



Expanded Notation and Place Value

From www.singaporemath.com

Materials:

- one set of foam discs or number cards (see end of packet, both color and B&W)
- 1 activity worksheet in Clearview sleeve or sheet protector and dry erase marker per student

Step 1) Place the ones, tens, and hundreds discs or cards in a bag or box. Select 5 disks for each student. (Students may choose their own cards, but this usually slows things down.) Student takes discs and arranges them on the activity worksheet. See below. Next student writes a number in expanded notation and in standard notation.

Expanded Notation and Place Value Activity								
hundred million	ten million	one million	hundred thousands	ten thousands	one thousands	hundred	ten	one
						100		1
						100		1
						100		

Expanded Notation:
 $300 + 00 + 2$

Standard Notation:
302

Step 2) Extend the activity by asking the following questions. How do you say this number? What digit is in the hundreds column, the tens column, the ones column? Why is there a 0 in the tens column? Whose number is the biggest? Whose number is the smallest? Etc.

Step 3) Continue by adding larger numbers into the bag. You may also increase the number of discs or cards given to each student.

Hints for Reading Large Numbers

To read large numbers such as 45,602,058, have students cover-up each chunk of digits.

For example,

45,602,058

Say this number, then say
“millions”. “45 million”

“45 million...”

45,602,058

Say this number, then say
“thousands”. “602 thousand”

“45 million 602 thousand...”

45,602,058

Just say this number. “58”

“45 million 602 thousand 58”

Expanded Notation and Place Value Activity

hundred thousand	ten thousand	one thousand	hundred	ten	one

Expanded Notation:

Standard Notation:

Expanded Notation and Place Value Activity

hundred million	ten million	one million	hundred thousand	ten thousand	one thousand	hundred	ten	one

Expanded Notation:

Standard Notation:

1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1

1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1