.
- Example: Ask learners what time they go to bed, how long they take to bathe in the morning, and what their favourite day of the week is, to measure how much they know about time.

Materials

Counters (any object learners can use to count when introducing the topic)

New words

- **Time:** something we use to keep track of how things change, when they happen and how long something takes to happen
- **Longer:** means that something takes more time to get through.
- **Shorter:** means that something takes less time to get through.
- **Faster:** When something is faster, it means it happens quickly.
- **Slower:** When something is slower, it means it takes more time to happen.
- A **week** is a particular group of days.
- A **month** is a period that is made up of weeks.
- **Present** means what is happening right now.
- The **past** is something that has already happened.
- The **future** is something that is yet to happen.

Teaching methods

- **Begin by asking learners which would take more time (Faster) to do from the activities listed below.**
 - a. making tea or cooking soup
 - b. taking a bath or brushing teeth.

Explain that longer takes longer, then it takes more time to do and shorter takes less time to do.
 - **Give learners the statement** (Thabo eats his food very slowly) and then ask, "Will he take a longer or shorter time to finish?" longer.
 - Use another example that's contextually appropriate to check understanding.
 - **Ask learners to say** who will get to the shops faster. A boy running to the shops or a granny walking to the shops.
- After learners have understood the passing of time, introduce the times of the day.

- **Engage learners in activities** where they practice using words to describe different times of the day, such as morning, afternoon, and evening. Have them discuss daily routines and how time helps them structure their day. Give learners activities that will require them to say when things happen:
Coming back from school (afternoon); Going to bed (evening); Playing with friends (afternoon)
- **After understanding the times of the day, an introduction to the days of the week follows.**
Let the learners say the days of the week out loud.
Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday
- **When the days of the week have been understood, introduce the calendar.**
Ask learners if they know about a calendar. And let them say the months of the year in sequences.
January, February, March to December.
- **Display a calendar or distribute copies to learners,** and then ask learners what they see from the calendar.
Guide learners regarding days in a week, weeks in a month, and months that comprise a year.
- **Ask learners to count** the number of months in a year. 12
- **Provide exercises** where learners name the days of the week and months of the year. Use tools like calendars or timelines to help visualise the passage of time throughout the year.
For months of the year, questions could include, Which month comes after April? or Which month is before October?
Ask learners to state which month their birthday falls in.
- **Check understanding by including different aspects of time** to address common potential questions are: "Which takes longer, a week or a month?" or "Is a 30-minute movie longer or shorter than a 1-hour movie?" These questions help learners understand time concepts, sequences, and duration essential for daily life and planning. Once the learners have mastered months, conclude the lesson by talking about Yesterday is what has passed (Past). Today is what is happening now (Present), and Tomorrow is what will still happen (Future)
Ask learners about what has happened, what is still to happen and what is currently happening.

Teaching tips

- **Visual aids:** Use calendars, clocks, and timelines to make the concept of time more tangible.
- **Relate to daily routines:** Connect time concepts to learners' routines to make the topic more relatable.
- **Interactive activities:** Incorporate hands-on activities such as creating personal schedules or timelines, to deepen understanding.
- **Check for understanding:** Regularly assess learners' grasp of sequential days, times of day, and durations through questions and practical exercises.

Answers to textbook activities

<p>Activity 2: LB page 35</p> <ol style="list-style-type: none"> a. Evening b. Morning c. Afternoon C; A; B can be... 	<p>Activity 3: LB page 36</p> <ol style="list-style-type: none"> Sunday a. future b. present c. past
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Remediation

- **Assessment for practice:** include tasks such as having learners match times of day with appropriate activities or organise daily events in chronological order. For example, "List your daily activities and put them in the correct order according to the time of day they happen."
- **Group/Pair work:** organise activities where learners work in pairs or small groups to create a daily schedule or timeline. For instance, "Work with a classmate to plan a daily schedule for a fictional character, including times for each activity."
- **For learners needing more support:** use additional visual aids and hands-on tools like clocks or calendars with pre-filled sections. For example, "Use a clock with movable hands to practice setting different times and describe what activities might happen at those times."

