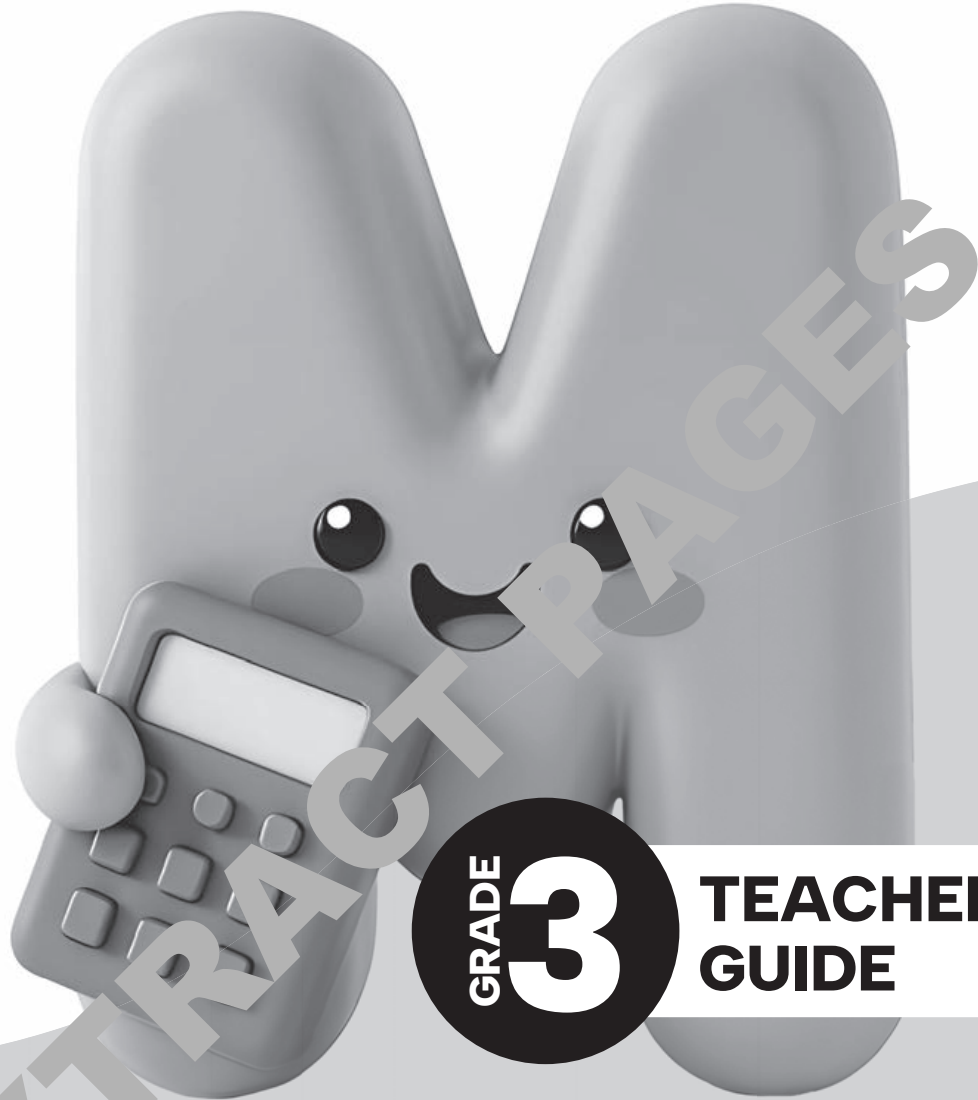


CAPS

maskew miller
learning 



GRADE

3

**TEACHER'S
GUIDE**

Platinum

Mathematics

S. Bota • G. Agherdien • N Johnson • G. Van der westhuizen

Platinum Mathematics Grade 3 Teacher's Guide

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

© Maskew Miller Learning (Pty) Ltd 2022

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without the prior written permission of the copyright holder.

To request permission to reproduce or adapt any part of this publication, please contact the Rights and Permissions team on 021 532 6000 or email rightsgranting@mml.co.za. To report copyright infringement, please email copyright@mml.co.za.

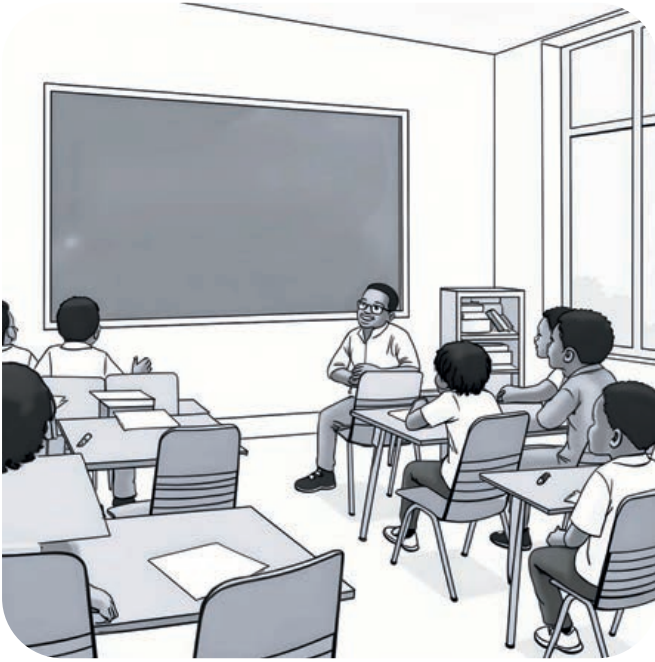
1st impression 2026

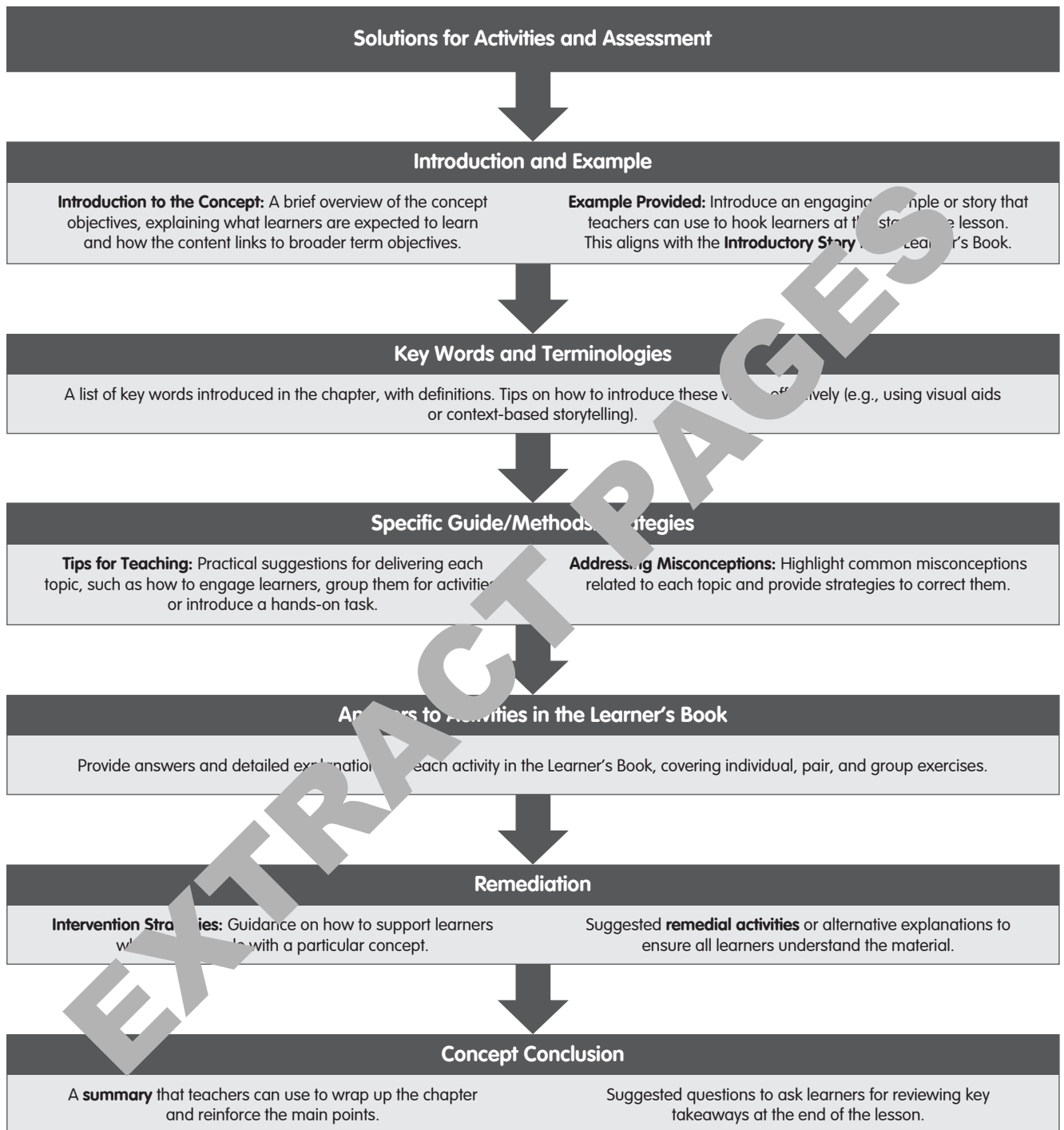
ISBN 978-1-779-83286-3
ePDF 978-1-779-89602-5

Publisher: Thandi Kgosana
Managing Editor: Saalih Abrahams
Edited by Christine de Nobrega
Cover design by MML Visual Design
Cover artwork by MML Visual Design
Book design by MML Visual Design
Artwork by MML
Typeset by Straive
Printed by

Table of Contents

Welcome	v
Message by publisher and authors	vi
How to use this guide effectively	vii
Teach like a champ!	viii
Teaching mathematics for understanding	xi
Reference to teaching resources	xii
Curriculum breakdown (CAPS)	xiv
Learning objective per content area	xiv
Recommended number of lessons per content area	xvi
Content & concepts mapping	xvii
Term 1: Let's see what you know	1
Term 2: Ready for a quick check	53
Term 3: Looking back at what we know	99
Term 4: Showcase what you know!	137
Getting ready for grade 4	169
Mental maths	170
Answers to mental maths	191
Professional development and collaboration	203
Reading assessment in the foundation phase	208
Additional support	210
Pedagogical approach	224
Maths terms glossary	229





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 areas, can 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 greatness.

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 motivated and healthy because we know that when you feel good, your classroom thrives. Your happiness influences not just your teaching but also the relationships you build with your learners, who look to you for hope and inspiration.

As South Africa continues its 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 CAPS and BELA ensures your classroom is a place where learners are well-prepared for success.

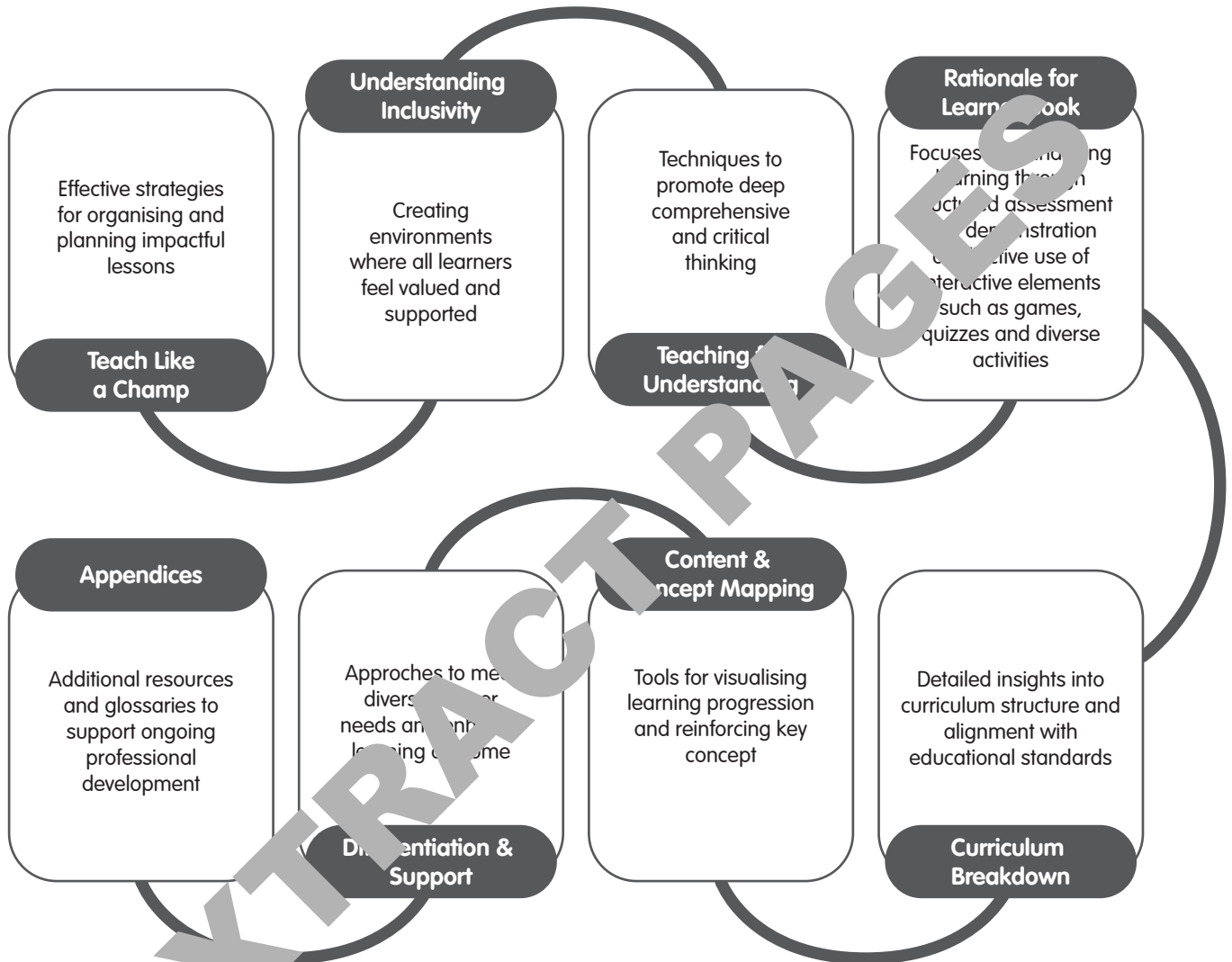
You are a powerful force for positive change, and the impact you make in your classroom is greater than you may notice. As you know, you are not just guiding your learners; you are shaping the future of our communities, our country, and the world.

Thank you for everything you do.

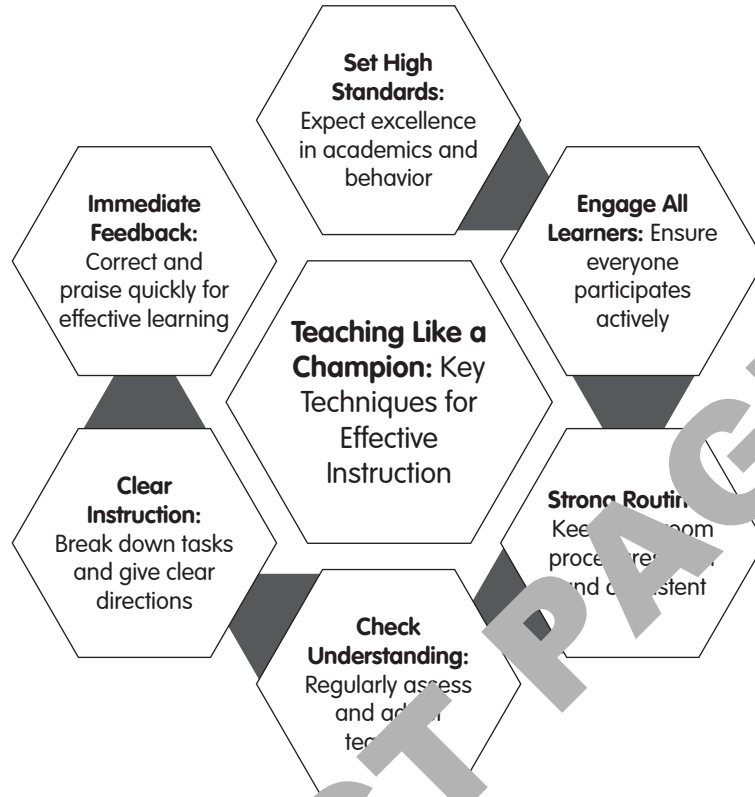


How to use this guide effectively!

