

TERM I

Books 1, 2 and 3 (pages 1–13)

Book I

The activities in **Level 1: Book 1** engage learners in **number concepts from 1 to 10**, as well as being introduced to the **addition, subtraction and equals signs**, along with basic **South African coins** (R1, R2 and R5). This book serves as revision and reinforcement for basic mathematical literacy covered in Level R and a baseline assessment for Grade 1 numeracy readiness. All of these activities are covered within the theme of *Discovering in the garden*.

PAGE 1

Focus: Numbers, operations and relationships & space and shape & measurement

Equipment needed



Outdoor access (ideally, a garden for digging holes, but if a garden is not available, a sandpit or any sandy area may be used), digging tools (a spade is ideal, but old containers or similar items can also be used for digging), writing tool (a stick or any object suitable for writing in the sand), containers (different-sized buckets or any old containers), waterproof toys (these will need to be dropped into the water in the containers), water source (access to water for filling the bucket), gardening tools (a spade and a rake are preferred, but any items can be used to teach the concepts of big, small, tall and short), counting objects (various vegetable seeds are ideal, but if seeds are not available, any countable objects can be used to expose the learner to counting and provide concrete items for practice – you will need 10 objects per learner as the number range is 1–10), shape cut-outs (these can be cut out of cardboard or paper: circle, rectangle, square and triangle), number cards and objects (cards with 1–10 written on them that correspond to a particular number of objects), colouring pencils, string or tape (to measure out the lines for the horizontal and vertical maze game).

Key focus skills



Big and small, depth, shapes, number symbols 1–10, volume, short and tall (length), counting from 1 to 10, and vertical and horizontal

Each book in the Tippiie series starts with a practical application activity, allowing learners to apply concepts within the given theme. These activities engage learners through hands-on experiences, exploring a variety of mathematics concepts in an interactive and enjoyable way. The focus of this page is to ensure that learners understand the meaning of the terminology introduced on this page, as well as ensuring that they have a good foundation of concepts and number sense development that should have been introduced in Grade R.

Introducing the concept



Before the learners can begin working through the practical activity on this page, it is important to ensure that they understand what the different concepts covered on this page mean. Begin by discussing what the learners already know about the various terms covered here. This can be done as a class discussion. Start by using the words “big” and “small”. Ask them to share their understanding of these words. Then present various everyday objects of different sizes and have the learners identify which ones are big and which are small. Next, introduce the concept of depth by asking the learners to describe what they understand by the terms “deep” and “shallow”. Using a picture can help illustrate these ideas as well. Teaching these terms through direct comparison of two different objects can effectively clarify their meanings.

The same idea can be carried through to teach the learners about shapes, number symbols, volume, short and tall, vertical and horizontal. Once you feel the learners have a relatively good understanding of the different terms, you can allow them to do the following activities and games.

- ✍ **Size hunt activity:** Take the learners on a “size hunt” around the classroom or playground. Ask them to find and bring back 1 big item and 1 small item. Compare and discuss their findings.
- ✍ **Depth – water-play activity:** Fill different-sized containers with water and have learners place toys or objects in them. Discuss which containers are deeper or shallower based on how far the toys or objects sink.
- ✍ **Shape hunt activity:** Create shape cut-outs or cards (circle, square, triangle, rectangle). Hide shape cut-outs around the classroom. Have learners find and identify the shapes, then group them by shape.
- ✍ **Number-matching activity:** Have learners match number cards with the corresponding number of objects.
- ✍ **Volume-measuring-cup activity:** Let learners fill and compare the volumes of different-sized measuring cups of water. Discuss which holds more or less.
- ✍ **Horizontal and vertical – drawing lines activity:** Teach learners to draw horizontal (side-to-side) and vertical (up-and-down) lines. Use different colours for each direction.
- ✍ **Game – line maze:** Create a maze of horizontal and vertical lines on the floor. Have learners walk along the lines, identifying which are horizontal and which are vertical.

Teaching tips



This activity makes for an ideal groupwork opportunity, encouraging the learners to teach each other and build on the terminology they have learnt about in class.