Conclusion

- **Restatement of learning objectives:** the goal of this lesson was to understand and apply the concept of time, including the ability to identify different times of the day, days of the week, and months of the year, and to use this knowledge to plan and organise daily activities.
- **Summary of activities:** learners engaged in activities such as describing times of the day, working with calendars and timelines, and creating schedules. These activities reinforced their understanding of how time structures and organises daily life.
- **Reflection on learning:** using practical examples and interactive activities helped learners grasp the concept of time effectively. Connecting time to their daily routines made the concept more relevant and easier to understand.
- **Next steps:** Moving forward, learners will explore more complex time-related concepts, such as elapsed time and time zones, and practice applying these concepts in various real-life situations.

EXTRACT PAGES

Measure length in the jungle

Topic: Mass

LB page 37

Learning objectives

In this lesson learners will:

- compare and order animals and objects from heaviest to lightest.
- identify which objects are heavier or lighter by comparing two items.
- differentiate between heavier and bigger versus lighter and smaller objects.
- Understand and use of terms like heavy, light, more, less, big, and small.
- Practice measuring with items like blocks or hands.

Topic
Mass
Learning Objective
Introduction
<ul style="list-style-type: none">• Learners count backwards and forwards from 1-10 to reinforce number sense.• Introduce the concept of comparing weights by using real-life examples of heavy and light objects. <p>Example</p> <ul style="list-style-type: none">• Show learners two objects, one light and one heavy. Ask, "Which one do you think is easier to carry and why?"• Encourage learners to describe the weight of the objects using terms like "heavier" and "lighter."
Materials
Counters (any object learners can use to count when introducing the topic)
New words
<ul style="list-style-type: none">• Measurement is something we use to figure out how long, short, tall, big, small, full, empty, heavy or light something or someone is• Heavier: Something that is hard to lift• Lighter: Something that is easy to lift
Teaching methods
<ul style="list-style-type: none">• Ask learners to mention something that is easy to carry and difficult to carry. Have a class discussion on groceries that learners have seen, like sugar, salt, and cornflakes, and how easy these are to carry.• Now, give learners a list of objects and let them say if they are easy to lift. Examples are a table, stove, fridge, bed, and school satchel.• Ask learners if they have been on a seesaw / seen one. Follow this by asking why one is lifted high and the other one on the seesaw remains on the ground.• Explain to learners that different objects are either light (easy to carry/lift) or heavy (harder to lift). The statement to chant is "Heavy weighs more, and light weighs less".• Ask learners which is heavier: a paper or a book (book), a dog or a cat. Allow them to use terms like heavier, lighter, bigger, and smaller to describe their findings. Lastly, let them use their hand to say what could be lighter or heavier by trying to lift the objects.
Teaching tips

- **Visual comparisons:** use visual aids and physical demonstrations to illustrate mass differences between objects.
- **Interactive measurement:** incorporate hands-on activities where learners use balance scales or other measurement tools to engage directly with the concept of mass.
- **Real-life context:** relate measurement activities to real-world scenarios to make the concept more relatable and practical.
- **Check understanding:** regularly assess learners' ability to compare and describe the mass of objects, providing feedback to reinforce their understanding.

Answers to textbook activities

Activity 1:

LB page 38–39

1. B; A; C OR dog; cat; rat
2. B
3. B
4. A
5. A

Remediation

- **Assessment practice:** Include tasks such as having learners measure objects using a balance scale and record their observations, describing which objects are heavier or lighter.
- **Group/Pair work:** Organise activities where learners work in pairs or small groups to measure and compare the mass of different items using informal units or simple tools.
- **For learners needing more support:** Use additional visual aids and hands-on activities with simple, familiar objects to help learners understand the concept of mass and measurement.

Differentiation

- **Independent practice:** Provide worksheets or activities where learners use informal units (like hands or blocks) to estimate and compare the mass of various objects.
- **For advanced learners:** Introduce tasks involving more precise measurement techniques and comparisons using standard units of mass, such as grams or kilograms.

Conclusion

- **Restatement of Learning objective:** This lesson aimed to understand and apply the concept of measuring mass, using both informal units and tools to compare quantities and describe differences in weight.
- **Summary of activities:** Learners engaged in activities such as comparing the mass of objects using informal units, measuring objects with balance scales, and describing their observations. These activities reinforced their understanding of mass and how to measure and compare it.
- **Reflection on learning:** Hands-on measurement and practical comparisons helped learners grasp the concept of mass effectively. The use of visual and interactive methods allowed them to connect measurement to everyday experiences.
- **Next steps:** Moving forward, learners will practice using more precise measurement tools and explore how mass is related to other mathematical concepts, such as volume and density.