Welcome to our Foundation Phase Teacher Guide, a valuable resource crafted to support educators utilising 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 learners learning experiences.



In view of this, the guide further encourages ongoing reflection and growth, fostering a collaborative learning environment where teachers can continuously improve their pedagogical skills and positively impact learner achievement. As a 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.



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 affected 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 a broad and inclusive representation of different identities, perspectives, and experiences.

Table 1: Types of diversity

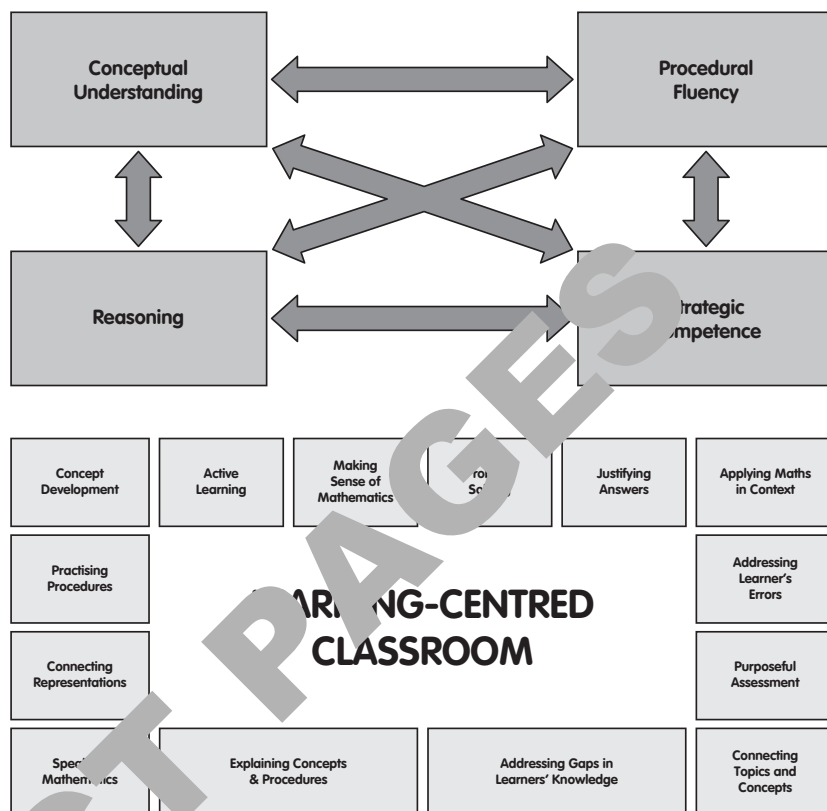
Diversity category	Definition	Coverage in the book
1. Cultural and Ethnic Diversity	This refers to representing various cultural and ethnic backgrounds, ensuring learners are exposed to different perspectives and traditions.	We have included characters, authors, and historical figures from diverse cultural backgrounds. Stories and examples incorporate a range of traditions, customs, and languages. This helps learners appreciate cultural richness and discourages stereotypes by offering balanced views on historical and contemporary issues.
2. Gender Diversity	Gender diversity refers to the representation of all genders and includes discussions around gender roles, non-binary identities, and gender equality.	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. Socioeconomic Diversity	This involves representing characters from different economic 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, first-person language. This creates a more accepting environment for all learners and encourages empathy and understanding.

<p>6. Sexual Orientation and LGBTQ+ Inclusion</p>	<p>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.</p>	<p>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.</p>
<p>7. Religious and Spiritual Diversity</p>	<p>This involves representing a variety of religious beliefs and promoting respect for different spiritual practices.</p>	<p>Our books contain content that introduces learners to various religions and spiritual practices. We’ve also encouraged interfaith 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.</p>
<p>8. Age Diversity</p>	<p>Age diversity involves including people from different age groups and discussing issues related to aging.</p>	<p>In our 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.</p>
<p>9. Geographic Diversity</p>	<p>Geographic diversity represents people and issues from various regions and environments, both global and local.</p>	<p>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.</p>
<p>10. Cognitive and Learning Diversity</p>	<p>This refers to addressing different learning styles, abilities, and cognitive differences, such as neurodiversity.</p>	<p>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.</p>

Teaching mathematics for understanding

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 surpasses 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:

- **Conceptual understanding:** Grasping mathematical concepts, operations, and relationships.
- **Procedural fluency:** Executing mathematical procedures accurately, efficiently, and flexibly.
- **Strategic competence:** Formulating, representing, and solving mathematical problems.
- **Reasoning:** Reflecting on, explaining, and justifying mathematical processes and solutions.

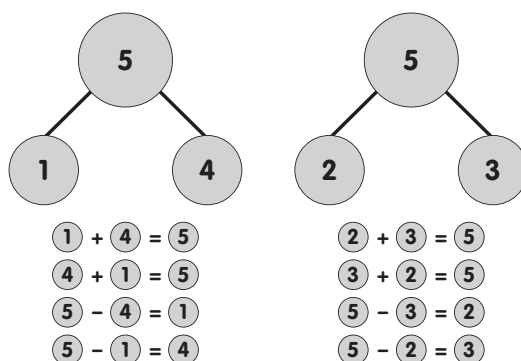


These strands interact dynamically within a **learning-centred classroom**, which emphasises active learning, concept development, problem solving, and making sense of mathematics.

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

use manipulatives to show $3 + 2$. They can group the blocks and count to see how many there are in total.

Number Bonds to 5



Reference to teaching resources

Design of the Learner's 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 defines new vocabulary in a clear and accessible manner, helping learners understand and remember the meanings of words.
End of term test	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 and activities stimulate creativity and innovation, allowing learners to apply theoretical knowledge in real-world scenarios and develop critical thinking.

Structure for Grade 5 Mathematics Learner book

- The content is designed to begin with **foundational skills** such as counting and place value, gradually introducing **more complex concepts** like fractions, patterns, and data handling.

Topics are integrated progressively:

- Number operations lay the groundwork for understanding fractions, patterns lead into early algebraic thinking, measurement introduces concepts related to size and quantity, and data handling builds on number comparison and graphical representations.
- This **progressive structure** ensures that each concept reinforces and prepares learners for the next, creating a cohesive and cumulative learning experience.

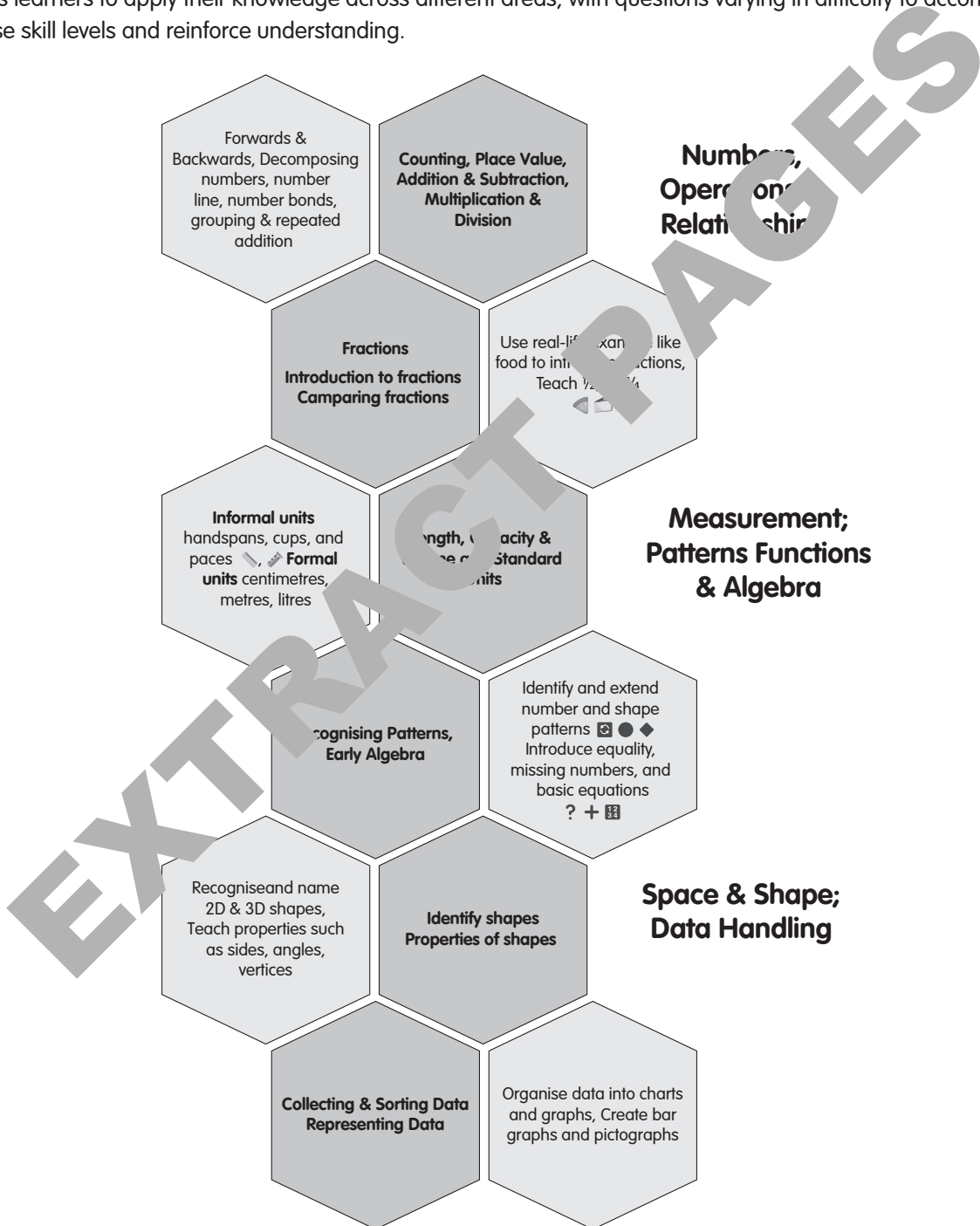
Flow and integration.

- The ATP (Annual Teaching Plan) topics are structured to **start with foundational skills** (like counting and place value) and gradually introduce more complex concepts (like fractions, patterns, and data handling).

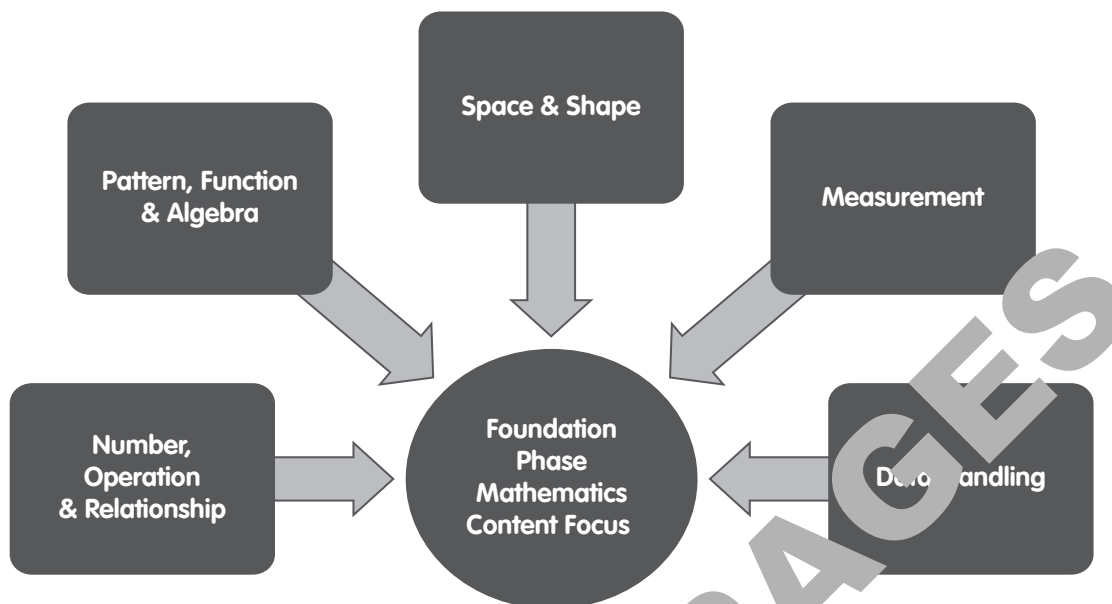
Each topic is merged with earlier learning areas:

- Number operations establish the foundation for fraction comprehension, patterns lead to an introduction to algebraic thinking, measurement enhances knowledge of dimensions and quantities, and data handling incorporates comparison and graphical representation skills.
- The term content is thus built in a **progressive, integrated manner**, ensuring that each concept reinforces and prepares learners for the next.

The end of term test mirrors this integrated approach by incorporating several topics within questions. This approach allows learners to apply their knowledge across different areas, with questions varying in difficulty to accommodate diverse skill levels and reinforce understanding.



Curriculum breakdown (CAPS)



Learning objective per content area

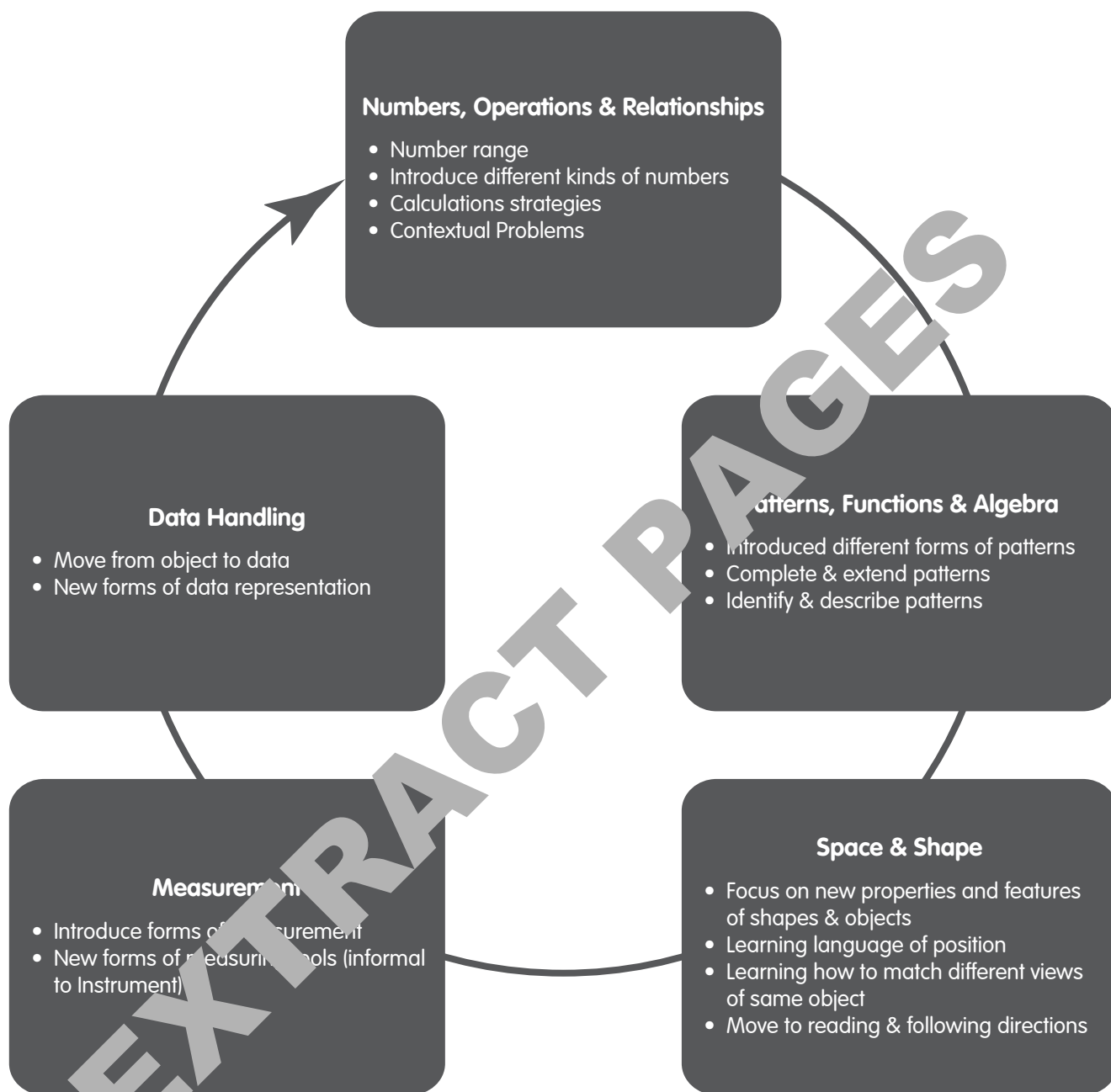
Numbers, processes, and connections	Algebra, Functions, and Patterns
<p>In the foundation phase, learners should learn about numbers by working with real items and doing structured tasks. They count groups of things, break down and add up amounts, and do skip counting in many different ways. Learners work on contextual word problems and are taught how to build up and break down numbers.</p> <p>Counting games should help learners learn how to recognise patterns, develop their number sense, do math in their heads, and find patterns. Learners are taught how to look into the quantities of numbers and come up with ways to make calculations easier.</p> <p>Problem-solving in context should be a part of all activities. Learners should be able to talk about their arithmetic, both orally and in writing, using pictures, symbols, and, where appropriate, number sentences.</p> <p>Learners learn about the four operations, addition, subtraction, multiplication, and division, by doing them in different situations.</p> <p>Learners learn about fractions by solving problems that involve sharing physical things and making pictures. Problems should have answers that are whole numbers, remainders, and parts of fractions. Learners should practice both sharing a whole and sharing groups of things. At this point, Learners don't have to read or write formal fraction notation.</p>	<p>During this stage, Learners work with both number patterns (like skip counting) and geometric patterns (like visual and pictorial patterns).</p> <p>Learners should be given chances to replicate, add to, describe, and make patterns with real things, drawings, and symbols.</p> <p>When learners copy patterns, they can figure out what the pattern's rule or structure is. When learners extend patterns, they can use what they know about the pattern rule and check their understanding.</p> <p>Learners should be encouraged to use the right arithmetic words to talk about patterns. This will help them learn new math words and improve their communication skills. It is important to find and describe the rule that governs the pattern, as this is the basis for algebraic thinking.</p> <p>To help kids learn about numbers and improve their operational sense, they should use number patterns.</p> <p>Geometric patterns should comprise sequences of lines, shapes, and objects, as well as patterns that can be seen in the world around us. Learners use and strengthen their knowledge of space and shape through these exercises.</p>