Even though many of these concepts may be familiar to the learner, this is an excellent opportunity to reinforce their knowledge by using the correct terminology. This activity also creates an opportunity to allow for incidental learning to take place. Be sure to include the following terminology when covering the following concepts:

- ✍ **Depth:** Discuss words like “deep” and “shallow” during activities that involve measuring depth.
- ✍ **Number symbols:** Write numbers 1–10 and match them with counters, such as placing five stones next to the symbol 5, to visually demonstrate quantities.
- ✍ **Volume:** Use terms like “full,” “half” and “quarter” to describe the amount of substance in a container. Show these measurements by using their container to illustrate what each term means.
- ✍ **Big, small, short and tall:** Use terms like “bigger”, “smaller”, “short” and “tall” to describe different lengths and heights of objects.
- ✍ **Counting:** Encourage learners to count out loud to reinforce number recognition and sequencing.
- ✍ **Horizontal and Vertical:** Explain the concepts of horizontal (side-to-side) and vertical (up-and-down). Have learners place items in both orientations and then identify them.

Be sure to ask open-ended questions that stimulate thinking and discussion during this activity. Because this is an outdoor activity, you will need to ensure that all learners are supervised and understand the importance of being careful when handling tools and natural elements. You will need to be flexible and be prepared to adapt activities based on the learners' interests and the available garden resources.

Lesson outcomes



By the end of this activity, the learners should be able to explain what is meant by the terms “big” and “small” (size), “depth”, “volume”, “short” and “tall” (length), “vertical” and “horizontal”, as well as being able to identify basic shapes, recognise number symbols 1–10, and count from 1–10.

Consolidation



Pages covering these concepts, suitable for homework or further assessment, can be found at the back of the term lesson guides.

PAGE 3

Focus: Numbers, operations and relationships

Equipment needed



Small objects like blocks or counters (10 per learner), whiteboard and marker for each learner, sharp HB writing pencil, eraser, actual coins or visual printouts of South African coins (rands only)

Key focus skills



Count, read and write numbers up to 10. Addition, subtraction and equals signs, as well as money (R1, R2 and R5 coins)

This page highlights the key concepts covered in Level 1: Book 1. Counting is a fundamental numeracy skill that teaches learners the number words and their correct order. Learning to write numbers correctly helps learners grasp the concept of numbers and develop number sense. This understanding is crucial for future mathematical skills like addition, subtraction and multiplication.

Addition and subtraction are used to represent and solve various types of problems. It is important for learners to recognise these situations and represent them symbolically, building on their counting skills with whole numbers. Understanding addition and subtraction prepares learners for learning other mathematical topics, including multiplication and division. We use addition and subtraction every day in daily life, such as when cooking, calculating bills, measuring distances, and more. Understanding the equals sign in mathematics is fundamental to grasping all number properties. Learners need to comprehend that equality represents a relationship where two mathematical expressions hold the same value. This understanding helps learners think about the relationships expressed in number sentences, enhancing their arithmetic skills while introducing algebraic concepts. If they are not able to recognise equality as a relationship, learners may struggle when transitioning from arithmetic to algebra.

It is important for learners to learn to identify money because it is an essential life skill. They need to be able to count money to do adult things like shopping, working many jobs and making good financial decisions.

Introducing the concept



This can be done as a whole-class activity.

Counting: Face the same direction as the learners and hold up both your hands for them to see. Begin by counting out loud and moving your fingers, from 1 all the way to 10. Then let the learners mimic your actions by getting them to hold out their hands and count aloud as they move from finger to finger, ensuring that you are all counting together as a group.

Writing and tracing: To ensure correct number formation, begin by facing the same direction as the learner, and ask them to watch as you write the number in the air so that they can see how to form each number. Say each number aloud as you go and explain where you begin forming each number and where it ends. After you have drawn each number in the air, ask the learners to hold up the index finger of their dominant (writing) hand and to draw the number in the air with you, copying your actions.

