



MATH NEWS



Grade 4, Module 1, Topic B

4th Grade Math

Module 1: Place Value of Multi-Digit Whole Numbers

Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 1 of Eureka Math (Engage New York) covers place value, rounding, and algorithms for addition and subtraction.



Focus Area Topic B: *Comparing Multi-Digit Whole Numbers*

Words to Know:

Digit- a numeral between 0 and 9

Place value - the numerical value that a digit has by virtue of its position in a number

Comparing numbers – determining which number is greater than the other and using symbols to express the comparison

- symbol for greater than >
- symbol for less than <
- symbol for equal to =

Using Place Value Charts to Compare Numbers

Students will use the place value chart to compare the value of each digit to decide which number is of greater value. In the following example we use the place value chart to compare 23,502 and 13,420. We represent each amount on the place value chart. We can tell that 23,502 is larger because it has more ten thousands.

| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|----------|-------------------|----------------------------|----------------------|---------------------------|----------|--------|
| | | 10,000 10,000 10,000 | 1000 1000 1000 | 100 100 100 100 100 | | 1 1 |
| | | 10,000 | 1000 1000 1000 | 100 100 100 100 | 10 10 | |

We compare using the greater than symbol.

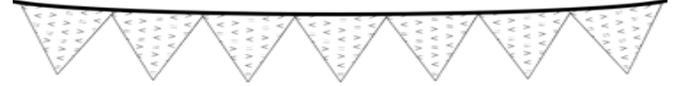
$$23,502 > 13,420$$

OBJECTIVES OF TOPIC B

- ▶ Compare numbers based on meanings of the digits, using >, <, or = to record the comparison..
- ▶ Find 1, 10, and 100 thousand more or less than a given number.

Focus Area Topic B:

Comparing Multi-Digit Whole Numbers



Ordering Multiple Numbers

When ordering multiple numbers, students may use a place value chart to compare the values of the numbers. Using the chart helps students focus on the value of each digit. In this example, we compare three numbers.

| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|----------|-------------------|---------------|-----------|----------|------|------|
| | | 6 | 3 | 2 | 9 | 8 |
| | | 6 | 3 | 7 | 1 | 8 |
| | | 6 | 3 | 4 | 5 | 8 |

All three numbers have 6 ten thousands and 3 thousands so we compare the hundreds because they are different. The students might be asked to record these numbers in order from least to greatest like this.

| |
|--------|
| 63,298 |
| 63,458 |
| 63,718 |



Comparing Numbers

When comparing numbers in different forms, students may find it helpful to draw mini place value charts. In the following example, the student is asked to compare a number written in expanded form to a number written in word form.

Example Problem and Answer

Compare

$$80,000 + 3,000 + 900 + 5 \quad \bigcirc \quad \text{eight hundred three thousand, four hundred one}$$

The student uses a mini place value chart to assist in comparing the numbers.

| | | | | | | |
|--|---|---|---|---|---|---|
| | | 8 | 3 | 9 | 0 | 5 |
| | 8 | 0 | 3 | 4 | 0 | 1 |

$$80,000 + 3,000 + 900 + 5 \quad < \quad \text{eight hundred three thousand, four hundred one}$$

The student answers using the less than symbol.

Focus Area Topic B:

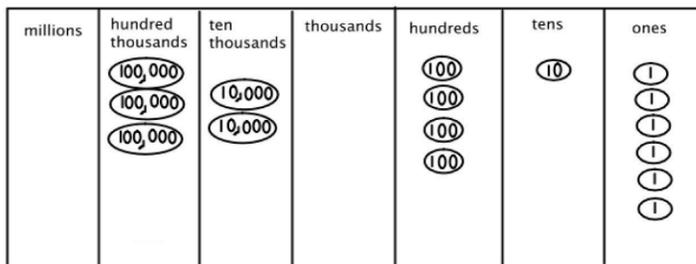
Comparing Multi-Digit Whole Numbers

Finding More or Less with the Place Value Chart

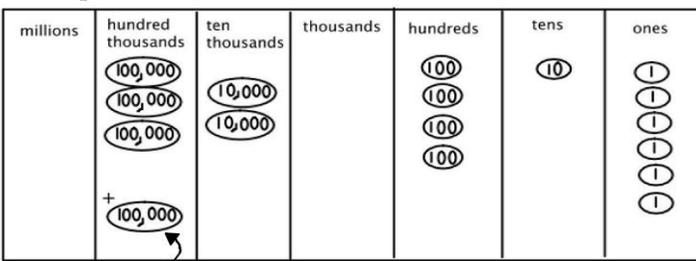
Students will use number discs to increase or decrease a number by 1, 10, 100, 1,000; 10,000; or 100,000.