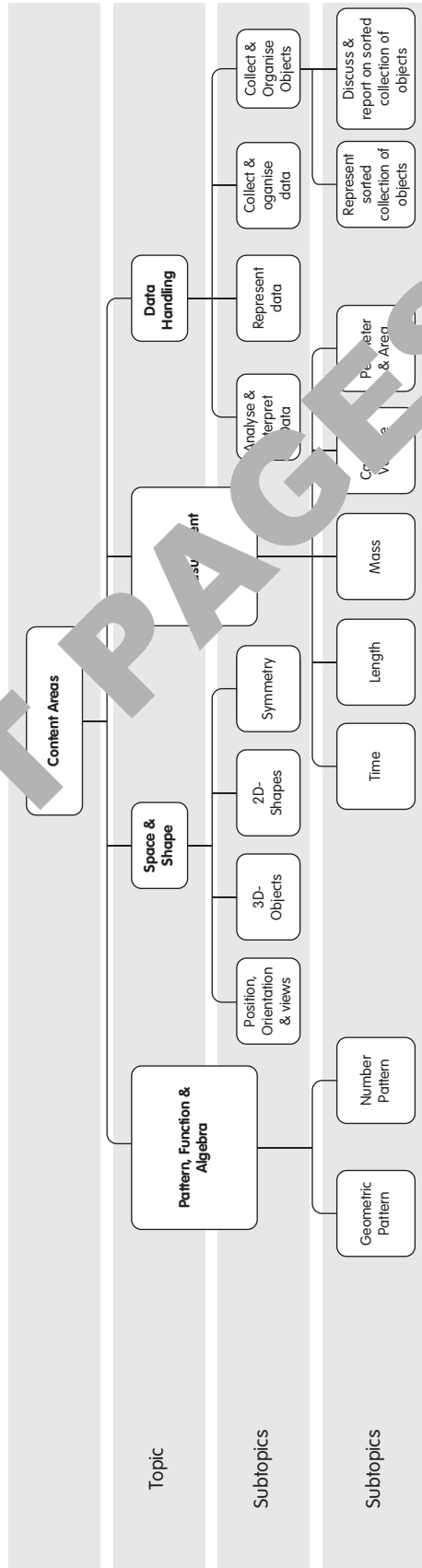
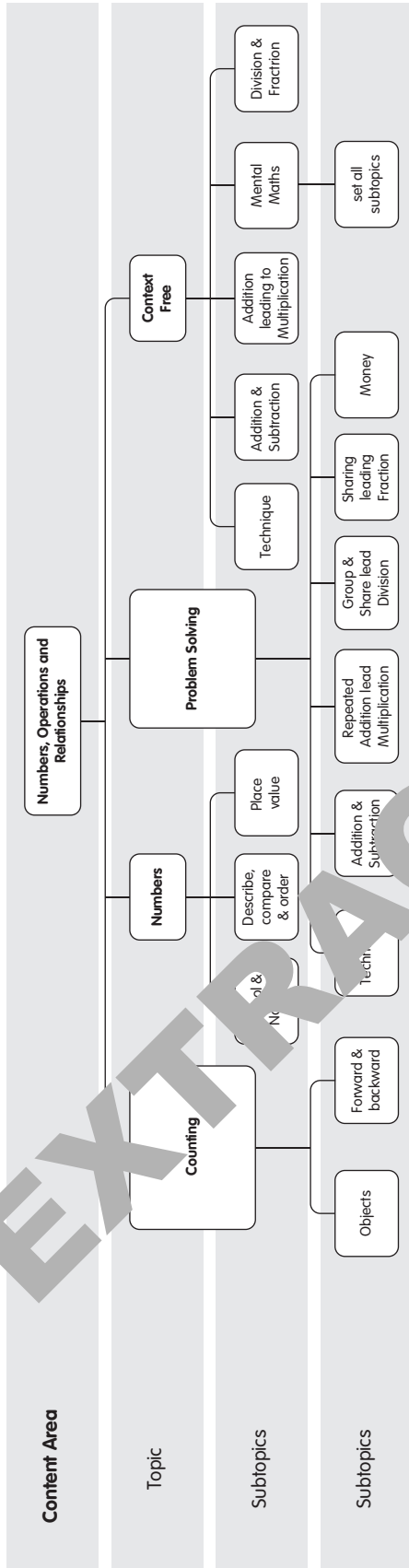
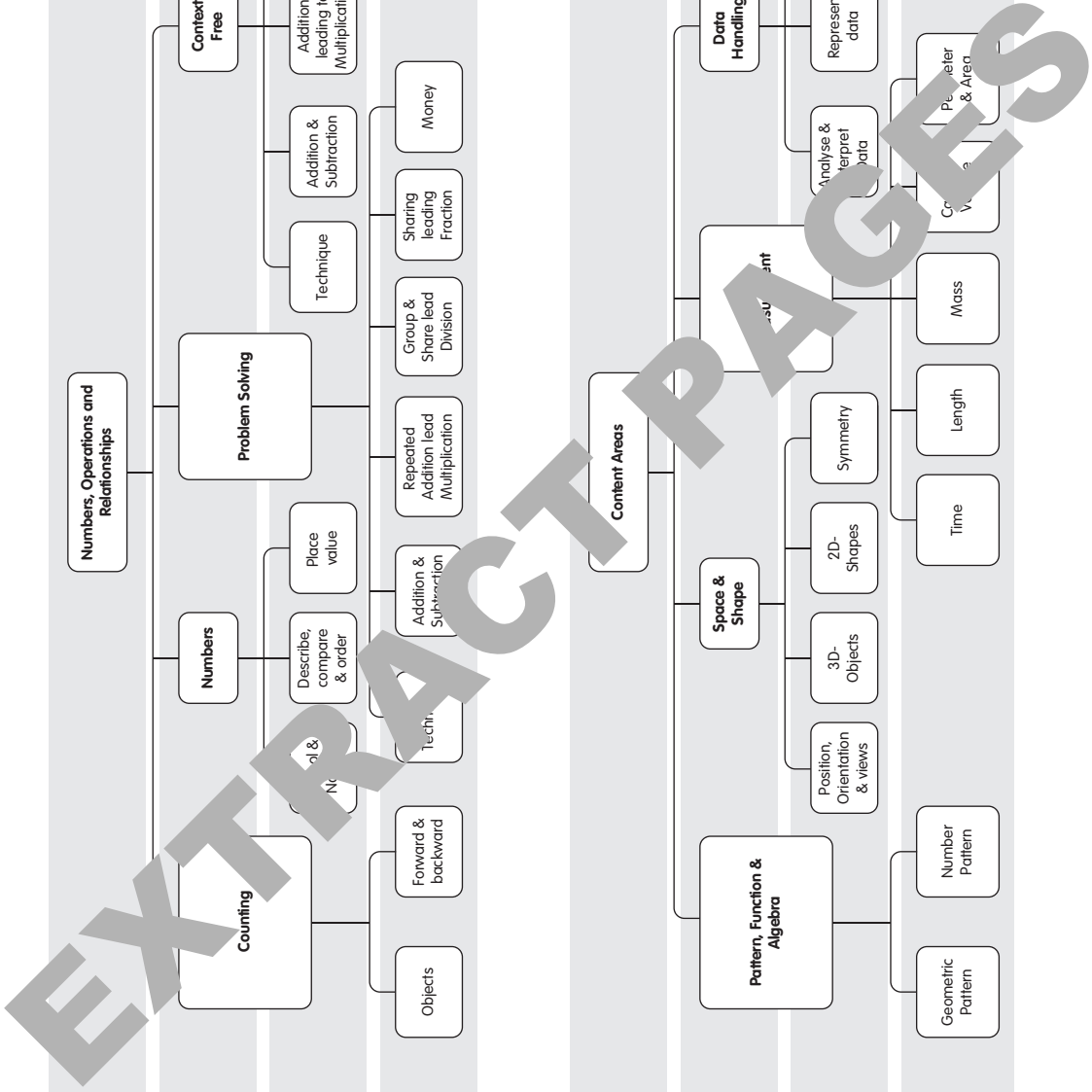
Shape and Space (Geometry)	Measurement
<p>During this phase, learners work with both number patterns (like skip counting) and geometric patterns (like visual and pictorial patterns). Learners should be given chances to replicate, add to, describe, and make patterns with real things, drawings, and symbols.</p> <p>When learners copy patterns, they can figure out what the pattern's rule or structure is. When learners extend patterns, they can use what they know about the pattern rule and check their understanding.</p> <p>Learners should be encouraged to use the right arithmetic words to talk about patterns. This will help them learn new math words and improve their communication skills. It is important to find and describe the rule that governs the pattern, as this is the basis for algebraic thinking. To help learners learn about numbers and improve their operational sense, they should use number patterns.</p> <p>Geometric patterns should comprise sequences of lines, shapes, and objects, as well as patterns that can be seen in the world around us. These activities let learners use and build on what they already know about space and shape.</p>	<p>During this period, learners learn about measurement by working with real items and forms. They look into and talk about the qualities of length, volume, mass, area, and time. Learners should be given chances to use informal units like hands, paces, and containers to measure the properties of things and shapes when it makes sense to do so.</p> <p>Learners use the right comparative vocabulary (such as taller/shorter, longer/shorter, heavier/lighter, fuller/emptier) to compare and order different amounts.</p> <p>Learners learn about standard units of measurement such as grams, kilograms, millilitres, litres, centimetres, and meters. They also start to employ these units in the right situations.</p> <p>Activities that have to do with time should be planned out carefully. When teaching formal concepts like reading time, teachers should help learners grasp how time passes via their daily routines and experiences.</p>
Handling Data	
<p>In this stage, learners do things like sorting, showing, and talking about groups of things. These steps help learners learn how to handle data and get them used to the data handling cycle.</p> <p>Learners should be given chances to classify groups of real things based on certain criteria or their own choices. For instance, learners can sort things by colour, type, size, or other things they can see using different materials, such as counters, bottle caps, and bead bags.</p> <p>Learners should use drawing and other simple visual aids to show how they sorted their data. This lets learners write down and share what they found.</p> <p>Learners should be taught to explain and interpret their representations by answering questions about the groups they classified. This helps people learn how to think and talk about things.</p> <p>Once learners have gone through the whole data handling process (sorting, representing, and describing), they should learn how to analyse the representations they have made. By the end of Term 4, learners should be able to look at at least two photographs and answer questions about them.</p>	

Recommended number of lessons per content area

Content area	Topic	Number of lessons				
		Term 1	Term 2	Term 3	Term 4	Total
Numbers, Operations & Relationships	All topics	26	22	19	27	94
Patterns, Functions & Algebra	Number patterns	3	3	3	3	12
	Geometric patterns	1	1	1	1	4
Space & Shape (Geometry)	2D shapes	2		2		4
	3D objects		3	3	1	7
	Position, orientation and views		2	3		5
	Symmetry		2		1	3
Measurement	Time	3	2		2	10
	Length		2	2		4
	Mass				1	3
	Capacity/Volume	2			1	3
	Perimeter			1		1
	Area				2	2
Data Handling	Whole data cycle	3		3		6
	Sections of data		1		1	2
Lessons		40	40	40	40	160

Content and concept mapping





Term 1

Term 1 Check-up test

LB page 3

This baseline assessment is aimed at testing learners' mathematical skills and understanding.

Key concepts

- Counting forwards and backwards
- number recognition and symbols
- addition and subtraction
- 3D objects
- Time
- Problem solving

1. Counting forwards and backwards	2. Number recognition and writing symbols
a. 17; 18; 19; 20; 21; 22 b. 54; 53; 52; 51; 50; 49 c. 95; 96; 97; 98; 99; 100 d. 180; 179; 178; 177; 176; 175 e. 146; 147; 148 ; 149; 150; 151	a. fifty-nine → 53 seventy-eight → 78 ninety-two → 92 15
3. Basic arithmetic (addition and subtraction up to 20)	4. 3D Objects
a. 12 oranges + 5 more = 17 b. $15 - 6 =$ 9 c. 18 sweets - 7 sweets = 11	A – cylinder B – cube
5. Time	6. Problem solving
Learners' own answers. Answers must portray some level of understanding from the given instruction i.e. today is the day the test is taken so all dates must be in relation to that.	a. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday b. Friday c. $R15 - R9 =$ R6 d. $20 - 7 =$ 13 seats available

Let's begin our counting journey!

