Numbers up to 999

Lesson plan and teacher's notes · Grade 2 Mathematics · 2 periods of 40 minutes

School	(write school name)	**Teacher**	(write name)
Date	(date)	**Class**	Grade 2
Subject	Mathematics	**Enrolment**	Boys ___ Girls ___ Total ___
Time	80 minutes	**Topic**	Numbers up to 999

Learners count and read numbers up to 999, write numbers in numerals and words, count in tens and hundreds to 1000, find place value with a chart, abacus and number box, and write expanded notation. Two periods.

Specific outcomes

By the end of the lesson, learners should be able to:

1. Count and read numbers up to 999
2. Write numbers in numerals and in words
3. Count in tens and hundreds up to 1000
4. Identify hundreds, tens and ones in three-digit numbers
5. Write numbers in expanded notation with and without words

Prior knowledge

- Learners can count to 99
- Learners know the number words up to twenty
- Learners can handle counters

Teaching and learning materials

- Number chart or number line
- Flashcards with numbers and number names
- Abacus and place value chart
- Stones, bottle tops, sticks, beans and matchboxes
- Chalk and board

References

Ministry of Education (CDC) Grade 2 Mathematics syllabus and module; 25Schools learners' note: Numbers up to 999.

Lesson development

Stage and time	Teacher activities	Learner activities
P1 Hook and counting to 999 14 min	Display coins, chalk sticks, books or pencils and ask: How many pencils can you see. If I give you two more, how many will you have now. Introduce numbers up to 999 with charts, number lines or counting objects. Count aloud from 1 to 99, then on to 999. Learners repeat and identify numbers you point to.	Count aloud, read numbers and answer.
P1 Numerals and words 14 min	Show number charts and flashcards. Demonstrate writing numbers in numerals and in words, for example 15 is fifteen and 248 is two hundred and forty-eight. Call out numbers for learners to write in words and the other way round. Let learners match numerals to number names in pairs and read the words aloud.	Write, match and read number words.
P1 Practice and conclusion 12 min	Give independent tasks to write random numbers in words and numerals. Let learners apply this to simple money amounts. Summarise.	Write numbers independently.
P2 Counting in tens and hundreds 14 min	Use a number chart or line. Count in tens up to 1000 and in hundreds up to 1000. Learners repeat and spot the patterns. Call out a starting number and let learners continue. Give missing-number sequences to fill in pairs or groups.	Count and complete sequences.
P2 Place value 14 min	Introduce three-digit numbers such as 345 and 608. Explain hundreds, tens and ones. Show place value using a chart (H, T, O), an abacus with beads, and a number box that breaks a number into parts. Let learners identify the place values of digits with guidance, then without.	Use the chart, abacus and number box.
P2 Expanded notation and conclusion 12 min	Explain expanded notation. Show 354 as 300 + 50 + 4 and as 3 hundreds + 5 tens + 4 ones. Learners identify hundreds, tens and ones, read the expanded forms aloud, then write their own in pairs. Ask them to explain answers. Summarise and give homework.	Write and explain expanded notation.

Teacher's content notes

Read these before the lesson. They are what you need to know, not what to copy onto the board.

Counting and reading

Numbers up to 999 are introduced with charts, number lines and counting objects. Learners count aloud, individually and in groups, and read numbers.

Numerals and words

Learners write numbers in numerals and in words, for example 15 is fifteen and 248 is two hundred and forty-eight, and match numerals to number names.

Counting in tens and hundreds

Count in tens up to 1000 and in hundreds up to 1000. Learners continue sequences and fill missing numbers.

Place value and expanded notation

Three-digit numbers have hundreds, tens and ones. Use place value charts (H, T, O), an abacus and a number box. Expanded notation: 354 is 300 + 50 + 4 or 3 hundreds + 5 tens + 4 ones.

Questions to ask during the lesson

Question	Expected answer
The teacher shows 345 on a place value chart and asks a learner to point at each digit. The class discusses the parts. (a) How many hundreds. (b) How many tens. (c) How many ones.	(a) 3. (b) 4. (c) 5.
A girl counts in tens from 30 with her friend and they stop at 70. Their teacher asks them to say the numbers in between. (a) What comes after 30. (b) What comes after 50. (c) What comes just before 70.	(a) 40. (b) 60. (c) 60.
A boy writes 800 + 50 + 4 on the board. The teacher asks him to explain what it means and to write it with words. (a) What number is it. (b) How many tens. (c) Write it with words.	(a) 854. (b) 5 tens. (c) 8 hundreds + 5 tens + 4 ones.

