Expanded Form & Standard Form

Expanded and Standard Form

When we see a number in the form 87 123, this is called standard form.

There is another way of writing a number; we call this expanded form. What does the word expanded mean?

So, in expanded form we see the place value of ***each*** digit!

Expanded Form

Let’s jump straight into an example.

Let’s say we have 5 467 (this is now in Standard Form)

How many thousands (1 000) do we have? 5
How many hundreds (100) do we have? 4
How many tens (10) do we have? 6
How many ones (1) do we have? 7

Expanded Form

Example continued

We now know we have:
5 thousands (5 x 1000)
4 hundreds (4 x 100)
6 tens (6 x 10)
7 ones (7 x 1)

Let's put it all together:

Standard Form	Expanded Form
5 467	(5 x 1000) + (4 x 100) + (6 x 10) + (7 x 1)

Expanded Form

Example #2

Let’s say we have 27 120 (this is now in Standard Form)

How many ten thousands (10 000) do we have? 2
How many thousands (1 000) do we have? 7
How many hundreds (100) do we have? 1
How many tens (10) do we have? 2
How many ones (1) do we have? 0

Example continued

We now know we have:
2 ten thousands (2 x 10 000)
7 thousands (7 x 1 000)
1 hundreds (1 x 100)
2 tens (2 x 10)
0 ones (0 x 1)

Let’s put it all togther:

Standard Form	Expanded Form
27 120	(2 x 10 000) + (7 x 1 000) + (1 x 100) + (2 x 10) + (0 x 1)

Rounding & Estimating

We use rounding and estimating almost daily in our lives. Can we think of some examples where this done?

How do we Round?

Pre-step: Underline the digit (target place) that you want to round (ones, tens, hundreds etc)

Step 1 - Look at the digit to the right of the target place/value.

Step 2 - If the digit is greater than or equal to 5 (5, 6, 7, 8 9), increase the target value by 1 (5 goes to 6, 7 goes to 8 etc)

Step 3 - If the digit is less than 5 (0,1, 2, 3, 4), we do not change the target value (it stays the same)

Step 4 - The digits that originally appeared after the digit we want to round, are no longer written (we replace the digits by 0)

Rounding Examples

Example 1

Round 9 875 to the nearest ten (10)

Pre- step: We want to round the 7 (so we underline)
9 8<u>7</u>5

Step 1: Look at the number to the right of 7
9 8<u>7</u>5

Step 2: Is it greater than, equal to or less than 5? Equal to, therefore 7 becomes 8.

Therefore, 9 875 become 9 880

Rounding Examples

Example 2

Round 52 123 to the nearest thousand (1 000)

Pre- step: We want to round the 2 (so we underline)
5<u>2</u> 123

Step 1: Look at the number to the right of 2
5<u>2</u> 123

Step 2: Is it greater than, equal to or less than 5? Less than, so the 2 remains a 2.

Therefore, 52 123 becomes 52 000

Homework

Worksheets:
Page 13 - all
Page 14 - # 7 & 8

Test is on Wednesday, September 16th Day 4
No Calculator - Memory Aid is allowed
Topics:
Place Value
Expanded & Standard Form
Rounding & Estimating
Adding & Subtracting
Multiplying & Dividing
Graphing Whole numbers (Number line)
BEDMAS