Counting forwards and backwards in 1s

LB page 5

New words/terms

Patterns: A repeated arrangement of numbers, shapes and colours
More: when a quantity or number is bigger or larger than the second number

Learning objectives	Materials
<p>Count forwards and backwards in 1s from any number between 1-180.</p> <p>Ensure that learners know how to pronounce three-digit numbers and address misconceptions, such as saying "one-two-one" for 121 instead of "one hundred and twenty-one."</p>	<p>Counters</p> <p>Cards</p> <p>Any objects that learners can count when introducing the topic</p>
Introduction	Example
<p>Help learners practise counting and avoid misconceptions.</p> <p>Start with a simple activity involving number cards.</p> <p>Consider a set of cards numbered from 1 to 180.</p>	<p>Use an example that introduces the topic, e.g. ask learners to count the toys on the shelf on page 2 of the Learner's Book.</p> <p>Show a number card for 118. Ask the learners to count forwards in 1s from 118 to 125. Then, ask them to count backwards from 125 to 118.</p> <p>Reinforce the correct pronunciation of numbers and help them practise counting forwards and backwards.</p>
Teaching guidelines	Answers to activities (LB page 5)
<p>Discussion: Discuss the role of numbers and counting in daily life. Ask learners to share examples from their experiences where they had to count objects or needed numbers around them.</p> <p>Ask: Give an example of when you counted objects. (e.g. I counted 12 apples in a bag.)</p> <p>Where have you seen numbers on your way to school? (e.g. I saw numbers on a bus route sign or a house number.)</p> <p>Have you noticed distance signs or traffic signs showing speed limits along the roads? Discuss how these signs display numbers (e.g. 60 km/h or 3 km to school).</p> <p>What animals have you seen on your way to school, and how many were there? (e.g. I saw 5 dogs and 2 cows.)</p>	<p>Activity 1:</p> <ol style="list-style-type: none"> 1; 2; 3; 4; 5; 6; 7; 8; 9 10; 11; 12; 13; 14; 15; 16; 17; 18 38; 37; 36; 35; 34; 33; 32; 31; 30 173; 174; 175; 176; 177; 178; 179; 180 47; 48; 49; 50; 51; 52; 53; 54

<p>Intervention</p> <p>Pair work: Encourage learners to work in pairs when counting objects or using counters. This promotes collaboration, helps them learn from each other, and keeps them engaged.</p> <p>Repetition and reinforcement: Repeated practice of counting forwards and backwards helps reinforce number sense and pronunciation. Incorporate counting activities regularly in daily routines.</p>	<p>Extension</p> <p>Advanced activities: Provide additional counting challenges for advanced learners, such as counting in 2s or 5s.</p> <p>Challenge Box: Set up a Challenge Box with extra activities. Reward learners who complete these correctly, promoting a growth mindset.</p>
<p>Independent practice</p> <p>Counting practice on the mat: Work with learners, counting forwards and backwards in 1s using counters. Have them practise counting out loud and comparing numbers that are 1 more or 1 less than a given number.</p> <p>Oral counting: Ask learners to count aloud forwards and backwards from any given number to reinforce number sequences and pronunciation.</p>	<p>Conclusion/Reflection</p> <p>Group reflection: After the activities, ask learners to discuss their experiences. Ask questions like, “What did you find easy or difficult about counting today?” and “How did it help to count in different ways?”</p> <p>Feedback and correction: Address any misconceptions observed during the counting exercises, particularly regarding the association of three-digit numbers.</p>

Counting forwards and backwards in 2s, 3s and 4s

LB pages 6–8

New words/terms	<p>Multiple: Introduce this term to explain the concept of counting in groups (e.g. 2s, 3s, 5s)</p> <p>Number line: A visual aid to help learners see the sequence of numbers and the patterns when counting in intervals.</p>
------------------------	--

<p>Learning objectives</p> <p>Learners build on their ability to count forwards and backwards in 1s by learning to count in 2s, 3s and 4s from any number from 0 to 100.</p> <p>This includes correct pronunciation of all numbers and identifying patterns in sequences.</p>	<p>Materials</p> <p>Counters</p> <p>Any objects that learners can count when introducing the topic.</p> <p>Beads on a string which learners can count in 2s, 3s and 4s</p>
<p>Introduction</p> <p>Use the number line on page 6 of the Learner’s Book to help learners count in 2s, 3s and 4s.</p> <p>Explain that, just like counting in 1s, they will now skip numbers according to the sequence they are counting in (e.g. skip every second number for counting in 2s).</p>	<p>Example</p> <p>Use the beads arranged in a line on some string.</p> <p>Learners count the beads in 2s (e.g. 2, 4, 6, 8, 10...), then in 3s (e.g. 3, 6, 9, 12...), and finally in 4s (e.g. 4, 8, 12, 16...).</p> <p>Encourage learners to use the number line in their book to visualise the jumps they make when counting.</p>

Teaching guidelines	Answers to activity 2 (LB page 8)
<p>Introduce counting in groups: Explain how to count in groups of 2s, 3s and 4s.</p> <p>Introduce the concept of a multiple (e.g. multiples of 2 are 2, 4, 6, 8, 10...).</p> <p>Class counting: Lead the class in counting out loud in 2s, 3s and 4s.</p> <p>Pause periodically to ask individual learners to say the next number in the sequence, helping reinforce the concept.</p>	<p>1. a. 2; 4; 6; 8; 10; 12; 14; 16; 18 b. 22; 24; 26; 28; 30; 32; 34; 36; 38 c. 76; 74; 72; 70; 68; 66; 64; 62; 60</p> <p>2. a. 1; 4; 7; 10; 13; 16; 19; 22; 25 b. 18; 21; 24; 27; 30; 33; 36; 39 c. 65; 62; 59; 56; 53; 50; 47; 44</p> <p>3. a. 26; 30; 34; 38; 42; 46; 50; 54 b. 14; 18; 22; 26; 30; 34; 38; 42 c. 79; 75; 71; 67; 63; 59; 55; 51</p>
<p>Intervention</p> <p>Encourage learners to work in pairs to count objects or counters in groups of 2s, 3s and 4s.</p> <p>Have them compare results and discuss which method of counting is quicker and why.</p> <p>This promotes understanding of patterns and efficiency in counting.</p>	<p>Extension</p> <p>For those who grasp the concepts quickly, provide additional counting challenges similar to those already completed.</p> <p>Create a Challenge Box in the classroom with extra activities involving extra problems for early finishers.</p> <p>Offer small rewards for correct completion to encourage engagement and mastery.</p>
<p>Independent practice</p>	<p>Conclusion/Reflection</p>
<p>Counting practice on the mat: Have learners sit on the mat and practise counting forwards and backwards in 2s, 3s and 4s using counters.</p> <p>Conduct exercises within different ranges to reinforce the sequences (e.g. counting in 3s from 3 to 30 and back).</p> <p>Comparing numbers: Engage learners in activities that involve comparing numbers (e.g. I have the number 4. What is 2 more than 4? What is 2 less than 4).</p> <p>This helps them understand increments and decrements within these sequences.</p> <p>Oral counting practice: Ask learners to count out loud, both forwards and backwards, from any given number in 2s, 3s and 4s to build confidence and fluency.</p>	<p>Ensure that learners practise counting in 1s, 2s, 3s and 4s as part of their daily homework.</p> <p>This regular practice will help them become fluent in recognising patterns, understanding sequences and confidently counting forwards and backwards.</p>

Counting forwards and backwards in 5s, 10s and 100s

LB pages 9–10

New words/terms

Grouping: Discuss how grouping items into sets makes counting faster and easier.

Counters: Use physical counters or objects to demonstrate counting in intervals

Learning objectives	Materials
<p>Learners build on their ability to count forwards and backwards in 1s, 2s, 3s and 4s by learning to count in 5s, 10s and 100s from any number from 0 to 180.</p> <p>This includes practising correct pronunciation of all numbers, recognising patterns in sequences, and understanding how numbers change when counting in different intervals (multiples).</p> <p>These skills help learners develop a comprehensive understanding of counting, sequencing and number patterns in various contexts.</p>	<p>Counters</p> <p>Example</p> <p>Ask learners to count classroom objects, such as desks or posters, in different intervals (e.g., 2s, 3s, 5s).</p> <p>For example, count the number of desks in 2s to quickly determine the total. Refer to the working examples in the LB on page 9 and 10.</p> <p>Address misconceptions by clarifying that counting in multiples helps us group items, which is different from counting each item individually.</p>
Introduction	Answers to activity 3 (LB page 10)
<p>Explain that counting helps us keep track of things in our daily life, like how many steps we take or how many items we have.</p> <p>Discuss how counting in different intervals (1s, 2s, 3s and 5s, helps us see patterns and make counting faster.</p>	<p>1. a. 0; 5; 10; 15; 20; 25; 30; 35 b. 11; 16; 21; 26; 31; 36; 41; 46; 51</p> <p>2. a. 0; 10; 20; 30; 40; 50; 60; 70 b. 11; 21; 31; 41; 51; 61; 71; 81</p> <p>3. a. 100; 200; 300; 400; 500 b. 120; 220; 320; 420</p>
Teaching guidelines	Independent practice
<p>Comparing numbers: Work with learners to compare numbers that are 5 or 10 more and 5 or 10 less than a given number. For example, if the number is 15, determine what 5 more or 10 less would be.</p> <p>Oral counting practice: Have learners count out loud in 5s and 10s from a given number. Encourage them to practise both forwards and backwards.</p>	<p>Counting practice on the mat: Learners practise counting forwards and backwards in 5s, 10s and 100s. Use counters or visual aids to help them grasp these intervals (multiple counting).</p> <p>Counting exercises: Give additional exercises within the relevant ranges, focusing on counting in 5s, 10s and 100s. Ensure learners practise both forwards and backwards.</p> <p>Worksheet completion: Provide a worksheet with examples similar to those practised in class (e.g. counting in 5s and 10s). Let learners complete this individually or in pairs.</p>

Intervention	Conclusion/Reflection
<p>Encourage learners to work in pairs to count objects or counters in groups of 5s and compare their results.</p> <p>Discuss how counting in 5s or 10s can be quicker than counting in 1s and explore why this is the case.</p> <p>Offer one-on-one assistance at the teacher's desk and reward their effort to encourage improvement.</p> <p>Count together as a class forwards and backwards in 5s and 10s from various numbers between 1 and 180. Repeat this about 6 times to reinforce the skill.</p>	<p>Daily practice: Ensure that learners engage in daily homework activities that involve counting in 5s, 10s, and 100s to reinforce their skills and build fluency.</p> <p>Reinforcement: Summarise the lesson by reviewing key concepts of counting forwards and backwards in different multiples, comparing numbers, and the importance of pattern recognition.</p> <p>Encouragement: Highlight the progress made in counting skills and encourage continuous practice both in class and at home to solidify their understanding.</p>



Playing with opposite operations

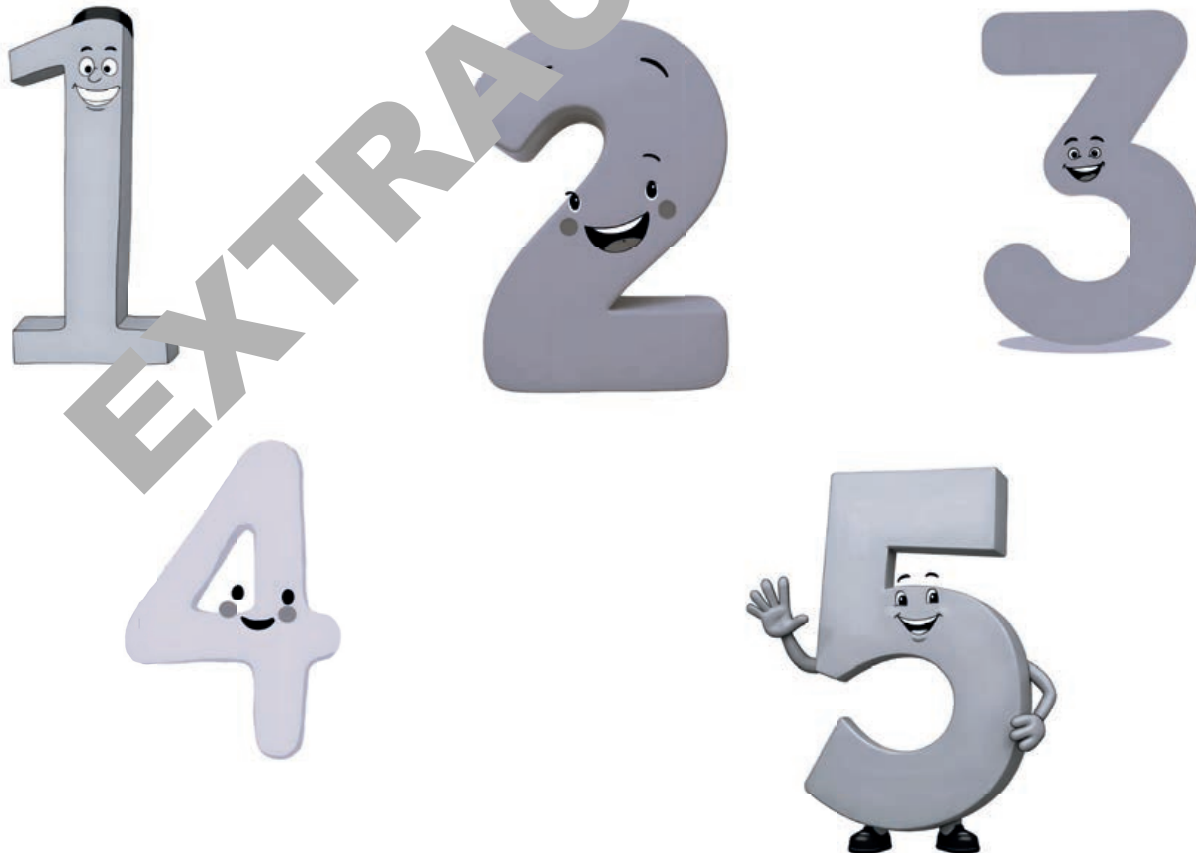
The relationship between addition (+) and subtraction (-)/More than and less than

LB pages 11–13

New words/terms	<p>Inverse: An operation that reverses the order (e.g. addition and subtraction are inverses)</p> <p>Less: A value that is smaller than another value</p> <p>More: A value that is larger than another value</p>
------------------------	---

Learning objectives	Materials														
<p>Have learners count forwards and backwards in 10s, 5s, 2s, 3s, and 4s from any multiple of these numbers within the range of 0-200 and in 100s up to at least 500.</p> <p>Relationship Between + and -: Emphasise how addition and subtraction are related by showing how one operation can reverse the effect of the other.</p> <p>Comparison Terms: Practice using terms like more than and less than to compare numbers.</p>	<p>Small white boards</p> <p>piece of paper</p> <p>Charts or number lines showing patterns of counting in 5s and 10s</p>														
Introduction	Example														
<p>Explain that addition and subtraction help us understand how numbers change, similar to how counting in 10s, 5s, 2s and other intervals helps us see number patterns.</p> <p>These operations are like best friends in that they work together to show how numbers move forwards and backwards.</p>	<p>Refer to page 11 in LB – Demonstrate the connection: $45 + 5 = 50$ (adding in 5s) $50 - 5 = 45$ (subtracting in 5s)</p> <p>Show on charts or number lines counting sequences in 10s and 5s to reinforce the relationship and practise counting forwards and backwards.</p>														
Teaching guidelines	Answers to activities (LB page 12–13)														
<p>Have the class count forwards and backwards in 5s and 10s from various starting points within the range of 1 to 180.</p> <p>Repeat this practice at least 6 times to strengthen their counting skills and reinforce the relationship between addition and subtraction.</p> <p>Monitor progress: Record learners' progress and identify those</p>	<p>Activity 4</p> <p>1.</p> <table style="width: 100%;"> <tr> <td style="text-align: center;">Operation</td> <td style="text-align: center;">Inverse operation</td> </tr> <tr> <td>a. $5 + 1 = 6$</td> <td>b. $6 - 1 = 5$</td> </tr> <tr> <td>c. $8 + 2 = 10$</td> <td>d. $10 - 2 = 8$</td> </tr> <tr> <td>e. $10 - 3 = 7$</td> <td>f. $3 + 7 = 10$</td> </tr> <tr> <td>g. $25 + 30 = 55$</td> <td>h. $55 - 30 = 25$</td> </tr> <tr> <td>i. $87 + 13 = 100$</td> <td>j. $100 - 87 = 13$</td> </tr> <tr> <td>k. $195 - 60 = 135$</td> <td>l. $135 + 60 = 195$</td> </tr> </table>	Operation	Inverse operation	a. $5 + 1 = 6$	b. $6 - 1 = 5$	c. $8 + 2 = 10$	d. $10 - 2 = 8$	e. $10 - 3 = 7$	f. $3 + 7 = 10$	g. $25 + 30 = 55$	h. $55 - 30 = 25$	i. $87 + 13 = 100$	j. $100 - 87 = 13$	k. $195 - 60 = 135$	l. $135 + 60 = 195$
Operation	Inverse operation														
a. $5 + 1 = 6$	b. $6 - 1 = 5$														
c. $8 + 2 = 10$	d. $10 - 2 = 8$														
e. $10 - 3 = 7$	f. $3 + 7 = 10$														
g. $25 + 30 = 55$	h. $55 - 30 = 25$														
i. $87 + 13 = 100$	j. $100 - 87 = 13$														
k. $195 - 60 = 135$	l. $135 + 60 = 195$														

Intervention	
<p>Pair work: Divide learners into pairs. Each learner writes an addition problem similar to the one demonstrated in the introduction.</p> <p>They then swap worksheets with their partner and solve the inverse operation (subtraction).</p> <p>This activity reinforces the relationship between addition and subtraction.</p> <p>Independent practice</p> <p>Mat work: Work directly with learners who find inverse operations challenging. Use the mat for focused practice.</p> <p>Worksheet practice: Provide worksheets with examples of inverse operations (addition and subtraction). Support learners as they complete these examples.</p>	<p>2. a. 6 is more than 5 b. 10 is more than 8 c. 3 is less than 10 d. 55 is more than 30 e. 100 is more than 13 f. 135 is less than 195</p> <p>Activity 5</p> <p>1. a. 124 is more than 121 b. 142 is less than 146 c. 155 is more than 153 d. 164 is less than 169 e. 182 is more than 172 f. 196 is less than 205</p> <p>Time to explore:</p> <p>a. $42 + 16 > 31 + 27$ b. $50 - 15 < 15 + 15$ c. $80 + 0 < 70 + 10$ d. $37 - 17 < 19 + 30$ e. $95 + 3 > 100 - 3$ f. $71 - 16 < 49 + 7$</p>
Conclusion/Reflection	
<ul style="list-style-type: none"> • Reinforce the importance of regular practice with counting in different intervals and using inverse operations. • Encourage learners to apply these skills daily in their homework to solidify their understanding and improve fluency. 	



