

# TERM I

## Books 1, 2 and 3 (pages 1–13)

### Book 1

The activities in **Level 2: Book 1** engage learners in **number concepts from 1 to 20**. It also serves as revision of concepts covered in Level 1. At the back of the book (pages 20–24) there is a baseline assessment for Grade 2 numeracy readiness. All of these activities are covered within the theme of *Learning in the jungle*.

### PAGE 1

**Focus: Number concepts from 1 to 20, revision of all concepts covered in Level 1**

**LS** Wild animals in South Africa

#### Equipment needed



HB writing pencil, eraser, scissors

#### Key focus skills



**Revision of key concepts of Level 1:** left and right, doubling, counting, multiples, divide, smaller/greater than, equal to, place value.

#### Teaching tips



Practical application of concepts within the theme:

- ✍ As this is the first task in Book 1, take time to read through the questions with the learners before they begin.
- ✍ Explain that you would like them to attempt to do the work on their own without copying from a friend, because you need to see how much they know.
- ✍ Book 1 has been designed as revision and reinforcement for basic mathematical literacy covered in Level 1.
- ✍ Learners should cut out page 25 and use the pictures to answer the questions.

#### Lesson outcomes



After completing page 1 it should be evident whether the learner has areas and concepts that require further teaching and consolidation.

#### Consolidation



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

## PAGE 3

### Focus: Numbers, operations and relationships

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#### Equipment needed



HB writing pencil, eraser, yellow colouring pencil, green colouring pencil

#### Key focus skills



#### Count, read and write up to 20, number symbols and place value

The focus of this page is to ensure that learners understand the value of each digit in a number. For example, the 4 in 24 represents 4 ones, while the 2 represents 2 tens. It is important for learners to understand that although a digit may be the same, its value depends on where it is in the number. Place value aids in regrouping, adding and subtracting multi-digit numbers and is a vital concept for more difficult calculations required for algebra.

#### Introducing the concept



**Place value:** Because place value is such a critical concept, we need to ensure that learners grasp this as it forms the foundation for mathematics. It helps learners to grasp the concept of larger numbers and their structure, as well as developing a strong number sense, and understanding how numbers are composed and decomposed. A fun way to introduce place value is by playing a game called ‘**Bean bag number toss**’:

- ✍ Take 10 separate pieces of paper and label them each from 0 to 9.
- ✍ Then give a learner one or two bean bags to throw at different numbers to create a number. For example, if a learner throws bags on a 2 and a 3, he or she forms the number 23.
- ✍ Write the number on the board and have learners say the number out loud and model the number using manipulatives.
- ✍ Decompose the number into 10s and 1s. Have learners take turns throwing bean bags.

**Number clues:** Alternatively, you could play ‘Number clues’. Model a number story for your learners, such as “There are 7 tens and 1 one. What is the total?”. Then have learners write their answers. Divide the learners into small groups and have them write or tell each other their own number stories.

#### Teaching tips



**Dienes blocks:** If possible, use either Dienes blocks or unifix cubes (preferably green and yellow) when completing this activity. Dienes blocks are helpful in teaching the concept of place value because they provide visual representation and hands-on learning. It is always beneficial for learners to have a concrete manipulative on hand when completing activities. Explain to learners that the individual yellow blocks represent 1s, while the rod of green blocks represents a group of 10 units. If possible, provide each learner with 9 green rod blocks and 9 yellow blocks and practise building numbers using the blocks. Call out the number 13; learners will collect 1 green rod block and 3 yellow blocks. If you do not have sufficient blocks for each learner, they can work in pairs. Do this a few times until you are confident that the learners know how to represent numbers using the blocks.

By incorporating Dienes blocks into place value lessons, learners gain a deeper, more intuitive understanding of how numbers work, laying a solid foundation for future maths success. Now the learners are ready to consolidate this skill by completing the activity.

**Writing and tracing:** To ensure correct number formation, begin by facing the same direction as the learners, and ask them to first observe you writing the number in the air so that they can see how to form each number. Say each number aloud as you do this. 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. The learners can then complete this task independently. Observe them carefully as they do so to ensure that you can correct any errors.