In the following example, a student is asked to find 100,000 more than three hundred twenty thousand, four hundred sixteen.

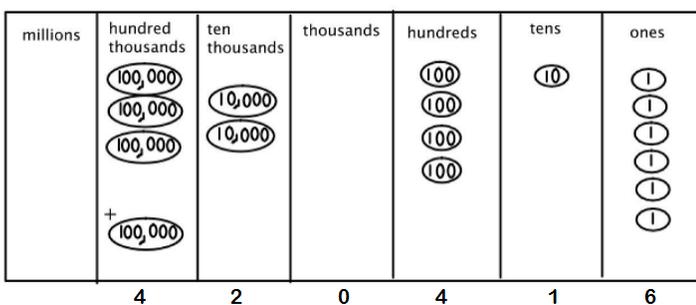
First, the student represents 320,416 by drawing number discs on the place value chart. ↓



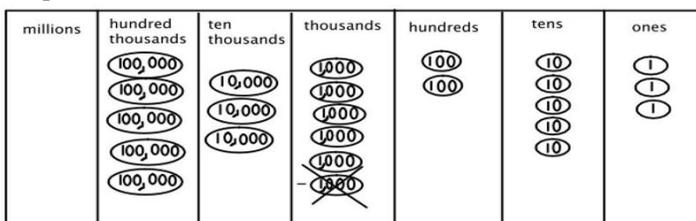
Then the student adds a disk representing 1 hundred thousand on the place value chart. ↓



Now, the student will count the disks in each place on the chart to find the answer. ↓ 420,416



Finding 1 thousand less than 536,253 can be done using the place value chart as well. First represent 536,253 with disks on the place value chart then cross out a 1,000 disk.



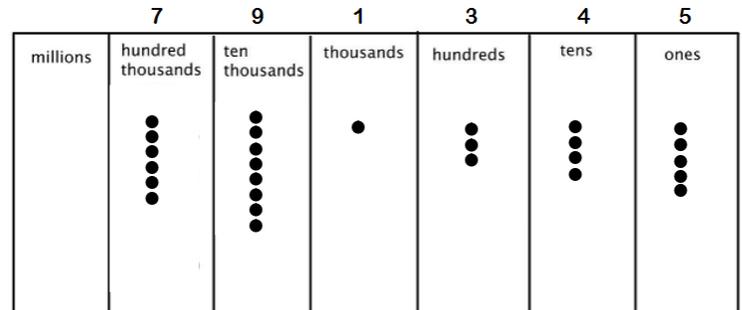
Now we have 535,253.

Module 1: Place Value of Multi-Digit Whole Numbers

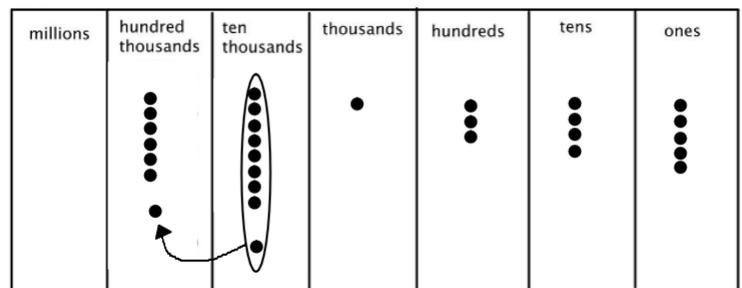
Regrouping with Place Value Charts

In this example, the student is asked to find 10 thousand more than 791,345.

First, this student represented 791,345 on the place value chart using dots. ↓



Then, the student added 1 ten thousand. In doing so, it made 10 dots in the ten thousands place. So the student grouped those 10 together to and exchanged them for 1 hundred thousand dot. The dots in the circle became a new dot in the hundred thousand column. ↓



10 thousand more than 791,345 is 801,345.

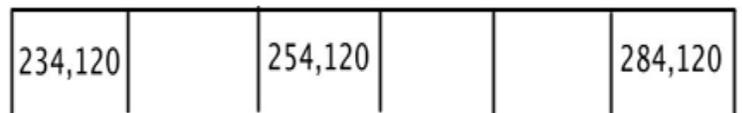


Place Value Charts and Patterns

Students will need to be able to complete and explain patterns using the place value chart.

Example Problem and Answer

Fill in the empty boxes to complete the pattern and explain how you found your answer.



The missing number are 244,120; 264,120; 274,120

The numbers increase by 10,00 each time.