Climb up and slide down with numbers!

Ascending and descending order

LB pages 14–15

New words/terms	<p>Ascending order: Arranging the numbers from smallest to greatest or smallest to biggest.</p> <p>Descending order: Arranging the numbers from largest to smallest or from biggest to smallest.</p>
------------------------	--

Learning objectives	Materials
<p>Learners will count forwards and backwards in any multiple (2s, 3s, 4s, 5s and 10s) within the range of 0 to 200 and in 100s up to at least 500.</p> <p>We will continue to use the relationship between addition and subtraction, while recognising terms like more than and less than, and practise ordering numbers in both ascending and descending order.</p>	<p>Number chart</p> <p>Number Line</p> <p>Paper or whiteboard</p>
Introduction	Example
<p>Write numbers on the board in random order:</p> <p>45, 12, 78, 34, 89, 23, 67, 56</p> <p>Explain that numbers in random order can be confusing.</p> <p>Ask, "Which number is the smallest?" and "Which is the largest?"</p> <p>Then ask learners to help arrange these numbers from smallest to greatest to see how organising numbers makes them more understandable.</p>	<p>List the numbers:</p> <p>7, 20, 22, 37, 51, 56, 75, 76, 85, 90</p> <p>Write "ascending order" and "descending order" on the board.</p> <p>Discuss with learners what these terms mean. Ensure they understand that ascending means counting from smallest to largest and descending means from largest to smallest.</p>



Teaching guidelines	Answers to activity (LB page 15)
<p>Address misconceptions: Confusing ‘ascending’ and ‘descending’: Use visual aids like arrows (up for ascending, down for descending) and practise ordering numbers both ways.</p> <p>Skipping numbers when counting in multiples: Provide number lines and use counters to visualise counting in multiples (e.g. 2s, 5s, 10s). Practise counting aloud.</p> <p>Understanding ‘more than’ and ‘less than’: Use number lines and physical objects to demonstrate moving right for ‘more than’ and left for ‘less than’.</p> <p>Clarify misconceptions: Ascending order: Write numbers on the board one by one, involving learners in identifying the next number.</p> <p>Descending order: Rearrange the same numbers from largest to smallest, reinforcing the concept of going down in value.</p> <p>Using multiples: Explain how to count in multiples (2s, 5s, 10s). Start at a number, say 10, and count up by 10s (10, 20, 30...). Repeat for descending (50, 40, 30...).</p> <p>Common errors: Point out that skipping numbers or adding extra ones breaks the pattern. Use number lines to show correct sequences.</p> <p>Use phrases like, “If 23 is less than 45, what is 45 more than?” Visual aids can help learners see these relationships on a number line.</p> <p>Practise together: Have learners count aloud in multiples of 2, 5 and 10 from different starting points. Check for correct counting and correct mistakes immediately.</p>	<p>Activity 6 (Counting forward in 1s) 1. a. 173; 174; 175; 176; 177; 178; 179; 180</p> <p>(Counting forward in 2s) b. 10; 12; 14; 16; 18; 20; 22; 24; 26</p> <p>(Counting forwards in 3s) c. 56; 59; 62; 65; 68; 71; 74; 77</p> <p>(Counting forwards in 4s) d. 10; 14; 18; 22; 26; 30; 34; 38</p> <p>(Counting forwards in 10s) e. 24; 34; 44; 54; 64</p> <p>(Counting forwards in 100s) f. 120; 220; 320; 420</p> <p>2. a. 160; 159; 158; 157; 156; 155</p> <p>(Counting backwards in 1s) b. 44; 42; 40; 38; 36; 34; 32; 30; 28</p> <p>(Counting backwards in 2s) c. 59; 66; 63; 60; 57; 54; 51; 48</p> <p>(Counting backwards in 3s) d. 48; 44; 40; 36; 32; 28; 24; 20</p> <p>(Counting backwards in 4s) e. 53; 48; 43; 38; 33</p> <p>(Counting backwards in 5s) f. 450; 350; 250; 150</p> <p>(Counting backwards in 100s)</p> <p>3. 80; 85; 90; 95; 100 4. 100; 98; 96; 94; 92</p>
<p>Intervention</p> <p>Encourage learners to use number lines or visual aids if they struggle with ordering numbers.</p> <p>Emphasise the relationships between numbers and the importance of understanding terms like more than and less than in both ascending and descending contexts.</p> <p>Learners who need more assistance with this topic can be referred to the following YouTube video. https://www.youtube.com/watch?v=CpcCyq9aBQQ It can also be shared with parents.</p>	<p>Extension</p> <p>For learners who grasp the concept quickly, introduce a challenge where they must identify “1 more than” or “1 less than” given numbers in their sets.</p>

Independent practice

After discussing the concept of ascending and descending order, ask learners to call out random numbers. Prompt them to arrange these numbers in either ascending or descending order as a group activity.

Group activity:

Step 1: Split learners into groups (pairs). Provide each group (or pair) with a small whiteboard or a piece of paper.

Step 2: Each learner writes a set of random numbers from 0 to 200. They should include multiples of 2s, 5s, 10s, 3s, and 4s to reinforce counting skills.

Step 3: Learners swap their whiteboards/papers with their partners. The partner must then arrange the given set of numbers in ascending order (from smallest to largest).

Step 4: Repeat the process, but this time, learners will arrange the numbers in descending order (from largest to smallest).

To reinforce counting in multiples and arranging numbers in ascending and descending order, ensure that learners practise daily through homework activities.

Assign similar exercises where they practise counting forwards and backwards in 2s, 3s, 4s, 5s, 10s and 100s from random numbers.

Include problems that require them to identify "more than" and "less than" and to arrange numbers both in ascending and descending order.

Conclusion/Reflection

- Regular practice will help solidify their understanding and improve their number sense and sequencing skills. Encourage them to use tools like number lines and visual aids to support their learning.
- Encourage learners to check each other's work to ensure accuracy.
- Review any mistakes as a class and discuss why the correct order is important.

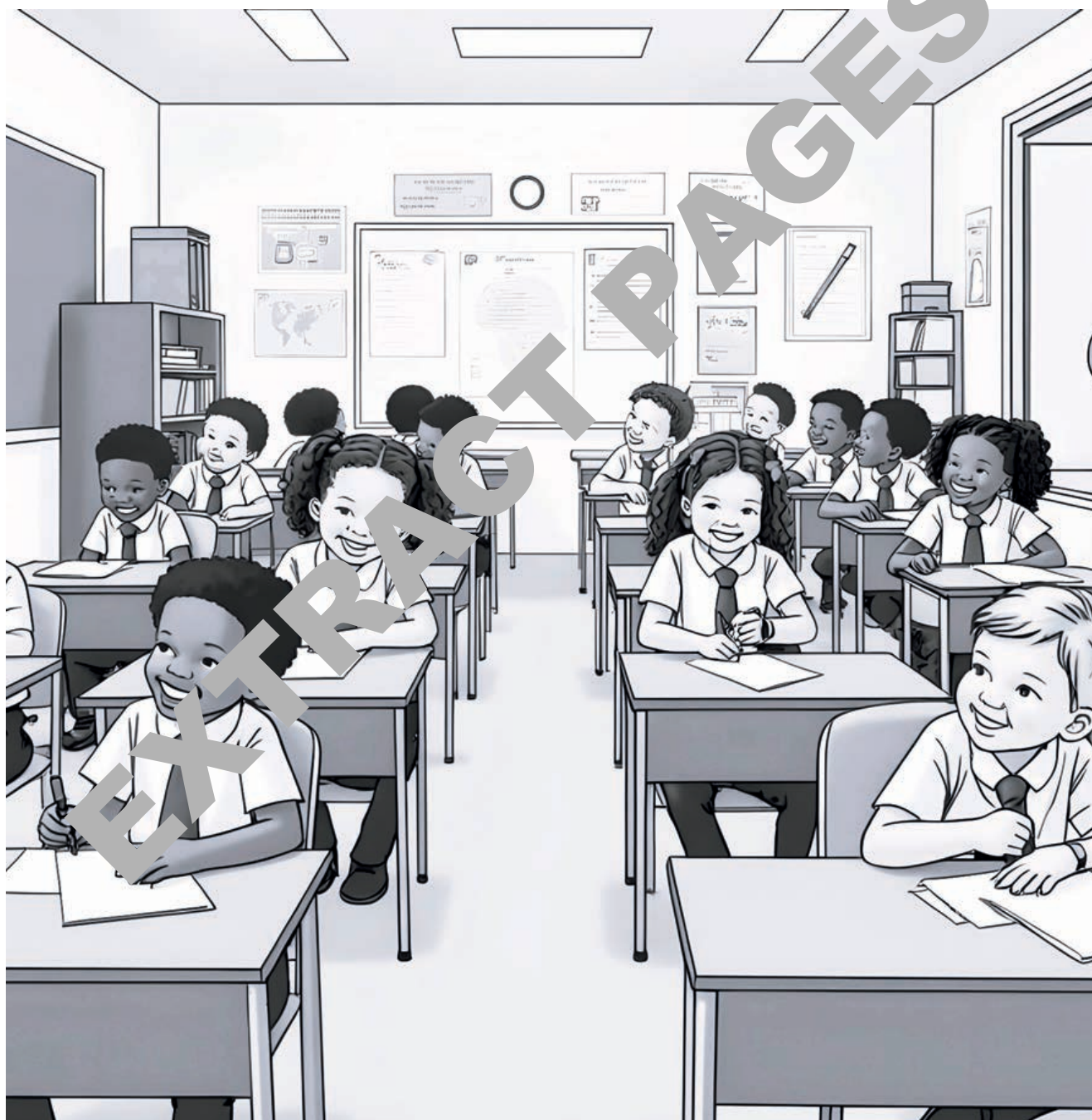
Counting forwards and backwards in 2s, 3s, 4s, 5s and 10s up to 200

LB pages 16–17

Learning objectives	Materials
<p>Learners will develop fluency in counting forwards and backwards in multiples of 2s, 3s, 4s, 5s and 10s within the range of 0 to 500.</p> <p>This will include practising both ascending and descending order, understanding the concepts of more than and less than, and recognising patterns in number sequences.</p> <p>Learners will also identify, and correct misconceptions related to the order of numbers and practise inverse operations to reinforce their understanding of addition and subtraction relationships.</p>	<p>Number chart/number line.</p> <p>Small whiteboards/paper</p> <p>Markers</p>

Introduction	Example
<p>Begin by recapping the key concepts covered in previous lessons, such as counting forwards and backwards in multiples (2s, 3s, 4s, 5s and 10s) within the number range of 0 to 500.</p> <p>Emphasise the importance of understanding ascending and descending order, recognising patterns, and using inverse operations (addition and subtraction).</p> <p>Reinforce terms like more than and less than in the context of number sequences.</p>	<p>Counting in multiples: Ask learners to stand up. Call out a number, and have them count forwards in multiples (2s, 3s, 4s, 5s or 10s) from that number up to 500.</p> <p>Then, reverse the counting, moving backwards. For example, if you call out 15, learners count by 5s (20, 25, 30...) up to 500, then back down.</p> <p>Ordering practice: Write a random set of numbers on the board (16, 45, 80, 22, 100). Ask learners to arrange them in ascending and then descending order.</p> <p>Discuss how understanding multiples helps in quickly identifying where numbers fit in order sequences.</p>
Teaching guidelines	Answers to activities (page 7)
<p>Introduction recap: Review counting multiples, ordering numbers and inverse operations.</p> <p>Interactive activity: Let learners come to the board to write their own addition and subtraction facts.</p> <p>Partner work: Learners create 4 addition and subtraction problems on whiteboards/paper, exchange with partners, and solve the problems.</p> <p>Partner activity: In pairs, learners write a series of numbers in the range 0-500 on their small whiteboards and swap with a partner. They must then arrange the numbers in ascending and descending order, highlighting the multiples they see (e.g., 10s, 5s).</p>	<p>Activity 7</p> <ol style="list-style-type: none"> <p>a. 190; 192; 194; 196; 198; 200</p> <p>b. 200; 196; 194; 192; 190</p> <p>c. 98; 96; 94; 92; 90; 88; 86; 83</p> <p>d. 184; 182; 180; 178; 176; 174; 172; 170; 168; 166; 164; 162; 160; 158; 156; 154; 152; 150; 148; 146; 144; 142; 140; 138; 136; 134; 132; 130; 128; 126; 124; 122; 120; 118; 116; 114; 112; 110; 108; 106; 104; 102; 100; 98; 96; 94; 92; 90; 88; 86; 84; 82; 80; 78; 76; 74; 72; 70; 68; 66; 64; 62; 60; 58; 56; 54; 52; 50; 48; 46; 44; 42; 40; 38; 36; 34; 32; 30; 28; 26; 24; 22; 20; 18; 16; 14; 12; 10; 8; 6; 4; 2</p> <p>e. 175; 180; 185; 190; 195; 200</p> <p>f. 190; 390; 290; 190; 90</p> <p>a. 75; 180; 185; 190; 195; 200 (Counting in 5s)</p> <p>b. 185; 188; 191; 194; 197; 200 (Counting in 3s)</p> <p>c. 90; 92; 94; 96; 98; 100 (Counting in 2s)</p> <p>d. 100; 200; 300; 400; 500 (Counting in 100s)</p>
Intervention	Extension
<p>Encourage learners to use the number chart or number line to assist with counting and ordering.</p> <p>Rotate pairs regularly to provide diverse interaction and problem-solving opportunities.</p> <p>Provide extra practice with counting sequences using number charts or interactive counting games.</p> <p>Offer one-on-one time to address specific challenges, such as recognising patterns in multiples or applying addition and subtraction in different contexts.</p>	<p>Learners can complete a Maths challenge from the Challenge Box that involves counting in various multiples and solving more complex problems.</p> <p>Reward their achievements to encourage continued engagement.</p>

Independent practice	Conclusion/Reflection
<p>Work on the mat or at your desk with pairs of learners who need more practise consolidating counting forwards and backwards in 2s, 3s, 4s, 5s, and 10s up to 500.</p> <p>Use an abacus to help learners visualise and count in groups, reinforcing their understanding of multiples and sequence order.</p>	<p>This lesson consolidated learners' ability to count forwards and backwards in multiples and order numbers effectively.</p> <p>The use of learning aids and hands-on activities supported the achievement of learning outcomes.</p> <p>The experience gained will inform future lesson planning.</p>



Train your maths brain

Topic: Mental maths

LB pages 18–21

Learning objectives	Intervention
<p>Order a given set of numbers.</p> <p>Compare numbers up to 150 to identify which is 1, 2, 3, 4, 5 or 10 more or less.</p> <p>Use the relationship between addition and subtraction.</p> <p>Rapidly recall addition and subtraction facts up to 15.</p> <p>Add or subtract multiples of 10 from 0-100.</p>	<p>Every child needs a champion! Always give your learners positive feedback even if they are battling with a concept – positive reinforcement will encourage learners to keep on trying.</p> <p>bonds of 15 flashcards number lines number charts abacus</p>
Teaching guidelines	Answers to activities (LB pages 20–21)
<p>Time allocation for Mental Maths: 20 minutes</p> <p>Quick mental daily starters: Engage learners in a brisk start by discussing the day, date, number of learners present/absent, and the weather.</p> <p>Use quick mental questions like: “What is the number after 8?” “What is 2 more or less than 8?” “Solve $4 + 2$” “What is $5 - 2$?” and “Solve $6 + 2$.”</p> <p>Mental Maths activities: Conduct daily Mental Maths activities focusing on ordering numbers, comparing values, and applying addition and subtraction facts.</p> <p>Integrate exercises that include counting in multiples (2s, 3s, 4s, 5s, 10s) and recognising patterns.</p> <p>Use number lines, number charts and abacus to reinforce understanding.</p> <p>Suggested Mental Maths reward system: Develop a point system to motivate learners. Award points for accurate answers and consistent participation.</p> <p>Offer rewards for specific milestones or demonstrating improvement, such as small certificates, stickers or classroom privileges.</p>	<p>Activity 1</p> <p>1. 52; 56; 60; 64</p> <p>2. 150; 145; 140; 135</p> <p>3. a. 84 b. 78 c. 145 d. 132</p> <p>4. a. $68 + 28 = 96$ b. $105 + 76 = 181$ c. $340 + 135 = 375$ d. $387 + 55 = 442$</p> <p>5. a. $140 + 60 = 200$ b. $140 - 20 = 120$ c. 5</p> <p>6. a. 8 b. 25 c. 19 d. 40</p> <p>Activity 2</p> <p>1. 180</p> <p>2. b. 200 c. 100 d. 150 e. 200</p> <p>2. a. 125 b. 80 c. 140 d. 120 e. 140</p> <p>3. a. 90 b. 120 c. 150 d. 180 e. 220</p> <p>4. a. 50 b. 75 c. 40 d. 60 e. 100</p>