When completing the writing/tracing activity, the dots are colour coded, with the green dot being the starting point and the red dot being the stopping/end point. Some numbers, like 4, have multiple red dots. The learner 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
-  **Orange:** Second step
-  **Red:** Finish

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

After tracing over the numbers, the learners need to colour in the number of blocks that represent that number. For example, for number 1 they would colour in one block yellow, and for number 12, they would colour in 2 yellow blocks (ones) and 1 green row of blocks (tens). When learners colour in the blocks to complete the activity, use the correct coloured pencils (yellow for individual blocks, green for rows of 10).

### Lesson outcomes



Learners should be able to identify, recognise, read and write numbers from 0 to 20. Decompose numbers into tens and ones, stating the value of each digit.

### Consolidation



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

## PAGES 4 AND 5

### Focus: Numbers, operations and relationships



**Wild animals – different colours and sizes; We are all special – differences and similarities**

### Equipment needed



HB writing pencil, eraser, glue, scissors.

## Key focus skills



Counting, number names and symbols, describe, compare and arrange numbers, use maths language (“more than”, “less than”, “least”, “most”); even numbers, seriation – ordering from most to least and least to most.

## Introducing the concept



**Even Steven and Odd Todd:** Use fun activities to teach the concepts of “odd” and “even”, by introducing the characters “Even Steven” and “Odd Todd”.

- ✍ Create a visual for each character. You can use a piece of construction paper for each character.
- ✍ The characters should have hands large enough that learners can place items in each hand. You can make the hands slightly larger than your hands, for example.
- ✍ Tell learners a story about the characters to get their brains going. For instance, you can say that Even Steven loves things to be equal and always wants the same amount in each hand. Odd Todd prefers to not have the same amount in each hand.
- ✍ Have several containers of items, such as beans, flat glass marbles, plastic lids or small blocks. Count out the items together and ask learners which character the plate would belong to. Once you’ve decided, have a learner count out the items again, placing them in the character’s hands.

**Heads-down game:** You could also play a heads-down game of identifying odd and even. The benefit of this game, with learners unable to see how their friends are answering, allows you to see which learners are struggling with the concept.

- ✍ Have the learners put their heads down on their desks.
- ✍ Give them a number, starting with something small.
- ✍ Have learners raise their hands for odd numbers or put their hands on their heads if they think it’s even. This game is to see how much learners are comprehending rather than to correct mistakes. After the game, you can go over the concept again.
- ✍ Keep giving slightly bigger numbers to see if learners have caught on to larger odd-even numbers.

## Teaching tips



- ✍ It may be helpful to have concrete items on hand to assist learners who find it difficult to work out which amount is greater just by looking at the numbers. You can use Interlocking maths cubes, beans etc.
- ✍ Discuss the maths language used and make sure that learners understand the meaning of terms like “more than”, “less than”, “least” and “most”.
- ✍ Learners will use the pictures of the animals at the top of pages 4 and 5 to help them answer questions 1 to 7.
- ✍ Encourage learners to spell the number names correctly, and assist with this by having visible number names and symbols on display in the classroom.
- ✍ Learners need to cut out the strip of animals at the top of page 27 to assist them with answering question 8.
- ✍ Additional practice with seriation could include activities that allow learners to see differences and compare multiple objects. For example, learners could be arranged from shortest to tallest, or learners could race cars on a track and then arrange themselves in the order they finished the race from first to last.

## Lesson outcomes



Learners should be able to count and write number symbols and names. They should also describe, compare and arrange numbers, and identify odd and even numbers.

## Consolidation



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

# PAGE 6

## Focus: Numbers, operations and relationships

### Equipment needed



HB writing pencil, eraser

### Key focus skills



**Count, describe, compare and arrange numbers** (“smaller than”, “greater than”, “equal to”)

### Introducing the concept



**Using manipulatives:** The best way to start off teaching number comparison is to have learners build the numbers they are comparing with manipulatives. This provides a clear visual of which number is larger or smaller in quantity. Once learners build numbers, have them verbally or visually identify which one has more and which one has less.

- ✍ You can compare quantities of anything, which makes options endless.
- ✍ You can use coloured plastic clothes pegs to look like crocodiles. Stick a googly eye onto the clothes peg behind the spring on the side that opens. The peg now resembles a crocodile with its mouth open. Write 2 numbers on the board with a small space between them. Stick the peg between them with Adhesive putty with the “open mouth” facing the larger number.
- ✍ Teach the class a little rhyme to help them remember:  
*Crocodile, Crocodile,  
Which one will you eat?  
The bigger one, the greater one.  
It will be sweet!*

Only once learners have a solid understanding of the concept of less and more visually, you should introduce them to the vocabulary.

### Teaching tips



Learning the vocabulary involved with comparing numbers is an essential part of the skill.

- ✍ It is important to teach learners to use the correct language. Do not teach this concept by saying that the crocodile eats the bigger number. Rather tell learners that crocodiles are hungry and will always open their mouths towards the number that is “greater than” or “bigger than” the other number.

- ✍ Teach learners to “read” these problems just as they would read a sentence in a book – from left to right. For example,  $4 < 7$  will be read as “4 is less than 7”.
- ✍ It is important for learners to be taught that the equal sign means that the number on each side has the same value. For example,  $2 + 2 = 4$ . On one side of the equal sign, we have  $2 + 2$ , which adds up to 4. On the other side of the equal sign, we have 4. The numbers on both sides of the equal sign are the same.
- ✍ Encourage learners to use the pictures at the top of the page to help them complete the activity.

### Lesson outcomes



After this lesson, learners should be able to correctly identify the “greater than”, “equal to” and “less than” symbols. They will be able to count and compare objects to correctly identify the larger and smaller amount.

### Consolidation



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



Learners can complete pages 1–10 and 30–31 in the **Mathematics DBE Book 1**.

## PAGE 7

### Focus: Numbers, operations and relationships



**Transport and road safety** – “cars stop behind the line at the traffic lights”, etc.

### Equipment needed



HB writing pencil, eraser, purple, red and yellow coloured pencils

### Key focus skills



**Ordinal numbers** (“first” and “last”) and **position** (“after” and “between”)

### Introducing the concept



**Ordinal numbers:** Learners will need to be able to confidently count both forwards and backwards in 1s before introducing ordinal numbers. When working on ordinal numbers learners will need to connect known numbers 1, 2, 3 with new vocabulary: first, second, third and the shorter written version – 1st, 2nd, 3rd.

- ✍ Introduce ordinal numbers by arranging a few items in a line. You can use anything, different types of leaves, toy cars, picture cards. Beginning at one end, talk about which one is first in line, second in line, etc. After some practice, rearrange the cards in the line and ask the learners to tell you which one is first, second, third, etc. As learners become skilled with a few ordinal numbers, add more items.
- ✍ Additional, concrete activities could be introduced, such as a piece of rope/string stretched across the classroom, and coloured plastic pegs on string to indicate position. For example, “Place the red peg next to the yellow peg. Place the blue peg in between the 2 green pegs. Which peg is in 1st position?”
- ✍ Learners could also be placed in a row in front of class. Ask: “Who is in 2nd position? Who is first?”

✍ Ask learners when we use position in our daily life. Athletics races on sports day is one example.

**Position and direction:** Position in maths is the ability to describe where an object is in relation to another one. Direction involves describing how something moves, for example: forwards, backwards or in a full or half-turn.

✍ In *Tippie Does Maths* Level 2, learners will learn how to order and arrange objects in patterns and sequences, describing their position in relation to each other. They will also continue to build on their knowledge of the language of position, direction and movement.

✍ Ask learners to perform simple movements to demonstrate their understanding of position and direction. Instructions could include: “Slide to the right, jump to the left, reach above your head, take 2 steps backwards, make a half turn to face backwards,” etc.

