

Dear parent or guardian: This is a summary of the key ideas your child is learning in mathematics. You can use this summary as background as you support your child's work.

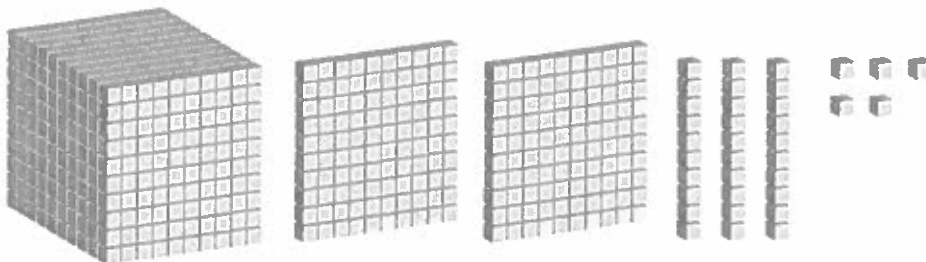
2 Representing Four-Digit Numbers Using Thousands, Hundreds, Tens, and Ones

Modelling Whole Numbers

Base Ten Block Models

A four-digit number can be made up of thousands, hundreds, tens, and ones.

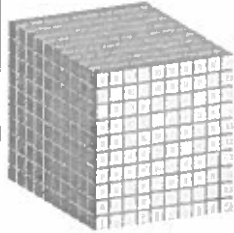
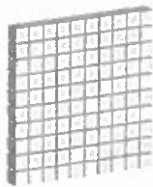

For example:



1235 is 1 thousand + 2 hundreds + 3 tens + 5 ones.

Sometimes parts are missing. If you model the number on a place-value chart, it makes that more apparent.

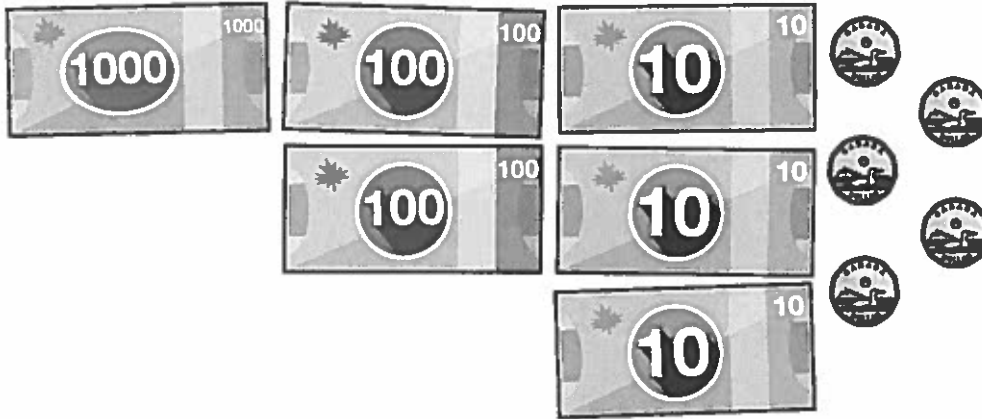
For example:

Thousands	Hundreds	Tens	Ones
			

1104 is 1 thousand + 1 hundred + 0 tens + 4 ones.

Modelling Whole Numbers (continued)

Here's a different model for 1235 (using an imaginary \$1000 bill) as \$1235:



Place-Value Chart and Counter Model

Here's yet another model for 1235:

Thousands	Hundreds	Tens	Ones
●	● ●	● ● ●	● ● ● ● ●

1235 is 1 thousand + 2 hundreds + 3 tens + 5 ones.

Note that a place-value chart is essential when using counters (unlike with base ten blocks). The chart tells the value of the counters in each column.

Renaming Numbers

You can use models to help you rename numbers in different ways.

For example:

If you trade 1 thousand for 10 hundreds, you show 1235 as 12 hundreds + 3 tens + 5 ones:

Thousands	Hundreds	Tens	Ones
	●●●●●● ●●●●●● ●●	●●●	●●●●●

1235 is 12 hundreds + 3 tens + 5 ones.

If you trade 1 hundred for 10 tens, you show 1235 as 11 hundreds + 13 tens + 5 ones:

Thousands	Hundreds	Tens	Ones
	●●●●●● ●●●●●● ●	●●●●●● ●●●●●● ●●●●	●●●●●

1235 is 11 hundreds + 13 tens + 5 ones.

If you trade 1 hundred for 10 tens, you show 1235 as 10 hundreds + 23 tens + 5 ones:

Thousands	Hundreds	Tens	Ones
	●●●●●● ●●●●●●	●●●●●● ●●●●●● ●●●●●● ●●●●	●●●●●

1235 is 10 hundreds + 23 tens + 5 ones.

You could trade more hundreds for tens and/or tens for ones for more ways to show 1235.

For example:

Thousands	Hundreds	Tens	Ones
	●●●●●● ●●●●●● ●●	●●	●●●●●● ●●●●●● ●●●●●●

1235 is 12 hundreds + 2 tens + 15 ones.

Renaming Numbers With Zero Digits

Some four-digit numbers (such as 1023) are missing hundreds, some (such as 1203) are missing tens, and some (such as 1320) are missing ones. However, such numbers can always be renamed to have hundreds, tens, or ones.

For example:

1023 = 1 thousand (+ 0 hundreds) + 2 tens + 3 ones

If you trade 1 thousand for 10 hundreds, you end up with

1023 = 10 hundreds + 2 tens + 3 ones.

Thousands	Hundreds	Tens	Ones
1	0	2	3
	10	2	3

1203 = 1 thousand + 2 hundreds (+ 0 tens) + 3 ones

If you trade 1 hundred for 10 tens, you end up with

1203 = 1 thousand + 1 hundred + 10 tens + 3 ones.

Thousands	Hundreds	Tens	Ones
1	2	0	3
1	1	10	3

1230 = 1 thousand + 2 hundreds + 3 tens (+ 0 ones)

If you trade 1 ten for 10 ones, you end up with

1230 = 1 thousand + 2 hundreds + 2 tens + 10 ones.

Thousands	Hundreds	Tens	Ones
1	2	3	0
1	2	2	10

Standard Form and Expanded Form

When a number is written in the way we usually write it, for example, 4103, we say it is in standard form.

When we write 4103 as $4000 + 100 + 3$ or as 4 thousands + 1 hundred + 3 ones, we are writing it in expanded form.

The expanded form of a number tells the value of each digit, although we usually do not include the value of zero digits. For example, 4008 is 4 thousands + 8 ones or $4000 + 8$.

Definitions

expanded form: a way to represent a number to show the value of each digit; for example, 5627 is $5000 + 600 + 20 + 7$ or 5 thousands + 6 hundreds + 2 tens + 7 ones

rename: to write a number in a different way without changing its value; for example, 3000 can be renamed as 30 hundreds, and 450 can be renamed as $400 + 50$

standard form: the usual form of a number; i.e., the numeral, for example, 3456