Addition, subtraction and equals signs

Addition: Draw the addition symbol (+) and explain, “This is the plus sign. It means we are adding things together.” Follow this by a visual representation whereby you show two groups of objects (e.g., 2 apples and 3 apples). Combine the groups and count the total (5 apples).

Subtraction: Draw the subtraction symbol (–) and explain, “This is the minus sign. It means we are taking things away.” Show a group of objects (e.g., 5 apples). Take away a few objects (e.g., 2 apples) and count what’s left (3 apples).

Equals sign: Draw the equals sign (=) and explain, “This is the equals sign. It shows that the amount on one side is the same as the amount on the other side.” Show an equation using objects (e.g., 2 apples + 3 apples = 5 apples).

Interactive activities: These can be done individually or in small groups. This could be an opportunity to assess the learners’ understanding of addition and subtraction, as well as their ability to count to 10.

Activity 1: Addition with objects

- Give learners 2 groups of objects.
- Have them combine the groups and count the total.
- Write the equation (e.g., $2 + 3 = 5$).

Activity 2: Subtraction with objects

- Give learners a group of objects.
- Have them take away a few objects and count what’s left.
- Write the equation (e.g., $5 - 2 = 3$).

Activity 3: Equation balance

- Create simple equations with objects on either side of the equals sign.
- Have learners count and verify that both sides are the same.
- Draw the equations (e.g., $3 + 2 = 5$).

Money (R1, R2 and R5 coins): It will help if you can show the learners actual coins or pictures and discuss their appearance, in terms of colour, size, animal on the coin.



Counting

- ✍ Allow the learners to place their hands over the picture of hands in their books. Encourage them to move each finger as they count the corresponding numbers.
- ✍ To reinforce the connection between the number and the quantity, point to each finger as you count together.
- ✍ Have the learners count out loud as they move their fingers.
- ✍ Encourage clear and slow counting to ensure they understand each number sequence.
- ✍ Try to make the activity fun by turning it into a game or challenge, or even create a tune for learners to sing along to while counting. Rhythm can help learners to remember words and sequence.
- ✍ Praise the learners for their effort and correct counting, always making use of positive language and encouragement to build their confidence.

Writing and tracing

The learners can then complete this task independently. Walk around the class so that you are able to observe them carefully as they do so to ensure that you can correct any errors the learners may be making.

When completing the writing/tracing activity, the dots are colour-coded, with the green dot being the starting point and the red dot the stopping/end point. Some numbers, like 4, have multiple red dots. The learners should stop tracing at the first red dot and start again at the next green dot. Numbers 2, 3, and 5–9 include additional colours to indicate the tracing order:

- ✍ **Green:** Start
- ✍ **Yellow:** Second step
- ✍ **Orange:** Third step
- ✍ **Red:** Finish

For the number 10, the digit 0 has the same start and end point. By following these guidelines, learners will be able to develop correct number-formation skills.

Read over the blue block with the learners to introduce them to the addition, subtraction and equals signs. When talking about the signs, be sure to mention all the different names for each sign as listed in the block. It's important for the learners to understand that the different names all refer to the same symbol. Also discuss the basic coins (rands) used in South Africa.

Lesson outcomes



By the end of this lesson, the learners should be able to count from 1 to 10 using their fingers to guide them if necessary, as well as being able to write these numbers using the correct formation. The learners should also be able to identify and explain the addition, subtraction and equals sign, as well as identifying the R1, R2 and R5 coins.

Consolidation



Pages covering these concepts, suitable for homework or further assessment, can be found at the back of the term lesson guides.



Learners can complete page 2 in the **Mathematics DBE Book 1**.