### Teaching tips



Learners will use the row of animals at the top of the page to help them work out their answers for questions 1–7.

✍ Begin the lesson with a discussion around the language used in this activity. Make sure that learners understand the meaning of words like “between”, “before”, “after” and “position” (place).

✍ Read through the questions together and encourage learners to work slowly and carefully.

### Lesson outcomes



Learners should be able to describe the position of objects using ordinal numbers, and write ordinal numbers up to tenth place, using words and numbers. Learners should also be able to understand directional language and follow directions in a range of contexts.

### Consolidation



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



Learners can complete pages 34–35 in the **Mathematics DBE Book 1**.

## PAGE 8

### Focus: Numbers, operations and relationships

**LS** Myself and others – sharing, helping, fairness, respect

### Equipment needed



HB writing pencil, eraser, coloured pencil/highlighter

### Key focus skills



**Grouping, addition, doubling, halving**

## Introducing the concept



**Sorting and matching:** Sorting and matching items help to develop visual, perceptual skills, thinking and memory skills, while classification is the skill of sorting and grouping items by similar characteristics, such as colours, shapes, or sizes. Matching is a simple form of sorting. It means finding items that are the same or alike, such as a pair of gloves.

**Doubling:** Explain doubling in simple language: doubling means making twice as much of something. Use simple language, like, "Doubling means adding the exact same amount again, for example:  $2 + \text{another } 2 = 4$ . Demonstrate this by using concrete objects. Place a small group of objects (2 blocks) on a surface and then add another group of the same size next to it. Count the total together using the words " $2 \text{ plus another } 2 = 4$ " and "I have doubled 2, so now I have 4".

**Halving:** Explain halving in simple language: halving means splitting something into two equal parts. Say, "Halving means making 2 groups that are the same size. It is the opposite operation to doubling." Start with an even number of blocks (e.g., 4 blocks), and then show the learners how to split the objects into 2 equal groups. It is always preferable to introduce halving and doubling on different days because it can be confusing for learners to do both operations at the same time, especially if it has been a while since they have been exposed to them.

## Teaching tips



Learners will need to use page 25 that they have cut out from the back of the book to complete this activity. Ensure that they have this page readily available before beginning the activity.

-  Read through the questions together and discuss the language used. What are we doing when we are asked, "How many are there altogether?"
-  Remind learners to read the questions carefully. It may be a good idea to use a coloured pencil or highlighter to underline the important words like: "groups", "altogether", "double" and "halve".
-  Learners are grouping animals in this activity as an introduction to repeated addition, which eventually leads to multiplication. Discuss how, when we have several objects to count, it is often easier and quicker to count them in groups, rather than one by one.
-  Make sure you have concrete manipulatives on hand for learners to use when doubling and halving, such as interlocking maths cubes, beans, buttons, etc.

## Lesson outcomes



All the skills used in this lesson can be used to make multiplication problems easier to solve. After this lesson, learners will be able to identify groups of objects, and add the groups together to find the total. In addition, learners will be able to halve and double numbers up to 20. Repeated addition is a precursor to multiplication.

## Consolidation



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

## PAGE 9

### Focus: Numbers, operations and relationships

**IA** Use this lesson as an informal assessment task – mental maths (timed activity).

#### Equipment needed



HB writing pencil, eraser

#### Key focus skills



**Mental mathematics, rapid recall addition and subtraction**

#### Introducing the concept



**Mental maths:** Mental maths is the process of doing calculations in your head rather than on paper. Developing the skill of mental maths through simple, but fun maths activities is a fantastic way to not only stimulate learners' mental maths abilities, but another way of improving their knowledge of the number facts.

Include mental maths activities in your classroom every day.