Worked examples for the board

Place value of 354

Step 1: Write 354 on the chart. Step 2: Put 3 under H, 5 under T and 4 under O. Step 3: Say 3 hundreds, 5 tens, 4 ones. Step 4: Write 300 + 50 + 4.

Writing a number in words

Step 1: Look at 248. Step 2: Say the hundreds: two hundred. Step 3: Say the tens and ones: forty-eight. Step 4: Write two hundred and forty-eight.

Board plan

Write the title. Draw a place value chart with H, T and O. Write 354 and below it 300 + 50 + 4 and 3 hundreds + 5 tens + 4 ones. Write 248 and its words at the side.

Number	Hundreds	Tens	Ones
345	3	4	5
608	6	0	8
354	3	5	4

The finished board: place value

Mistakes to expect

Learners often think	Put it right
In 608 the zero means nothing is there so you can ignore it.	Show 608 on the place value chart. The zero shows there are no tens. Without it, the number would be 68.
Counting in tens means adding one each time.	Count with groups of ten sticks and let learners see that each group adds 10.
Numbers are written the way they are heard, such as 248 as 200408.	Use the chart and number box to break 248 into 200, 40 and 8, then write it in numerals.

Differentiation

Learners who struggle

Work only with numbers up to 99 first. Use sticks in bundles of ten and single sticks. Let learners point on a number line as they count.

Learners who finish early

Ask learners to write the biggest and the smallest three-digit number they can with three given digit cards and to write each in expanded notation.

Hearing or visual impairment

The Ministry module is written for learners with a visual impairment. Let learners feel the abacus beads, tactile number cards and braille or raised numerals while counting aloud. For learners with a hearing impairment, face them and write each number on the board.

No projector, no printing

Use bottle tops, sticks, stones and beans for counting. Draw a place value chart on the board and an abacus on the ground with strings and beads.

If time is short

Keep counting to 999, writing numerals and words, and the place value chart. Move counting in tens and hundreds and expanded notation to the next lesson.

Evaluation

Question or task	A correct answer shows
Njavwa has 346 bottle tops. Her teacher asks her to show the number on a place value chart. (a) How many hundreds. (b) How many tens. (c) Write it in expanded notation.	(a) 3. (b) 4. (c) 300 + 40 + 6.
The teacher calls out 'two hundred and forty-eight' and asks Bwalya to write it, then to count from 240 in tens. (a) Write the numeral. (b) Say the next three numbers in tens. (c) How many ones does 248 have.	(a) 248. (b) 250, 260, 270. (c) 8.

Homework

Mutale counts a pile of 154 beans at home for her mother. She writes the number and explains it to her little sister. (a) Write 154 in words. (b) How many tens does it have. (c) Write 154 as 100 + something + something.

Extra practice with answers

Question	Answer
1. Mulenga is counting bottle tops in hundreds for a school game. He starts at 100 and counts up to 500 with his group. His teacher listens. (a) What is the number after 100. (b) What is the number after 300. (c) What is the last number he says.	(a) 200. (b) 400. (c) 500.
2. Chilufya writes 15 on the board and her friend writes fifteen. The teacher asks them to match numerals with number names for 20, 99 and 248. (a) Write 20 in words. (b) Write 99 in words. (c) Write 248 in words.	(a) Twenty. (b) Ninety-nine. (c) Two hundred and forty-eight.
3. A teacher puts 608 beans in a number box and asks learners to break the number into parts. A girl answers for the class. (a) How many hundreds. (b) How many tens. (c) Write 608 as 600 + 0 + something.	(a) 6. (b) 0. (c) 600 + 0 + 8.
4. Thandiwe writes 354 in expanded form with words and her partner writes it without words. They compare their work. (a) Write 354 with words. (b) Write 354 without words. (c) Which digit is in the tens place.	(a) 3 hundreds + 5 tens + 4 ones. (b) 300 + 50 + 4. (c) 5.

Answers to the learners' check-yourself questions

1. Write 15 in words.
   Fifteen.
2. What comes after 40 when we count in tens.
   50.
3. What comes after 300 when we count in hundreds.
   400.
4. How many tens are in 354.
   5 tens.

5. Chanda has 248 bottle tops in a box for her class game. Her teacher asks her to write the number and say its parts. (a) Write 248 in words. (b) How many hundreds does it have. (c) How many ones does it have.
   (a) Two hundred and forty-eight. (b) 2 hundreds. (c) 8 ones.
6. Mwila writes the number 608 on her place value chart. Her teacher asks her to explain each place and then write it in expanded notation. (a) How many hundreds. (b) How many tens. (c) Write 608 as 600 + something + something.
   (a) 6 hundreds. (b) 0 tens. (c) 600 + 0 + 8.

Teacher's reflection

What went well:

What I will change next time:

Learners who need follow-up: