4ᵗʰ Grade Chapter 1

"Place Value, Add and Sub. To One Million" Reteach Lessons 1.1-1.8

Name _____

Model Place Value Relationships

A hundred grid can help you understand place-value relationships.

- One small square has been shaded to represent 1.

- Shade the rest of the first column. Count the number of small squares. There are <u>10</u> small squares. The model for 10 has <u>10</u> times as many squares as the model for <u>1</u>.

- Shade the remaining 9 columns. Count the number of small squares. There are <u>100</u> small squares. The model for 100 has <u>10</u> times as many squares as the model for <u>10</u>.

- If you shade ten hundred grids, you will have shaded 1,000 squares. So, the model for 1,000 has <u>10</u> times as many squares as the model for <u>100</u>.
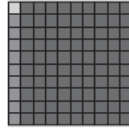
A place-value chart helps you find the value of each digit in a number.

THOUSANDS			ONES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
		8	5	1	6

In the number 8,516:

The value of the digit 8 is 8 thousands, or <u>8,000</u>.

The value of the digit 5 is 5 hundreds, or <u>500</u>.

The value of the digit 1 is 1 ten, or <u>10</u>.

The value of the digit 6 is 6 ones, or <u>6</u>.

Name _____

Read and Write Numbers

Look at the digit 6 in the place-value chart below. It is in the hundred thousands place. So, its value is <u>6 hundred thousands</u>.

In **word form**, the value of this digit is six hundred thousands.

In **standard form**, the value of the digit 6 is 600,000.

PERIOD

THOUSANDS			ONES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
6	5	9,	0	5	8

Read the number shown in the place-value chart. In word form, this number is written as six hundred fifty-nine thousand, fifty-eight.

Note that when writing a number in words, a comma separates periods.

You can also write the number in **expanded form**:

600,000 + 50,000 + 9,000 + 50 + 8

Compare and Order Numbers

Compare 31,072 and 34,318. Write <, >, or =.

Step 1 Align the numbers by place value using grid paper.

Step 2 Compare the digits in each place value. Start at the greatest place.

Are the digits in the ten thousands place the same?
Yes. Move to the thousands place.
Are the digits in the thousands place the same?
No. 1 thousand is less than 4 thousands.

start here

	3	1	0	7	2
	3	4	3	1	8

3 = 3

	3	1	0	7	2
	3	4	3	1	8

1 < 4

Step 3 Use the symbols <, >, or = to compare the numbers.

< means *is less than.*   > means *is greater than.*   = means *is equal to.*

There are two ways to write the comparison.

31,072 (<) 34,318   or   34,318 (>) 31,072

Round Numbers

When you round a number, you replace it with a number that is easier to work with but not as exact. You can round numbers to different place values.

Round 4̲78,456 to the place value of the underlined digit.

Step 1 Identify the underlined digit.
The underlined digit, 4, is in the hundred thousands place.

Step 2 Look at the number to the right of the underlined digit.

If that number is 0–4, the underlined digit stays the same.

If that number is 5–9, the underlined digit is increased by 1.

The number to the right of the underlined digit is 7, so the underlined digit, 4, will be increased by one; 4 + 1 = 5.

Step 3 Change all the digits to the right of the hundred thousands place to zeros.

So, 478,456 rounded to the nearest hundred thousand is 500,000.

Rename Numbers

You can use place value to rename whole numbers.
Here are different ways to name the number 1,400.

- **As thousands and hundreds**
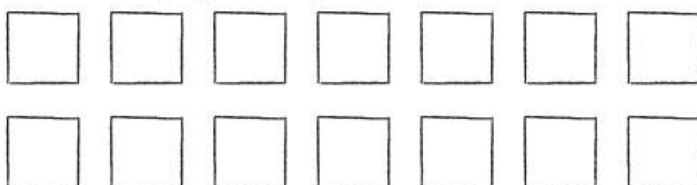 **Think:** 1,400 = _1_ thousand _4_ hundreds.
  You can draw a quick picture to help.

T				

- **As hundreds**
  Think: 1,400 = _14_ hundreds.
  You can draw a quick picture to help.

- **As tens**
  Think: 1,400 = _140_ tens.

- **As ones**
  Think: 1,400 = _1,400_ ones.

Add Whole Numbers

Find the sum. 63,821 + 34,765

Step 1 Round each addend to estimate.
60,000 + 30,000 = _90,000_

Step 2 Use a place-value chart
to line up the digits by
place value.

Step 3 Start with the ones place.
Add from right to left.
Regroup as needed.

	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
			1			
	6	3,	8	2	1
+	3	4,	7	6	5
	9	8,	5	8	6

The sum is _98,586_. Since 98,586 is close
to the estimate 90,000, the answer is reasonable.

Subtract Whole Numbers

Find the difference. 5,128 − 3,956

Estimate first.
Think: 5,128 is close to 5,000. 3,956 is close to 4,000.
So, an estimate is 5,000 − 4,000 = 1,000.

Write the problem vertically. Use grid paper to align digits by place value.

Step 1 Subtract the ones.

5,	1	2	8
− 3,	9	5	6
			2

8 − 6 = 2

Step 2 Subtract the tens.

	0	12	
5,	1̷	2	8
− 3,	9	5	6
		7	2

There are not enough tens to subtract.
Regroup 1 hundred as 10 tens.
12 tens − 5 tens = 7 tens

Step 3 Subtract the hundreds.

4	10̷	12	
5,	1̷	2	8
− 3,	9	5	6
	1	7	2

There are not enough hundreds to
subtract. Regroup 1 thousand as
10 hundreds.
10 hundreds − 9 hundreds = 1 hundred

Step 4 Subtract the thousands.

4	10̷	12	
5,	1̷	2	8
− 3,	9	5	6
1	1	7	2

4 thousands − 3 thousands =
1 thousand

The difference is __1,172__. Since 1,172 is close
to the estimate of 1,000, the answer is reasonable.

Problem Solving • Comparison Problems with Addition and Subtraction

For a community recycling project, a school collects aluminum cans
and plastic containers. This year the fourth grade collected 5,923 cans
and 4,182 containers. This is 410 more cans and 24 more containers
than the fourth grade collected last year. How many cans did the
fourth grade collect last year?

Read the Problem		
What do I need to find?	**What information do I need to use?**	**How will I use the information?**
I need to find the number of cans the fourth grade collected last year.	The fourth grade students collected __5,923__ cans this year. They collected __410__ more cans this year than the fourth grade collected last year.	I can draw a __bar model__ to find the number of cans the fourth grade collected last year.

Solve the Problem
I can draw a bar model and write an equation to represent the problem.

5,923

410	
	5,513

5,923 − 410 = __5,513__

So, the fourth grade collected __5,513__ aluminum cans last year.