- ✍ Try to use concrete apparatus, like dice, playing cards or dominoes. Place learners in a circle and roll dice. If it lands on 6, ask, "How much more do I need to make 10?" If you use 2 dice, roll them together and learners take turns to add the two numbers.
- ✍ You can also use a deck of cards. Assign the picture cards a value of 10. Learners sit in a circle on the carpet. Turn 2 cards face up and learners take turns to add the numbers together.
- ✍ Dominoes can be used as well. Use a permanent marker to write numbers from 1 to 12 on paper cups. Give learners a handful of dominoes each and tell them to place their domino in the cup with the number on the outside to add up to 12. For example, if a learner has a domino with 4 dots on 1 side and 6 dots on the other side, they will place the domino in the 10 cup.

#### Teaching tips



Mental maths keeps our brains quick and sharp. It also improves a learner's number sense and ability to understand the relationship between quantities.

- ✍ This is a timed activity. Learners should not take longer than 2–3 minutes to complete it.
- ✍ Encourage learners to do their own work rather than copying from a friend.
- ✍ This task is to encourage speed, while still focusing on accuracy
- ✍ Discuss the way in which the problems have been set out – we have used the words "and" and "make", but we could have also used + and =.
- ✍ Ask learners which alternative we could have used instead of take away ( – )
- ✍ Discuss the fact that if we are adding numbers our answer will be bigger, but if we are taking away numbers our answer will be smaller or less.
- ✍ Remember that not all learners work well under pressure. Encourage them to try to improve on their own time from the previous activity rather than competing against a friend.

## Lesson outcomes



Mental maths is a group of skills that allow learners to do maths “in their head” without using a pencil and paper. Mental maths is useful in both school and everyday life. Mental maths can help learners understand maths concepts better and get to the answer faster.

## Consolidation



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



Learners can complete pages 40–43 in the **Mathematics DBE Book 1**.

## PAGE 10

### Focus: Numbers, operations and relationships



**Seasons – what comes before/after concepts (e.g. what comes before winter?)**

## Equipment needed



HB writing pencil, eraser

## Key focus skills



Using a **number line** to answer simple addition problems, work out which number comes before or after, extend learners by using number lines to double a number. Order numbers from smallest to biggest.

## Introducing the concept



Number lines are an important way in which to help learners to understand different mathematical operations like addition and subtraction. A number line never ends. It goes on for infinity, which is why we use an arrow at each end to indicate this. As you move towards the right, the value of the number increases, whereas if you move towards the left the value of the number decreases. This is a wonderful visual representation of numbers on a straight line. Operations like addition, subtraction, multiplication and division using small numbers can be performed on a number line.

Number lines can also be used for kinesthetic (whole body) learning. Use tape or chalk to create a number line on either the classroom floor or outside on the playground. Present the class with a variety of maths problems. Start out with addition problems and then move on to subtraction problems. Choose a learner to stand on the number line at the beginning value. Ask another learner to read out the problem and the learner on the line then needs to jump along the line for the required number of jumps.

Number lines promote the active construction of mathematical meaning by strengthening learners’ mental representations of number relationships and mathematical operations.

## Teaching tips



Ensure that all learners know how to use a number line. To add a number, we move towards the right-hand side of the number line, whereas to subtract a number we move in a backwards direction (left side) on the number line.

- ✍ Draw a number line on the board. Place numbers from 1 to 20 on the line.
- ✍ Ask the learners questions like, “What number comes before 5?”, “What number is between 13 and 15?” and “What number comes after 18?”
- ✍ Give a group of learners a number card and have them line up in order, facing the class. Ask questions like “Who is standing between numbers 4 and 5?” and “Who is before number 10?”
- ✍ Read through the questions on page 10, asking the learners to fill in their answers as you go. Complete questions 1–5 in this way.
- ✍ Learners can complete the remainder of the page independently.

## Lesson outcomes



After this lesson, learners should be able to use a number line to answer questions relating to the position of numbers. In addition, the number line is used to double numbers and solve a simple addition sum. Learners will also use the number line to order numbers, arranging them from smallest to biggest.

## Consolidation



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



Learners can complete pages 12 and 38–39 in the **Mathematics DBE Book 1**.

# PAGE 11

## Focus: Data handling

## Equipment needed



HB writing pencil, eraser, coloured pencils

## Key focus skills



## Bar graphs

## Introducing the concept



Learners need to be able to complete a bar graph and answer questions related to the information on the graph. Bar graphs make data or information easy to understand and remember.

- ✍ Take a quick poll from learners on what their favourite season is.
- ✍ Use tally marks, and record results on the board.
- ✍ Tell learners that today they are going to use data to make bar graphs. Explain that data are facts or statistics that are collected to help us learn more about something.

- ✍ Say, “A bar graph is a visual display of bars or rows that compares quantities or numbers.”
- ✍ Teach learners about the parts of the bar graph: numbers – the scale on a graph shows a set of numbers that measure the data. We can use different number patterns, such as counting in 1s, 2s, 5s or 10s. The numbers are placed on the left-hand side of the graph, with the smallest number at the bottom.
- ✍ Labels are placed along the bottom of the graph to show exactly what is being measured. Rectangular bars are shown above each label to represent the value of that category on the graph. They are usually colour coded for easy differentiation.
- ✍ After learners understand the parts of the graph, they are ready to create their own.

Practice this skill by creating a different bar graph each day until you are confident that they all understand the concept. Always use real-life examples that are relatable to your learners, such as their favourite toys, food, animals, or something that interests them. This will ensure that they remain engaged in the lessons.

### Teaching tips



- ✍ Read through the questions with the learners to make sure that they understand all the terms “least” and “appear”.
- ✍ Make sure that learners have page 25 on hand to help them to complete the activity.
- ✍ Explain to the learners that they will first complete the graph before they answer the questions.
- ✍ Model the first step by completing it as a class activity, with the learners choosing a colour for giraffes, such as green. Say, “Count all the giraffes (20) and colour all the blocks above the giraffe in green.”
- ✍ Discuss how the animals are in groups and that it may be quicker to count them in groups rather than in 1s.
- ✍ Learners will complete the graph and then answer the questions by circling the correct answers.

### Lesson outcomes



After this lesson, the learners will be able to use the information given to them to complete a graph and answer questions.

### Consolidation



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



Learners can complete pages 32–33 in the **Mathematics DBE Book 1**.

## PAGE 12

### Focus: Numbers, operations and relationships

- LS** Ways we communicate – emphasise that listening shows respect and good communication skills.
- IA** Use this lesson as an informal assessment task – listening activity and ability to follow instructions

### Equipment needed



Scissors, glue, colouring pencils

## Key focus skills



This is a listening activity that determines the **learner's ability to understand verbal instructions** and carry them out competently, showing an understanding of concepts covered.

## Introducing the concept



Active listening activities promote mindful thinking. It encourages thoughtful, attentive communication and connects learners to the teacher through both verbal and non-verbal cues. It is a skill that needs to be practised, especially for younger learners. Use the following fun speaking and listening activities to introduce this crucial skill.

**Draw this:** Start with something familiar like a house. Your instructions could be: "Draw a large square in the middle of your page. Then draw a large triangle on top of the square." Continue with these instructions until learners recognise what they are drawing.

**Simon Says:** This classic game is perfect for practising listening skills. You or a learner can take the lead by giving a command and then waiting to see if the class has responded correctly. Learners who don't respond correctly are out of the game and stop competing.

**Broken telephone:** Learners form groups of about 5 and each group forms a circle, taking turns to create a message that will be whispered to each learner until the message returns to the learner who created the initial message. If the message at the end matches the message from the beginning, that group wins. The next learner has a turn to create a message and the game is repeated.

## Teaching tips



This page needs to be completed as a class activity. It could also be used as an assessment task.

- ✍ Learners will need to have the strip on page 27 with them before beginning the activity.
- ✍ Ensure that you have the full attention of the whole class before beginning and give instructions slowly and clearly.
- ✍ Observe the learners carefully and make sure that they are all keeping up with the instructions.
- ✍ If a learner does not follow instructions correctly, do not correct them, because the objective of this exercise is to check the skill of listening accurately.

## Lesson outcomes



The purpose of this activity is to determine the learners' understanding and execution of verbal instructions given.

## Consolidation



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