Let's count together

LB pages 22–23

New words/terms	<p>Counting: The act of determining the quantity or the total number of objects in a set or a group</p> <p>Estimate: To make a rough calculation or educated guess about the quantity or total number</p> <p>Reliably: To count accurately and consistently</p>
------------------------	--

Learning Objective	Materials
<p>Learners will count out concrete objects up to 180 and 190.</p> <p>Emphasis is on reliable counting techniques to ensure accuracy.</p> <p>Learners will estimate the number of objects in a group up to 190.</p> <p>Learners will check the accuracy of their estimates by counting reliably.</p>	<p>Counters (e.g., beans, small cubes, or buttons)</p> <p>Number charts or a number line for reference</p>
Introduction	Examp.
<p>Introduce the concept of counting by telling a story about Alo's food garden to help learners understand the practical use of counting in everyday life.</p> <p>Read the story about Alo and her mom collecting vegetables from their garden.</p>	<p>"If Alo and her mom collected 12 tomatoes and 6 potatoes, how many vegetables did they collect in total?"</p> <p>Engage learners by asking questions related to the story that involve estimation and counting. For example:</p> <p>"How many tomatoes do you think are still left in the garden if they collected 12?"</p> <p>"If they pick 8 more potatoes, how many will they have in total?"</p> <p>Extend the story to include scenarios where Alo needs to estimate the number of vegetables before counting them.</p> <p>This reinforces the importance of estimation and counting reliably to verify.</p>
Teaching guidelines	Answers to activities (LB page 23)
<p>Guide learners through the hands-on activities to practise counting objects and estimating quantities. The focus is on counting objects up to 180, encouraging group counting for reinforcement.</p> <p>Guided activity: Split learners into small groups.</p> <p>Counting task: Each group with a set of counters or a few items around the classroom (e.g., pencils, blocks, etc.).</p> <p>Estimate: Ask each group to first estimate the number of items they have.</p> <p>Count and check: After estimating, have each group count their items to check the accuracy of their estimation.</p> <p>Report back: Each group reports back to the class on their estimation and counting results, discussing any differences and learning from the process.</p>	<p>Activity 1</p> <ol style="list-style-type: none"> <ol style="list-style-type: none"> 12 tomatoes and 8 oranges more tomatoes 9 tomatoes 12 potatoes <ol style="list-style-type: none"> bottle tops – 14 paper clips – 12 rulers – 8 <ol style="list-style-type: none"> bottle tops – fourteen paper clips – twelve paper rulers – eight

<p>Encourage learners to use counting strategies such as grouping in 5s, 10s, or 20s to make counting easier and more efficient. Remind them to recount to ensure they are counting reliably and correctly.</p> <p>Emphasise the importance of both estimating and then counting to check for accuracy.</p> <p>Use a variety of objects to keep the activity engaging and relatable.</p>	
<p>Intervention</p> <p>Provide simpler counting tasks for learners who need more support.</p> <p>Conduct a small group session on the mat where they can count using an abacus.</p> <p>This hands-on practice helps reinforce their counting skills, improve estimation accuracy, and understand counting groups in 5s, 10s, etc.</p> <p>Encourage them to count up to 180 to solidify their grasp of the number range.</p>	<p>Extension</p> <p>Challenge advanced learners with large groups of objects or more complex estimation questions.</p>
<p>Independent practice</p> <p>Encourage learners to practise counting daily as part of their homework activities.</p> <p>Assign tasks similar to those covered in the lesson, focusing on counting, estimating and checking numbers up to 180.</p>	<p>Conclusion/Reflection</p> <p>Daily practice will reinforce their learning and ensure they gain confidence and proficiency in counting and estimation.</p>



Counting objects

New words/terms	Estimate: Making an educated guess by rounding numbers to find an approximate answer.
------------------------	--

<p>Learning objectives</p> <p>Learners count concrete objects up to 180, emphasising reliable counting techniques for accuracy.</p> <p>They will estimate quantities up to 180 and verify these estimates through precise counting.</p> <p>Integrate counting and estimation within practical contexts, such as classroom objects or stories like Alo’s food garden.</p>	<p>Materials</p> <p>A bucket number lines number charts 180 counters (such as beads, seeds, or marbles)</p> <p>Example</p> <p>Ask these questions and guide their answers: What items have you counted recently? Where did this take place? Why is it important to know the exact number? When you count, how do you make sure you don’t miss any items or count the same item twice?</p>
<p>Introduction</p> <p>Begin by discussing the importance of counting in everyday life and provide examples of how people count various items such as animals, food products, and objects.</p> <p>Ask learners to share their recent experiences counting.</p>	<p>Answers to activities (LB pages 24)</p> <p>Practise counting</p> <ol style="list-style-type: none"> Learners to collect small objects Learners practise counting to 180
<p>Teaching guidelines</p> <p>Address common misconceptions:</p> <p>Counting faster is better: Clarify that accuracy is more important than speed. Encourage them to take their time to ensure they count each object once.</p> <p>Estimation is just guessing: Explain that estimation is an educated guess that helps in planning and checking if a number seems reasonable.</p> <p>Grouping is not necessary: Discuss how grouping objects (e.g., in 10s) makes counting more efficient and helps in visualising larger numbers.</p> <p>Guided activity:</p> <p>Split learners into small groups.</p> <p>Provide each group with counters and instruct them to count in groups of 10 until they reach 180.</p> <p>Emphasise accuracy by having them estimate the number of counters before counting, then check their estimates.</p> <p>Reinforce that careful counting prevents errors and explain the benefits of using grouping strategies.</p> <p>To deepen understanding and skills in counting and estimation, consider these strategies:</p> <p>Use different representations: Employ various materials (beans, blocks) for counting to reinforce number concepts.</p> <p>Visual aids: Utilise number lines and charts to help learners see patterns and understand grouping.</p> <p>Guided practice: Start with simpler counting tasks and gradually increase complexity, reducing support over time.</p> <p>Peer teaching: Encourage learners to teach each other, reinforcing their own understanding.</p>	

Intervention	Extension
<p>Use guided practice with peers or the teacher to count simpler items. Visual aids like number lines or abacuses can assist with understanding.</p> <p>Interactive games and technology: Use digital tools and games for engaging practice and instant feedback. Incorporate physical activities to reinforce concepts for kinaesthetic learners.</p>	<p>Use estimation jars to build excitement and practise estimation skills.</p>
Independent practice	Conclusion/Reflection
<p>Group counting: Encourage learners to count in groups (e.g., in 2s, 5s, 10s) to develop efficient counting strategies.</p> <p>Group work: Split learners into small groups and assign each group different items to count on the playground (e.g., trees, leaves, pebbles, or playground equipment). This real-life context helps deepen their understanding of counting and estimation.</p>	<p>To reinforce skills, learners should engage in counting activities as part of their homework.</p> <p>Assign similar counting or estimation exercises to what was covered in the lesson to ensure consistent practice and understanding.</p> <p>Encourage them to keep a counting journal to track their progress, strategies, and reflections.</p> <p>Reflection and discussion: Discuss strategies used and challenges faced to promote critical thinking.</p>

Estimating and checking by counting

LB pages 25–28

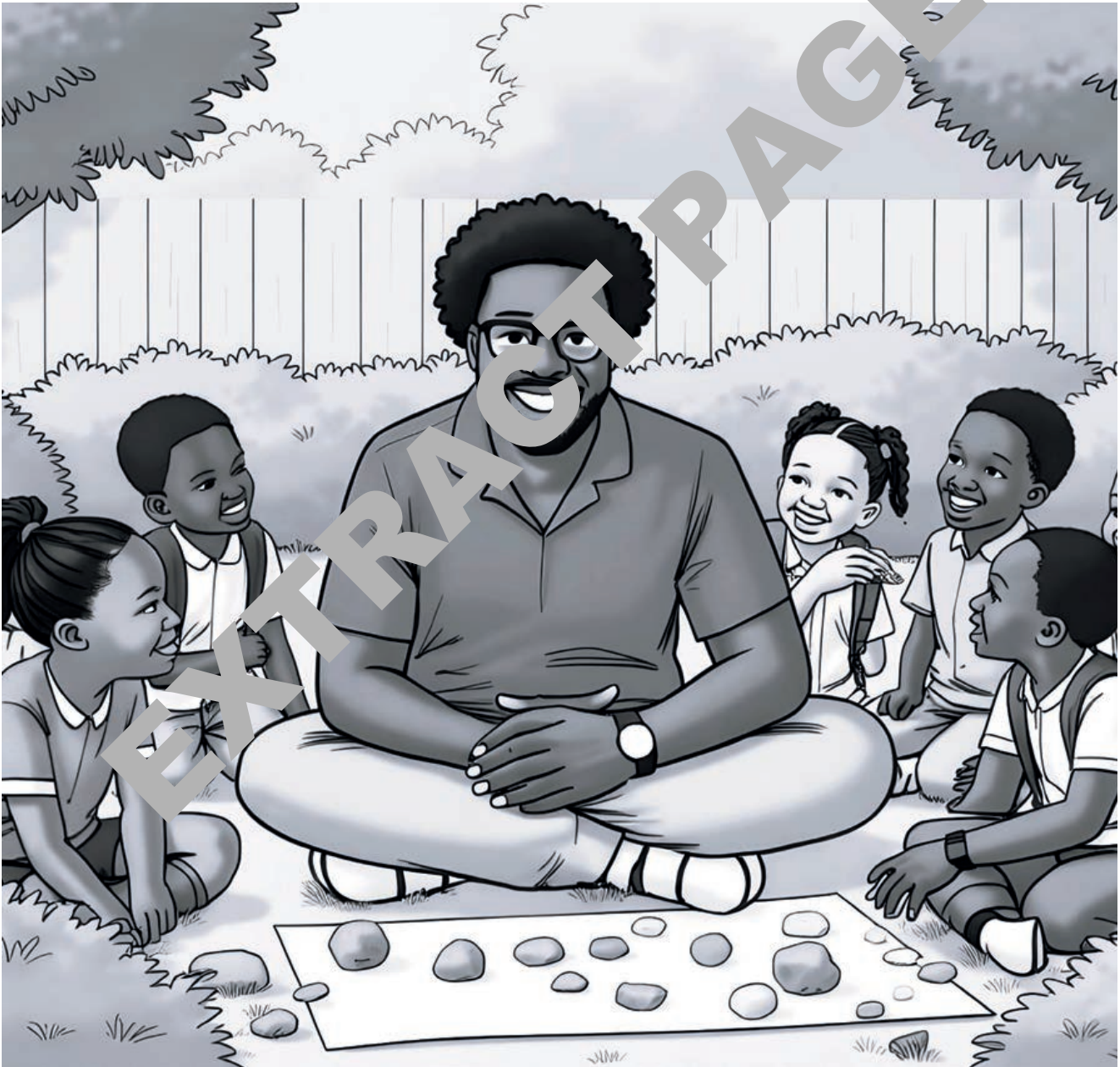
New words/terms

Estimate: Making an educated guess by rounding numbers to find an approximate answer.

Learning objectives	Materials
<p>Learners count concrete objects up to 100, emphasising reliable counting techniques for accuracy.</p> <p>They will estimate quantities up to 100 and verify these estimates through precise counting.</p> <p>Integrate counting and estimation within practical contexts, such as classroom objects or stories like Alo's food garden.</p>	<p>A bucket</p> <p>180 counters (such as beads, peas, or marbles)</p>
Introduction	Example
<p>Begin by discussing the importance of counting in everyday life and provide examples of how people count various items such as animals, food products, and objects.</p> <p>Ask learners to share their recent experiences with counting.</p>	<p>Ask these questions and guide their answers:</p> <p>What items have you counted recently? Where did this take place?</p> <p>Why was it important to know the exact number?</p> <p>When you count, how do you make sure you don't miss any items or count the same item twice?</p>

Teaching guidelines	Answers to activities
<p>Address common misconceptions:</p> <p>Counting faster is better: Clarify that accuracy is more important than speed. Encourage them to take their time to ensure they count each object once.</p> <p>Estimation is just guessing: Explain that estimation is an educated guess that helps in planning and checking if a number seems reasonable.</p> <p>Grouping is not necessary: Discuss how grouping objects (e.g., in 10s) makes counting more efficient and helps in visualising larger numbers.</p> <p>Guided activity: Split learners into small groups. Provide each group with counters and instruct them to count in groups of 10 until they reach 200. Emphasise accuracy by having them estimate the number of counters before counting, then check their estimates. Reinforce that careful counting prevents errors and explain the benefits of using grouping strategies. To deepen understanding and skills in counting and estimation, consider these strategies:</p> <p>Use different representations: Employ various materials (beans, blocks) for counting to reinforce number concepts.</p> <p>Visual aids: Utilise number lines and counters to help learners see patterns and understand grouping.</p> <p>Guided practice: Start with simple counting tasks and gradually increase complexity, providing support over time.</p> <p>Peer teaching: Encourage learners to teach each other, reinforcing their own understanding.</p>	<p>Activity 2</p> <p>Group counting (LB page 25) Learners use counters to count in groups to be more organised. Learners will count in 10s until they reach 190. This activity helps them practise listening and ensures that the counting is correct. If a learner makes a mistake, the group can assist.</p> <p>Group estimation (LB page 26) Place objects in front of learners. They estimate by guessing how many objects they think are in the bowl or box. Example: Place a bowl of sweets or a box of buttons in front of learners to estimate.</p> <p>Circle counting (LB pages 27–28)</p> <p>Activity 3 Learners take turns to count. The teacher will say, “We are counting in 5s.” The teacher will call out learners’ names and they will continue the counting chain. Example: The first person will say ‘5’, the next person will say ‘10’ and so the counting will go until learners reach 200. Learners will count in 2s, 5s or 10s until they reach 200.</p> <p>Speed counting The teacher will set a time limit. See how quickly learners can count to 200. If learners make a mistake they must start over. This helps improve focus and speed in counting.</p>
<p>Intervention</p> <p>Use guided practice with peers or the teacher to count simple items. Visual aids like number lines or abacus can assist with understanding.</p> <p>Interactive games and technology: Use digital tools and games for engaging practice and instant feedback. Incorporate physical activities to reinforce concepts for kinaesthetic learners.</p>	<p>Extension</p> <p>Use estimation jars to build excitement and practise estimation skills.</p>

Independent practice	Conclusion/Reflection
<p>Group counting: Encourage learners to count in groups (e.g., in 2s, 5s, 10s) to develop efficient counting strategies.</p> <p>Group work: Split learners into small groups and assign each group different items to count on the playground (e.g., trees, leaves, pebbles, or playground equipment). This real-life context helps deepen their understanding of counting and estimation.</p>	<p>To reinforce skills, learners should engage in daily counting activities as part of their homework.</p> <p>Assign similar counting or estimation exercises to what was covered in the lesson to ensure consistent practice and understanding.</p> <p>Encourage them to keep a counting journal to track their progress, strategies and reflections.</p> <p>Reflection and discussion: Discuss strategies used and challenges faced to promote critical thinking.</p>



Counting and spelling

Topic: Number symbols and number names

LB pages 29–30

New words/terms

Number names: Numbers written in their word form (e.g., two hundred and fifty)

Learning objectives	Materials
<p>Learners recognise, identify and read number symbols up to 500 and know their number names up to 250.</p> <p>Learners practise writing three-digit numbers in symbols, ensuring accuracy in place value and avoiding common misconceptions.</p>	<p>Number cards</p> <p>Place value cards</p> <p>number name flash cards</p>
Introduction	Example
<p>Begin by emphasising the importance of understanding and accurately using number symbols and names.</p> <p>Explain that these skills are essential not only for Mathematics but also for daily activities, such as shopping or telling time.</p> <p>Highlight that reading and writing numbers correctly helps us communicate more effectively and understand quantities and measurements.</p>	<p>Refer to the worked example on page 29 - Write the number on the board. Ask a learner to write the number name "one" next to it.</p> <p>Gradually increase the number, adding digits to form numbers like 15 and then 159.</p> <p>Demonstrate how to convert these written numbers into symbols, emphasising how to correctly represent numbers with zeroes in specific positions (e.g., 203 vs 2 003).</p> <p>Highlight common mistakes, such as confusing 304 with 3 004, and correct them using place value cards.</p>