PAGES 4–5

Focus: Numbers, operations and relationships & patterns, functions and algebra

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Creative Arts: Drawing patterns using different colours and shapes

Equipment needed



Coloured pencils, counting objects to assist with explaining the concept of sharing (10 per learner), shape cut-outs or cards with different shapes (circles, squares, triangles), pattern blocks (2–4 different coloured blocks (e.g., red, blue, green and yellow) – each learner will need at least 2 of every coloured block, piece of paper per learner, sharp HB pencil, eraser

Key focus skills



Counting objects from 1 to 10, number symbols, sharing, geometric patterns and learning terminology (comparing numbers and quantities), such as “more”, “less”, “same” and “most”

Teaching learners to count objects from 1 to 10 forms the foundation for all later mathematics learning, enhances cognitive abilities like memory and pattern recognition, and is essential for everyday activities. Learning number symbols helps learners recognise and understand written numbers and is crucial for performing mathematical operations and communicating quantities. Sharing between groups helps learners to understand division, fairness, cooperation and problem-solving. Learning about geometric patterns enhances spatial awareness, critical thinking and artistic expression. Understanding terms like “more”, “less”, “same” and “most” helps learners make comparisons, expand their vocabulary, improve decision-making, and build a foundation for arithmetic.

Introducing the concept



This can be done as a whole-class activity.

Counting: Revise counting from 1 to 10 with the learners. You could quickly run through the activity where you ask the learners to hold up their hands and count as they move each finger. You could then get the learners to take 10 objects out of their pencil cases, counting each one as they go.

Explaining “more”, “less” and “same”: You can explain these terms by asking the learners what they understand by each of these terms. You can then make different groups using objects from around the classroom and ask them to identify which group has more, which has less, and which have the same amounts.

Sharing: Explain to the learners that when sharing, fairness is important. This might be the learners’ first formal exposure to sharing, so begin with concrete objects. Start with 2 counters and ask the learners how you could split them so that each person gets an equal (the same) amount. It helps to talk this process through with the learners and draw 2 groups to show in a concrete way how you will split/share the counters. You can say, “This group gets 1, then the other group gets 1. I have no counters left, so that means each group got 1 counter.” From here, start with 4 counters and do the same. Draw your 2 groups, then say, “This group gets 1 counter, and the other group gets 1 counter. Now I have 2 counters left, so this group gets 1 counter, and the other group gets 1 counter. Now I have none left, so each group got 2 counters.” You can continue to show the class how to share, now using 6 counters, then 8, etc.

Geometric patterns: Begin by explaining that a pattern is something that repeats in a specific order. Use simple language and examples the learners can relate to, like clapping hands in a sequence (e.g., clap, clap, stomp, clap, clap, stomp). Review basic shapes such as circles, squares, triangles and rectangles. Show the learners examples of these shapes using flashcards or objects. You can then introduce the learners to various activities and games involving patterns.

 Activity 1: Shape pattern cards

- Arrange a simple pattern using the shape cards (e.g., circle, square, circle, square).
- Ask the learners to identify the pattern and predict what comes next.
- Encourage them to create their own patterns using the shape cards.

 Activity 2: Pattern blocks

- Provide the learners with blocks of 2–4 different colours.
- Demonstrate a simple pattern (e.g., red block, blue block, red block, blue block).
- Have the learners replicate the pattern and then create their own.

 Activity 3: Drawing patterns

- Draw a simple pattern on the board (e.g., triangle, circle, triangle, circle).
- Ask the learners to copy the pattern on their paper.
- Encourage them to draw their own patterns using different shapes and colours.

 Activity 4: Pattern songs and clapping games

- Create a simple song or clapping game that involves repeating patterns (e.g., clap, clap, snap, clap, clap, snap).
- Have the learners join in and follow the pattern.
- Let them create their own clapping patterns for the class to follow.

Teaching tips



Because there are several questions on the page, take your time to work through this activity slowly with the learners. Start by reading each question together so that they understand what is required. For questions 3, 4, 5 and 7, give the learners reminders about the meaning of these terms. If these terms are challenging for a learner to grasp, even after the previous discussion, use concrete objects to visually demonstrate the quantities being compared.

When answering question 6, demonstrate splitting the pumpkins so that both Gramps and Gran receive an equal (the same) amount as you did earlier during the class discussion. If necessary, use counters to represent the pumpkins. Begin with 4 counters. Move 1 counter into Gramps's box and one into Gran's box, then ask how many are left. Discuss how these can be split even further to ensure they both receive the same amount until there are no counters (pumpkins) left. It could also help to illustrate this concept. Draw 1 pumpkin (or a simple shape like a circle) in each box. Describe the process aloud, such as, "Gramps gets 1 pumpkin, then Gran gets 1, and so on until there are no pumpkins left."

