

Place Value to 1,000: math lesson, Grade 2 – download the PDF

How can you write a big number like 234 with just three digits? The secret is **place value**: the spot where a digit sits tells you how much it is worth. In this chapter you will build, read, write and count numbers all the way to 1,000.

1. Hundreds, tens and ones

A three-digit number has three places. Reading from right to left, you find the **ones**, the **tens** and the **hundreds**. The digit in each place tells you how many groups of that size there are.

D Place value

In a three-digit number, the **hundreds digit** counts groups of 100, the **tens digit** counts groups of 10, and the **ones digit** counts single ones. The same digit is worth more or less depending on its place.

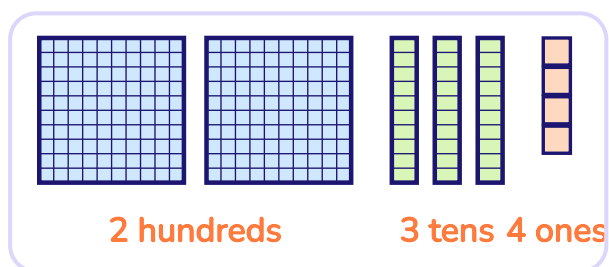
Hundreds	Tens	Ones
2	3	4

In the number 234, the digit 2 is in the hundreds place, so it means 2 hundreds, or 200. The digit 3 means 3 tens, or 30. The digit 4 means 4 ones, or 4.

Digit	Place	Value
2	hundreds	200
3	tens	30
4	ones	4

2. Base-ten blocks

Base-ten blocks help you see numbers. A small cube is **1 one**. A long rod is **1 ten**, which is the same as 10 ones. A flat square is **1 hundred**, which is the same as 10 tens or 100 ones. Ten flats stack up to make a big cube worth **1,000**.



E Example 1: counting blocks

The picture shows 2 flats, 3 rods and 4 cubes. That is 2 hundreds, 3 tens and 4 ones, so the number is 234.

P Trading rules

- 10 ones = 1 ten
- 10 tens = 1 hundred
- 10 hundreds = 1 thousand (1,000)

3. Reading and writing numbers to 1,000

To read a number, look at each place from left to right. To write a number, put one digit in each place. If a place has nothing in it, write a **0** to hold that place. Without the zero, the other digits would slide into the wrong spots.

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Example 2: the zero matters

Compare 706, 760 and 670. In 706 there are 7 hundreds, 0 tens and 6 ones. In 760 there are 7 hundreds, 6 tens and 0 ones. In 670 there are 6 hundreds, 7 tens and 0 ones. Same digits, three different numbers!



Watch out

5 hundreds and 8 ones is **508**, not 58. The 0 in the tens place shows there are no tens. Also remember that the same digit can have different values: in 550, the first 5 is worth 500 but the second 5 is worth only 50.

4. Expanded form

Expanded form shows the value of each digit as an addition. It splits a number into hundreds, tens and ones.

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How to write a number in expanded form

1. Find the value of the hundreds digit.
2. Find the value of the tens digit.
3. Find the value of the ones digit.
4. Add the values with plus signs. Skip any place that is 0.

E Example 3: expanded form

$582 = 500 + 80 + 2$ because 5 hundreds is 500, 8 tens is 80 and 2 ones is 2.

$407 = 400 + 7$ because there are no tens, so we do not need to write **0** tens.

You can also go backward. If you see $900 + 30 + 1$, add the parts and write the number: 931.

5. Number names in words

You say a three-digit number by naming the hundreds, then the rest. Use the word “hundred” and then say the tens and ones like a two-digit number. You do not say “and” in a whole number.

Number	Name in words
100	one hundred
214	two hundred fourteen
305	three hundred five
460	four hundred sixty
782	seven hundred eighty-two
1,000	one thousand

Tens words to know: twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety. When the tens and ones are both used (from 21 to 99), join them with a hyphen: twenty-one, sixty-four, ninety-nine.

E**Example 4: writing in words**

618 is “six hundred eighteen.” 740 is “seven hundred forty.” 925 is “nine hundred twenty-five.”

6. Different ways to compose a number

A number can be built in more than one way. Because 1 hundred equals 10 tens, you can trade a flat for 10 rods. Because 1 ten equals 10 ones, you can trade a rod for 10 cubes. The total stays the same.

E**Example 5: three ways to make 346**

- 3 hundreds, 4 tens, 6 ones: $300 + 40 + 6 = 346$
- 2 hundreds, 14 tens, 6 ones: $200 + 140 + 6 = 346$
- 34 tens, 6 ones: $340 + 6 = 346$

!**Zyro's tip**

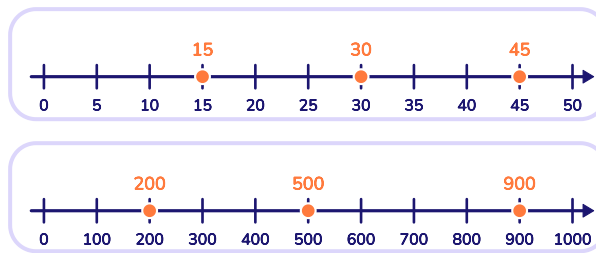
On my planet we trade ten of anything for one bigger group. When you need more ones to take away, trade one ten for ten ones. The number does not change, only the blocks do!

7. Skip counting by 5s, 10s and 100s

Skip counting means counting by jumps instead of one at a time. It helps you count big collections fast and shows patterns in place value.

- **By 5s:** the ones digit switches between 5 and 0, as in 5, 10, 15, 20, 25.

- **By 10s:** the ones digit stays the same and the tens digit goes up by 1, as in 270, 280, 290, 300, 310.
- **By 100s:** only the hundreds digit changes, as in 418, 518, 618, 718, 818.



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Example 6: skip counting

Count by 5s from 135: 135, 140, 145, 150, 155.

Count by 10s from 270: 270, 280, 290, 300, 310. Notice that after 290 the hundreds digit changes from 2 to 3.

Key takeaways

- A three-digit number has hundreds, tens and ones. The place of a digit gives its value.
- 10 ones make 1 ten, 10 tens make 1 hundred and 10 hundreds make 1,000.
- Use 0 as a placeholder: 508 is not 58.
- Expanded form: **582 = 500 + 80 + 2**.
- Say numbers in words with “hundred” first and hyphens from 21 to 99, like “seven hundred eighty-two.”
- A number can be composed in many ways: 346 is also 34 tens and 6 ones.
- Skip count by 5s, 10s and 100s and look for the digit that changes.



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