Teaching guidelines	Answers to activity (LB page 30)
<p>Interactive building: Start by writing a single digit on the board. Ask a learner to write the corresponding number name. Gradually add digits to form two-digit and three-digit numbers and invite learners to write the number names.</p> <p>Use place value cards: Display numbers using place value cards to help learners visualise how numbers are formed and ensure they understand the place of each digit.</p> <p>Practice and reinforcement: Provide sample practice opportunities, such as converting numbers from words to symbols and vice versa. Use exercises that include numbers with zeroes in the tens or hundreds place.</p> <p>Address misconceptions: Confusing number symbols or misreading number names: Use number charts and flashcards to reinforce recognition and pronunciation. Regularly practise reading and writing numbers in both symbols and words. Provide opportunities for learners to explain their process of identifying and reading numbers.</p>	<p>1. 198 – one hundred and ninety-eight 220 – two hundred and twenty 156 – one hundred and fifty-six 179 – one hundred and seventy-nine 250 – two hundred and fifty</p> <p>2. a. 235 b. 212 c. 199</p> <p>3. a. two hundred and fourteen b. two hundred and forty-nine c. two hundred and thirty-eight d. one hundred twenty-five</p> <p>4. a. 246 – C. two hundred and forty-six b. 105 – B. one hundred and five c. 148 – D. one hundred and forty-eight d. 220 – A. two hundred and twenty</p>
Intervention	Conclusion/Reflection
<p>Work through common misconceptions to reinforce learner understanding.</p> <p>Group work: Learners pair up, and each writes down five three-digit numbers.</p> <p>They will then swap their lists with their peers, who will convert the numbers into their respective number names.</p> <p>This exercise reinforces understanding of both number symbols and names while offering practice in converting between the two formats.</p>	<p>Conclude the lesson by reviewing how to read and write numbers correctly.</p> <p>Emphasise the importance of stating a number clearly in words to ensure accurate representation in symbols.</p> <p>Reflection and discussion Discuss the strategies used during the lesson and any challenges learners faced.</p> <p>Encourage learners to share their experiences and reflect on how they overcame difficulties.</p> <p>Promote critical thinking by asking them to describe how place value helped them understand the numbers better.</p>

Comparing numbers

Topic: Describe, compare and order numbers

LB pages 31–32

New words/terms	<p>More than/greater than (>): The number on the left side of the > sign is larger or greater than the number on the right.</p> <p>Less than/smaller than (<): The number on the left side of the < sign is smaller than the number on the right.</p>
------------------------	---

Learning objectives	Materials
<p>Understand and use terms such as more than, fewer than, most and least to compare and order.</p> <p>Arrange collections from most to least and least to most.</p> <p>Use symbols (<, >, =) to compare numbers up to 99.</p>	<p>Number cards: For visual comparison and practice</p>
Introduction	Examples
<p>Refer to page 31 in LB - Learners should recognise and use comparison symbols (<, >, =) for numbers up to 80 and then up to 99.</p> <p>Use the crocodile analogy: the greater than symbol (>) is like a crocodile's mouth that wants to eat the bigger number, and the less than symbol (<) is like a crocodile's mouth that eats the smaller number.</p>	<p>Compare numbers using the symbols.</p> <p>Example 1: $5 < 32$</p> <p>Example 2: $78 > 66$</p> <p>Visual aid: Show the crocodile symbols on the board and explain how they point towards the larger number.</p> <p>Write examples on the board, like $45 < 50$ and $72 > 68$. Use number cards to visualise comparisons.</p>
Teaching guidelines	Answers to activity (LB page 32)
<p>Address misconceptions:</p> <p>Confusing the > and < symbols: Use the crocodile analogy where the crocodile's mouth always faces the larger number because it "wants" to eat the bigger number. Demonstrate with clear examples, such as $7 > 3$ and $3 < 7$, and have learners create their own comparisons.</p> <p>Ordering numbers: Provide hands-on activities where learners physically arrange number cards or objects. Start with smaller numbers and gradually increase the range as learners gain confidence.</p> <p>Comparing collections based on appearance rather than quantity: Emphasise counting each collection to compare accurately. Use concrete objects and practise grouping and counting to ensure learners understand the concept of quantity.</p>	<ol style="list-style-type: none"> <p>a. $2 < 5$</p> <p>b. $5 > 2$</p> <p>c. $17 > 10$</p> <p>d. $10 < 17$</p> <p>e. $32 > 27$</p> <p>f. $45 = 40 + 5$</p> <p>g. $40 + 5 = 40 + 5$</p> <p>h. $45 - 5 < 40 + 5$</p> <p>a. 34 is less than 57</p> <p>b. 64 is less than 72</p> <p>a. $95 > 59$</p> <p>b. $81 < 93$</p> <p>c. $73 < 82$</p> <p>d. $27 < 77$</p> <p>e. $99 - 5 > 90 - 4$</p> <p>f. $81 + 14 = 90 + 5$</p>

<p>Guided practice: Split learners into pairs and provide them with sets of numbers to compare. Have them use number cards and symbols to demonstrate their comparisons.</p>	<p>4. a. $78 < 92$ b. $79 + 20 > 108 - 16$</p> <p>5. a. 45 is greater b. 69 is less c. Andi has more money</p>
<p>Intervention</p>	<p>Extension</p>
<p>Learners can use physical objects or manipulatives to compare collections.</p> <p>Have them count items and use the crocodile analogy to determine which group has more or fewer items.</p>	<p>Provide more complex number comparison problems or introduce simple word problems involving comparison.</p>
<p>Independent practice</p>	<p>Conclusion/Reflection</p>
<p>Learners work at the board to compare pairs of numbers and use the symbols to show their answers.</p> <p>Homework: Assign tasks where learners compare and order numbers and collections at home. Provide practice problems that include using symbols to compare numbers and ordering collections from most to least and vice versa.</p>	<p>Reinforce the use of comparison symbols and the crocodile analogy to ensure learners understand which symbol to use.</p>

EXTRACT PAGES

Breaking down big numbers

Topic: Place value

Identifying the value of each digit

LB pages 33–34

New words/terms

Place value: The position of the digit in the number (e.g. tens, ones)

Value: The worth of each digit when decomposed (e.g. 70 for the digit 7 in 78)

Learning objectives	Materials
<p>Decompose two-digit numbers into multiples of tens and ones up to 99.</p> <p>Identify and know the value of each digit in the two-digit numbers.</p> <p>Differentiate between place value and digit value.</p>	Place value cards
Introduction	Example
<p>Begin by explaining the concept of place value and value. Place value refers to the position of a digit in a number (e.g. tens or ones), while value refers to what each digit represents when decomposed.</p> <p>Ensure learners understand that place value indicates the digit's position, while value shows how much that digit is worth in the number.</p>	<p>Refer to the worked examples on pg 33 and 34 in the LB</p> <p>- Write the number 56 on the board.</p> <p>Explain:</p> <p>Place value: The 5 is in the tens place.</p> <p>Value: The 5 represents 50 (5 tens), and the 6 represents 6 (ones).</p> <p>Work through another example:</p> <p>For the number 34, the 3 is in the tens place (value of 30) and the 4 is in the ones place (value of 4).</p>
Teaching guidelines	
<p>Introduce definitions:</p> <p>Write the definitions of place value and value on the board.</p> <p>Place value: Position of the digit in the number.</p> <p>Value: Worth of each digit when decomposed</p> <p>Provide examples</p> <p>On the board, write examples under the headings:</p> <p>Place value: 78 (tens).</p> <p>Value: 70 and 8</p> <p>Address misconceptions:</p> <p>Confusing place value and value: Reinforce that place value refers to the digit's position (tens or ones), while value refers to the total worth of that digit in the number. Use visual aids and hands-on activities with place value cards to clarify the difference.</p> <p>Not accurately decomposing numbers into tens and ones: Practise with concrete examples and interactive activities. For instance, decompose numbers using place value cards and physical objects to help learners understand the concept of tens and ones.</p> <p>Incorrectly calculating the value of each digit: Provide step-by-step guidance on how to calculate the value of each digit. Use visual examples and check learners' understanding with additional practice problems.</p>	

Answers to activity	Extension
<p>Activity (LB page 34)</p> <p>1. $38 + 26 = 64$ (table method)</p> <p>2. a. $24 + 45 = 69$ b. $56 + 13 = 69$ c. $70 + 11 = 81$ d. $42 + 53 = 95$ e. $61 + 26 = 87$ f. $64 + 32 = 96$</p>	<p>For learners who grasp the concept quickly, provide more complex numbers (up to 99) for decomposition and comparison, ensuring they can apply the concept effectively.</p>
Remedial	Conclusion/Reflection
<p>Use place value cards to build numbers with learners. For each number, identify the place value and decompose the number into tens and ones.</p> <p>For example, build the number 42. Show that the 4 represents 40 (4 tens) and the 2 represents 2 (ones).</p> <p>Split learners into pairs or small groups. Have each group use place value cards to create and decompose different two-digit numbers.</p> <p>Homework: Assign practice exercises, focusing on decomposing two-digit numbers into tens and ones, and ensuring learners can correctly identify place value and value.</p>	<p>Recap by reinforcing how to identify place value and calculate the value of each digit in a number.</p> <p>Emphasise the importance of understanding place value for accurate number decomposition.</p>



Money problems

Topic: Solve problems

LB pages 35–36

New words/terms	Multiplication: Also called repeated addition Division: Splitting into equal parts or groups
------------------------	---

Learning objectives	Materials
<p>Solve word problems involving addition, subtraction, multiplication, and division.</p> <p>Develop problem-solving strategies using basic operations.</p> <p>Understand the concept of multiplication as repeated addition and division as sharing or grouping.</p>	<p>Counters or blocks for grouping and sharing.</p> <p>Rands (play money) for problem-solving scenario</p>
Introduction	Example
<p>Start by introducing the concept of multiplication and division. Use examples like grouping objects to explain multiplication as repeated addition, and division as sharing equally. For example, "If you have 12 blocks and you want to make groups of 3, how many groups can you make?"</p>	<p>Problem: A toy costs R5, and you want to buy 4 of them. How much will you spend in total?</p> <p>Solution: $R5 \times 4 = R20$ (or $R5 + R5 + R5 + R5 = R20$)</p>
Teaching guidelines	Answers to activity (LB page 36)
<p>Addition and Subtraction Review:</p> <p>Go over simple word problems involving money (Rands) and quantities. Ask learners to calculate totals and how much is left when items are purchased.</p> <p>Multiplication and Division:</p> <p>Introduce problems that involve repeated addition (multiplication) and splitting into equal parts (division). Use real-life examples like sharing food or toys.</p>	<p>Activity</p> <ol style="list-style-type: none"> $R21 + R4 = R25$. $R50 - R25 = R25$ $R16 + R12 = R28$. $R30 - R28 = R2$ $R15$. $R20 - R15 = R5$
Intervention:	Conclusion/Reflection
<p>For learners struggling with multiplication, break down repeated addition into simpler steps. For division, practice with real objects (e.g., sharing counters or blocks equally among learners).</p> <p>Assign additional problems from the DBE Workbook (pages 60–61) for learners to solve independently. Encourage them to explain their thinking and show all steps.</p>	<p>End the lesson by discussing the importance of using math to solve everyday problems, like shopping or sharing. Ask learners to reflect on which problems were easy or difficult and why.</p>

New words/terms	Multiplication: Also called repeated addition Division: Splitting into equal parts or groups
------------------------	---

Learning objectives	Materials
<p>Solve addition and subtraction problems up to 80 and 99.</p> <p>Practise number bonds to 20.</p> <p>Multiply numbers 1 to 10 by 2, 3, 4 and 5.</p> <p>Divide numbers up to 50 by 2, 5 and 10.</p>	<p>Number cards</p> <p>Counters</p>
Introduction	Example
<p>Story time: Read 'Zama's Bead Pattern Braids' with the class.</p> <p>Ask learners if they have ever braided beads into their hair.</p>	<p>If Zama has 4 braids with 9 beads in each braid, she can multiply 4 by 9 to get 36 beads.</p> <p>If Zama uses 36 beads and then decides to add another braid of 9 beads, how many beads does she have in total?</p> <p>Use addition to calculate $36 + 9$.</p>
Teaching guidelines	Answers to activity (LB page 38)
<p>Multiplication and division:</p> <p>Teach learners that multiplication is repeated addition. For example, 4×5 can be calculated as $5 + 5 + 5 + 5 = 20$.</p> <p>Also, introduce division as grouping or sharing equally. For example, dividing 50 by 5 means finding how many groups of 5 can fit into 50.</p> <p>Split learners into groups.</p> <p>Provide different story problems involving multiplication and division. For example:</p> <p>I have 5 rows of seeds. How many seeds have I planted?</p> <p>I have 30 seeds and want to divide them into groups of 5. How many groups do I have?</p> <p>The first group to calculate correctly wins.</p>	<p>Activity 1</p> <p>1. a. $40 \div 5 = 8$ b. $30 \div 10 = 3$ c. $24 \div 2 = 12$ d. $50 \div 10 = 5$ e. $40 \div 5 = 8$ f. $30 \div 2 = 15$</p> <p>2. a. $6 + 6 + 6 = 18$ b. $4 + 4 + 4 + 4 + 4 = 20$ c. $5 + 5 + 5 + 5 + 5 = 25$ d. $3 + 3 + 3 + 3 + 3 + 3 + 3 = 21$ e. $2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16$ f. $4 + 4 + 4 + 4 = 16$ g. $3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 36$ h. $6 \times 2 = 6 + 6 = 12$ i. $9 \times 2 = 9 + 9 = 18$ j. $5 \times 6 = 5 + 5 + 5 + 5 + 5 + 5 = 30$</p> <p>3. a. $4 \times 5 = 20$ b. $3 \times 7 = 21$ c. $9 \times 2 = 18$ d. $5 \times 6 = 30$ e. $4 \times 4 = 16$ f. $10 \times 4 = 40$</p> <p>4. a. $40 \div 5 = 8$ b. $24 \div 2 = 12$ c. $30 \div 2 = 15$ d. $50 \div 10 = 5$ e. $30 \div 10 = 3$ f. $40 \div 5 = 8$</p>

Intervention	Extension
Provide targeted support for learners struggling with multiplication and division concepts, using more concrete visual aids and step-by-step explanations.	<p>Pair learners according to their ability levels.</p> <p>Give them similar problems to complete within a set time using multiplication, division, addition or subtraction.</p> <p>This encourages collaborative problem-solving and reinforces understanding.</p>
Independent practice	Conclusion/Reflection
Learners work on their own to complete worksheets and consolidate activities.	<p>Reflection: Ask learners how they found solving addition, subtraction, multiplication and division problems.</p> <p>Quick recap exercises: Conduct quick verbal problems involving all four operations to reinforce learning.</p> <p>Application in real life: Discuss how these operations can be used in daily scenarios such as dividing snacks among friends or calculating change while shopping.</p>

EXTRACT PAGES

Winning with numbers

Topic: Calculations

Breaking down numbers

LB page 39

New words/terms	Addition: sum, total, altogether, increase, more Subtraction: difference, less, left over, fewer, take away
------------------------	--

Learning objectives	Materials
<p>Solve problems in context and explain solutions to addition and subtraction.</p> <p>Solve money problems involving totals and change.</p> <p>Solve problems in context and explain solutions involving repeated addition leading to multiplication.</p>	<p>Number lines</p> <p>Counters</p> <p>Play money.</p> <p>Visual aids for addition and subtraction</p>
Introduction	Example
<p>Introduce learners to real-world scenarios where they need to use addition, subtraction and money calculations.</p> <p>Highlight how these mathematical concepts are part of everyday life, such as shopping, sharing items and counting objects.</p> <p>Discuss different strategies, such as rounding to the nearest 10 for quicker calculation.</p>	<p>Refer to the worked example in the LB pg 39 - Addition example:</p> <p>Sam has 45 marbles, and he buys 28 more. How many marbles does he have now?</p> <p>Use number lines or counters to visualise the addition: $45 + 28$.</p> <p>Break down the addition: $45 + 20 = 65$, then $65 + 8 = 73$.</p> <p>Subtraction example:</p> <p>If Sam loses 19 marbles, how many will he have left?</p> <p>Use number lines to break down subtraction: $73 - 20 = 53$, then add 1 = 54 marbles.</p> <p>Solving money problems with totals and change:</p> <p>Lerato has R50. She buys a book for R35. How much change does she get?</p> <p>Step by step: $50 - 35 = 15$. Show this on a number line or by counting back.</p>

Teaching guidelines	Answers to activity (LB page 39)
<p>Introduce addition and subtraction techniques: Use strategies such as building up/breaking down numbers and using number lines.</p> <p>Money problems: Introduce the concept of rounding for faster Mental Maths calculations.</p> <p>Interactive board work: Engage learners with examples and board work to solve similar problems and explain their steps.</p> <p>Addressing misconceptions: Confusion between addition and subtraction operations: Use visual aids (e.g. number lines) and role-playing to reinforce when to add or subtract.</p> <p>Difficulties understanding the concept of change in money problems: Use play money for hands-on practice to make it concrete.</p>	<p>Activity 2</p> <ol style="list-style-type: none"> $(20 + 40) + (4 + 5)$ $= 60 + 9$ $= 69$ $(60 + 30) + (4 + 2)$ $= 90 + 6$ $= 96$ $(50 + 10) + (6 + 6)$ $= 60 + 12$ $= 72$ $(40 + 50) + (2 + 3)$ $= 90 + 5$ $= 95$ $(60 + 20) + (1 + 6)$ $= 80 + 7$ $= 87$ $(70 + 20) + (1 + 2)$ $= 90 + 3$ $= 93$
<p>Intervention</p> <p>Learners who require additional support will be invited to the teacher's desk for one-on-one guidance. The teacher will provide targeted support, using simplified examples and manipulatives (e.g., counters, play money) to reinforce addition, subtraction, and money calculation concepts.</p> <p>For example:</p> <p>The teacher might use play coins to help learner understand money problems involving totals and change.</p> <p>Focused questions will help the learner articulate their thinking process and clarify misconceptions.</p>	<p>Extension</p> <p>Learners work in groups on more challenging word problems that combine addition and subtraction or involve more complex money calculations.</p> <p>Extension activity: If three friends each buy different items costing R25, R37 and R48, how much do they spend together? How much change will they get if they paid with a R200 note?</p> <p>This encourages learners to apply their knowledge in a group setting, promoting collaboration and higher-order thinking.</p>
<p>Independent practice</p> <p>Learners work on their own to complete worksheets and consolidate activities.</p>	<p>Conclusion/Reflection</p> <p>Consolidate the lesson by revisiting the main concepts on the board.</p> <p>Learners will be encouraged to participate by explaining how they approached and solved the problems.</p> <p>This interactive revision will help reinforce the key vocabulary (e.g. total, change, increase, decrease) and ensure that learners can independently calculate answers and explain them.</p>

Breaking down numbers

LB pages 40–43

Learning Objectives	Materials
<p>Solve problems in context and explain solutions to repeated addition leading to multiplication.</p> <p>Solve problems involving equal grouping and sharing leading to division, including remainders.</p> <p>Solve problems involving sharing that lead to fractions.</p>	<p>Counters</p> <p>Visual aids</p> <p>Fraction strips</p>
Introduction	Example
<p>Begin by building on the previous lesson's concepts. Highlight how repeated addition can lead to multiplication and how equal grouping can be used to solve problems that involve division.</p> <p>Introduce the concept of fractions through sharing.</p>	<p>Repeated addition leading to multiplication: There are 4 baskets, and each basket has 6 apples. How many apples are there in total? Demonstrate with repeated addition. $6 + 6 + 6 + 6 = 24$</p>
Teaching guidelines	<p>Then show the multiplication form: $4 \times 6 = 24$</p>
<p>Repeated addition and multiplication: Use grouping techniques with visual aids and manipulatives to explain the concept.</p>	<p>Emphasise that multiplication is a faster way to add the same number repeatedly.</p>
<p>Division with remainders: Demonstrate using counters or drawings to show equal groups and leftovers.</p>	<p>Equal grouping and division (with remainders): 12 sweets need to be shared equally among 5 children. How many sweets does each child get, and how many are left?</p>
<p>Fractions through sharing: Use visual aids like fraction strips or circles to illustrate how sharing leads to fractions.</p>	<p>Explicit grouping: Each child gets 2 sweets ($2 \times 5 = 10$). There are 2 sweets left over, showing a remainder.</p>
<p>Addressing misconceptions: Believing multiplication is only about memorisation, rather than understanding repeated addition: Reinforce through hands-on activities that link addition to multiplication.</p>	<p>Sharing that leads to fractions: 3 friends share 8 oranges equally. How many oranges does each friend get? Explain that each friend gets 2 whole oranges, and the remaining 2 oranges are cut into halves. Each friend gets $2\frac{1}{2}$ oranges. Illustrate how this introduces the concept of fractions in a real-world context.</p>
<p>Confusing division and sharing as the same concept without understanding remainders: Use concrete examples and counters to show how some division problems leave remainders.</p>	<p>Watch this YouTube video: https://m.youtube.com/watch?v=IHlrFcaFsG4</p>
<p>Thinking fractions in abstract numbers: Connect fractions to everyday situations (e.g. sharing food) to make them more relatable.</p>	

Answers to activities	
<p>Activity 3 (LB page 40)</p> <p>1. $57 + 26 = 57 + 20 + 6$ $= 77 + 6 = 83$</p> <p>2. $18 + 37 = 18 + 30 + 7$ $= 48 + 7 = 55$</p> <p>3. $59 - 48 = 59 - 40 - 8$ $= 19 - 8 = 11$</p> <p>4. $83 - 56 = 83 - 50 - 6$ $= 33 - 6 = 27$</p> <p>5. $49 + 48 = 49 + 40 + 8$ $= 89 + 8 = 97$</p> <p>6. $77 - 38 = 77 - 30 - 8$ $= 47 - 8 = 39$</p>	<p>Activity 4 (LB page 42–43)</p> <p>1. a. $45 + 32 = 40 + 5 + 30 + 2$ $= 70 + 7 = 77$</p> <p>b. $78 - 21 = 57$</p> <p>c. $56 + 13 = 69$ d. $91 - 17 = 74$</p> <p>e. $34 + 25 = 59$ f. $63 - 29 = 34$</p> <p>g. $82 + 14 = 96$ h. $70 - 36 = 34$</p> <p>i. $47 + 26 = 73$ j. $55 - 18 = 37$</p> <p>2. a. $56 + 14 = 70$ b. $73 - 27 = 46$</p> <p>c. $39 + 18 = 57$ d. $80 - 5 = 75$</p> <p>e. $35 + 25 = 60$ f. $45 - 15 = 30$</p>
<p>Activity 4 (continued)</p> <p>3. a. $9 + 11 = 20$ b. $8 + 12 = 20$ c. $20 - 7 = 13$ d. $5 + 15 = 20$ e. $13 + 7 = 20$ f. $2 + 18 = 20$</p> <p>4. a. $6 + 6 = 12$ b. $4 + 4 + 4 + 4 + 4 = 20$ c. $3 + 3 + 3 + 3 + 3 = 15$ d. $7 + 7 = 14$ e. $10 + 10 = 20$ f. $5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 40$</p> <p>5. a. $4 \times 4 = 16$ b. $7 \times 2 = 14$ c. $6 \times 3 = 18$ d. $2 \times 3 = 6$ e. $7 \times 5 = 35$ f. $9 \times 2 = 18$ g. $5 \times 3 = 15$ h. $5 \times 5 = 25$ i. $8 \times 4 = 32$ j. $6 \times 5 = 30$ k. $8 \times 2 = 16$ l. $4 \times 7 = 28$</p>	<p>Activity 4 (continued)</p> <p>6. a. $40 \div 2 = 20$ b. $50 \div 10 = 5$ c. $16 \div 4 = 4$ d. $48 \div 2 = 24$ e. $40 \div 10 = 4$ f. $30 \div 5 = 6$</p> <p>7. a. $3 \div 2 = 1 \text{ r } 1$ b. $50 \div 2 = 25$ c. $3 \div 10 = 0 \text{ r } 3$ d. $26 \div 2 = 13$ e. $48 \div 4 = 12$ f. $30 \div 10 = 3$ g. $44 \div 4 = 11$ h. $48 \div 2 = 24$</p>
Intervention	Extension
<p>Learners work with the teacher to practise multiplication as repeated addition and division with remainders.</p> <p>The teacher uses manipulatives such as counters, fraction strips or visual aids to help learners understand the concepts in a concrete way.</p> <p>Guide learners through a problem step by step:</p> <p>If there are 3 baskets, each with 5 apples, how many apples are there? Let's add 5 three times together. Now let's try multiplying.</p> <p>This step-by-step guidance will help learners visualise and grasp the connections between addition and multiplication, as well as division and remainders.</p>	<p>Learners who have demonstrated proficiency will engage in group-based enrichment activities.</p> <p>These activities will focus on solving problems that involve both division with remainders and understanding fractions. For example:</p> <p>A group of 7 children share 23 oranges equally. How many oranges does each child get, and how many oranges are left over?</p> <p>What fraction of an orange would the remainder represent if shared among all children?</p> <p>This problem helps reinforce the link between division, remainders and fractions and promotes discussion on how to represent the remainder as a fraction.</p>

Independent practice	Conclusion/Reflection
Learners work on their own to complete worksheets and consolidate activities.	<p>Consolidate the lesson by revisiting the examples and concepts on the board, inviting learners to assist in solving a final problem.</p> <p>Learners will explain their solutions step by step, discussing multiplication, division (with and without remainders), and how fractions emerge from sharing scenarios.</p> <p>This discussion will help clarify any remaining misconceptions and ensure that all learners are confident in explaining their thinking processes.</p>

EXTRACT PAGES

Fraction explorers

Topic: Fractions

LB pages 44–45

New words/terms	<p>Fraction: A part of a whole.</p> <p>Half ($\frac{1}{2}$): One of two equal parts of a whole.</p> <p>Quarter ($\frac{1}{4}$): One of four equal parts of a whole.</p>
------------------------	--

Learning objectives	Materials
<p>Understand the concept of fractions, specifically halves and quarters.</p> <p>Identify and represent fractions in different forms.</p> <p>Compare the sizes of different fractions.</p>	<p>Paper cutouts of shapes (e.g. circles, squares) for folding into halves and quarters.</p> <p>Fraction cards or visual aids.</p>
Introduction	Example
<p>Begin by showing a whole object (e.g., a paper circle or square) and then folding it into two equal parts to explain halves. Similarly, fold the paper into four equal parts to show quarters. Ask, "What happens when we divide a whole into parts?"</p>	<p>Problem: "If we cut a pizza into 4 equal parts and you eat 2 parts, how much of the pizza is left?"</p> <p>Solution: 2 quarters ($\frac{2}{4}$) of the pizza is left.</p>
Teaching guidelines	Answers to activities (LB pages 44–45)
<p>Identifying Fractions: Use real-life examples like cutting an apple or sandwich in half and then into quarters.</p> <p>Comparing Fractions: Demonstrate how halves are bigger than quarters by comparing the size of pieces.</p>	<p>Practical activity</p> <ol style="list-style-type: none"> • 2 halves • 4 quarters • 1 half • The parts/pieces get smaller. Learners' own answers Learners' own answers a. The pieces get smaller. b–c. Learners' own answers
Intervention	Extension
<p>For learners struggling with fractions, use more hands-on practice with folding paper or dividing objects like clay. Focus on understanding that fractions are equal parts of a whole.</p>	<p>Challenge learners to explore fractions beyond halves and quarters, such as thirds or fifths, and have them represent these fractions using shapes or drawings.</p>
Independent practice	Conclusion/Reflection
<p>Provide a worksheet with examples similar to those practised in class. Let learners complete this individually or in pairs.</p>	<p>Summarise how fractions are parts of a whole and review how halves are larger than quarter. Ask learners to reflect on where they might see fractions in everyday life, such as when sharing food or dividing objects.</p>

Fractions are everywhere

LB pages 46–48

New words/terms	<p>Fraction wall: A visual tool set out in the form of a wall to compare different fractions.</p> <p>Divided into: Cutting a whole into smaller equal parts.</p> <p>Whole: A full item, not cut into pieces</p>
------------------------	--

Learning objectives	Materials
<p>Use and name unitary fractions: $\frac{1}{2}$ $\frac{1}{4}$ [$\frac{1}{3}$] [$\frac{1}{5}$]</p> <p>Recognise fractions in diagrammatic form.</p> <p>Write fractions as one half, one third, one quarter, and so on.</p>	<p>Fraction wall poster: A visual representation to help learners learn, compare and identify fractions.</p> <p>Individual fraction walls: Handout to each learner for hands-on practice</p>
Introduction	Example
<p>Introduce fractions: Start by explaining that a fraction represents a part of a whole. Use clear language when discussing fractions, such as ‘one-third’ or ‘two-halves’ to help learners understand the terminology.</p> <p>Visual representation with a fraction wall: Use a fraction wall to show how different fractions fit into one whole. This tool helps learners visually compare fractions and understand their relative sizes.</p> <p>Hands-on activity: Provide each learner with a fraction wall to help them explore and identify different fractions.</p> <p>This hands-on approach reinforces the concept that fractions are parts of a whole.</p>	<p>Discussion example Read the description of the bread in the Learner’s Book and discuss in terms of fractions.</p> <p>Ask the following questions to check understanding:</p> <p>How many parts make up a half?</p> <p>How many parts make up fourths or quarters?</p>

Teaching guidelines	Answers to activity (LB pages 47–48)
<p>Visual method on the board: Draw a square on the board and divide it into 4 equal parts. Colour in 1 part and ask the learners: “How many parts are shaded?” (Answer: one-quarter). “How many parts are not shaded?” (Answer: three-quarters). Provide more examples by drawing other shapes, such as circles or rectangles, divided into different fractions to reinforce the concept.</p> <p>Addressing misconceptions: Fractions don’t always need equal parts: Use concrete examples like cutting a cake into equal versus unequal slices to demonstrate the importance of equal division in fractions. Reinforce that unequal divisions do not represent valid fractions.</p>	<p>1. a. 8 pieces b. 3 pieces are not eaten. c. $\frac{3}{8}$ of the pizza is not eaten or is left behind.</p> <p>2. a. 9 pieces b. 5 pieces are shaded. c. $\frac{5}{9}$ has been shaded in. d. $\frac{4}{9}$ has not been shaded in.</p> <p>3. a. A – 2 B – 4 C – 3 D – 5 b. A – $\frac{1}{2}$ B – $\frac{3}{4}$ C – $\frac{2}{5}$ D – $\frac{1}{5}$ c. A – $\frac{1}{2}$ B – $\frac{1}{4}$ C – $\frac{1}{5}$ D – $\frac{1}{5}$</p> <p>4. $30 \div 5 = 6$ cents for each friend.</p> <p>5. a. Fraction of boys = $\frac{1}{2}$ or $\frac{42}{84}$, b. $4 \div 1 = 4$ boys</p>
<p>Intervention</p> <p>Learners who are still finding the concept of fractions challenging will benefit from one-on-one time at the teacher’s desk.</p> <p>During this time, the teacher will demonstrate step by step, how to read and interpret a fraction wall.</p> <p>The teacher can ask targeted questions such as “How many parts make up fifths?” or “How many halves make up a whole?”</p> <p>This approach ensures that learners understand the visual representation of fractions and their corresponding names.</p>	<p>Extension</p> <p>Learners who have mastered the concept of fractions will receive an enrichment or extension activity from the Challenge Box.</p> <p>These activities could include more complex fraction problems, such as finding fractions within mixed numbers or comparing different fractions.</p> <p>For motivation, learners will be rewarded on a point system or with tangible rewards, such as stickers or tokens, encouraging continuous engagement and effort.</p>
<p>Independent practice</p> <p>Learners work on their own to complete worksheets and consolidate activities.</p>	<p>Conclusion/Reflection</p> <p>Emphasise how using tools like the fraction wall and hands-on activities reinforced learners’ understanding and helped them grasp the concept of fractions more concretely.</p> <p>Recap and reflection: End the lesson with a brief recap, allowing learners to share one new thing they learned about fractions and how they can apply it in everyday contexts, like sharing or dividing items equally.</p> <p>Encourage them to think of real-world scenarios where understanding fractions is helpful.</p> <p>Reflect on how the experience and insights gained from this lesson can inform future lesson planning and management, particularly in differentiating instruction to address various learning needs.</p>