Always encourage critical thinking by asking questions that prompt thought before providing answers.

When answering questions 8 and 9, ask the learner to start by reading the colour pattern aloud. Often when they hear the colours or shape, they are able to better work out the pattern, e.g. "Red tomato, red tomato, green tomato, red tomato, red tomato ... What comes next?"

Lesson outcomes



By the end of this lesson, learners should be able to count objects from 1 to 10, recognise number symbols 1–10, have an understanding of the concept of sharing and be able to divide objects into two groups, recognise geometric patterns in order to complete the pattern using both shape and colour, as well as understand what is meant by terminology such as “more”, “less”, “same” and “most”.

Consolidation



Pages covering these concepts, suitable for homework or further assessment, can be found at the back of the term lesson guides.



Learners can complete pages 4–11 in the **Mathematics DBE Book 1**.

PAGE 6

Focus: Numbers, operations and relationships

Equipment needed



Scissors, glue, cut-out pictures from the top of page 25 (at the back of Book 1), tape/chalk or a big, printed number line, whiteboard and markers, sharp HB pencil, eraser

Key focus skills



Counting from 1 to 10, number symbols and counting on a number line

This page focuses on reinforcing the previously introduced skill of counting from 1 to 10. Learners will also learn to count backwards from 10, a crucial skill that lays the foundation for understanding subtraction, place value and negative numbers later. Teaching learners to count on a number line provides a simple, visual representation of how numbers increase and decrease, which is helpful when learning addition and subtraction.

Introducing the concept



Number line counting: Begin by introducing the number line. Show the learners a number line from 1 to 10. Explain that the number line is like a path that shows numbers in order. Ask the learners which number we start at when counting to 10 – they should say 1. You can then explain that counting on a number line is like taking a step when walking: every time we count the next number, we take a step to the right on the number line until we reach 10. You can explain that counting backwards means starting from a higher number and moving to a lower number, like taking steps backward.

You can represent this concept visually by using a large number line on paper. Point to each number as you count forwards and then backwards aloud (e.g., “10, 9, 8, 7, 6, 5, 4, 3, 2, 1”). The learners can then do a physical movement activity whereby you place a number line on the floor using tape, chalk, or a printed version. Have the learners physically step or jump forward and backward from number to number as they count aloud.

Teaching tips



This activity can be completed either as a class or in small groups to allow for peer collaboration.

Cut out and remove the top of page 25 so that the learner is able to have it easily available while completing page 6. Discuss that there are 4 different types of vegetables on page 25. Count each one and discuss which number it would match on page 6. Ask learners to count to 6, 5, 7 and 9 using their fingers first for additional revision. The learners can also count the pictures as they stick down each one.

When transferring the counting to a number line, ask the learner to place their pointing finger on zero. Count together with the learner and show them how your finger makes a jump along the number line to the next number every time you say the next number. It is important for learners to understand that their finger must make 1 jump to the right every time they say the next number. The same process applies to counting backwards, except now the learner will see that their finger is moving to the left each time they count.

Lesson outcomes



By the end of this lesson, the learners should be able to count and recognise number symbols 1–10, as well as being able to count successfully both forwards and backwards on a number line.

Consolidation



Pages covering these concepts, suitable for homework or further assessment, can be found at the back of the term lesson guides.



Learners can complete pages 13, 18–19, 20 and 21 in the **Mathematics DBE Book 1**.

PAGE 7

Focus: Space and shape



“My body”: Identifying left and right



Use this lesson as a space and shape practical activity (5 marks).
See rubric as a guide to assess.

Equipment needed



Scissors, cut out the counters on page 25 (fruit and vegetables in the centre of the page), music (optional), classroom objects or 6 bricks (if you have these available), playdough (optional), paper/whiteboards and markers, sharp HB pencil, eraser