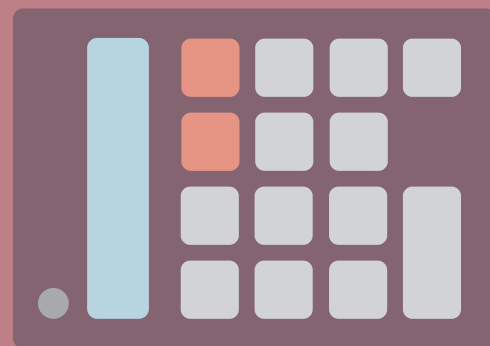




# MATH

Student Book



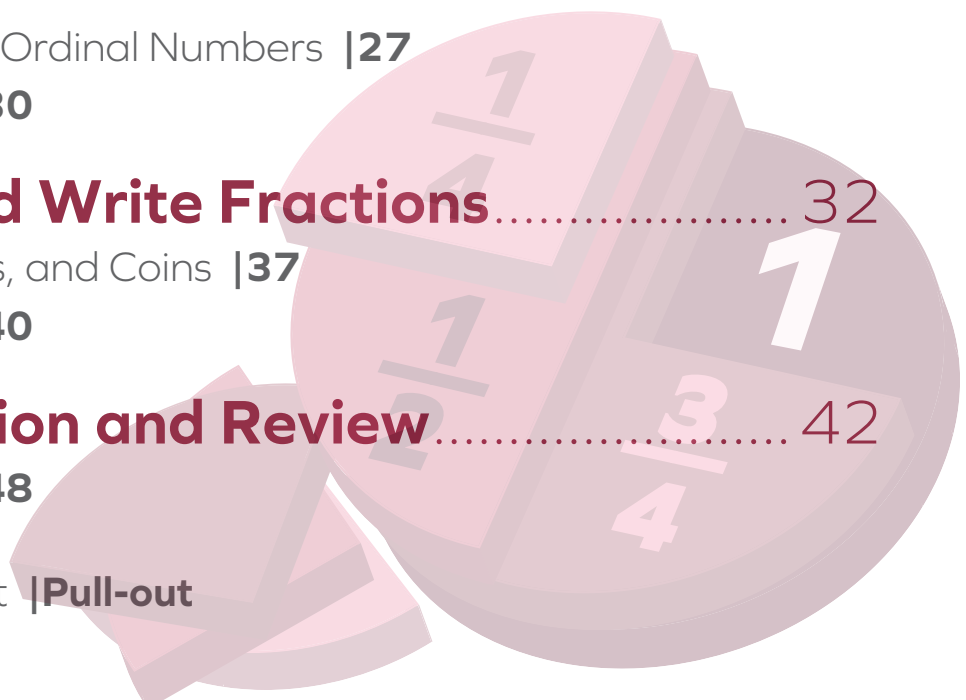
► **4th Grade | Unit 1**

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# MATH 401

## WHOLE NUMBERS AND FRACTIONS

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# 1. PLACE VALUE TO 1,000'S

There are 26 letters in the alphabet, but only 10 digits to our number system.

The digits are 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Digits mean the same thing to mathematics as the letters of the alphabet mean to reading. Letters can be arranged to form words, and **digits** can be arranged to form numbers.

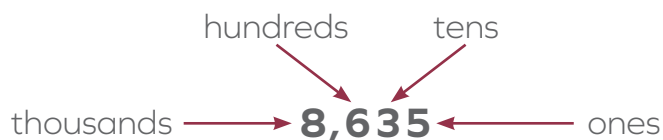
## Objectives

**Read these objectives.** When you have completed this section, you should be able to:

- Know and understand digits and place value to 1,000.
- Review addition and subtraction.

## Place Value

Digits have value because of their place in the number.



Think of all the numbers you can write using 10 digits.



**Complete these activities.**

- 1.1** Write a number using 3 as the first digit, 4 as the second digit, and 7 as the last digit. \_\_\_\_\_  
 What position is the 3 in? \_\_\_\_\_ the 4? \_\_\_\_\_  
 the 7? \_\_\_\_\_  
 Write the number in words. \_\_\_\_\_

The digit **zero** has no value. We call it a **place holder**.

- 1.2** Using the number you have written in 1.1, put a zero between the digits 3 and 4. \_\_\_\_\_  
 What position is the 3 in? \_\_\_\_\_ the 0? \_\_\_\_\_  
 the 4? \_\_\_\_\_ the 7? \_\_\_\_\_  
 Write the number in words. \_\_\_\_\_

Numbers that have more than one digit are called **multi-digit** numbers.

- 1.3** Write a multi-digit number with 8 in the thousands' place, 4 in the ones' place, 7 in the tens' place, and 0 in the hundreds' place. \_\_\_\_\_

# Addition and Subtraction

**1.4** Write the answers to the facts.

$$\begin{array}{r} 3 \\ + 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ + 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ + 5 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ + 9 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ + 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ + 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ + 0 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ + 6 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + 6 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ + 4 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ + 0 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ + 5 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ + 7 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ + 9 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ + 7 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ + 7 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ + 0 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ + 7 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ + 0 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ + 5 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ + 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ + 8 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ + 0 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ + 8 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ - 3 \\ \hline \end{array} \quad \begin{array}{r} 12 \\ - 9 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ - 8 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 3 \\ \hline \end{array} \quad \begin{array}{r} 15 \\ - 9 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ - 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ - 8 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ - 6 \\ \hline \end{array} \quad \begin{array}{r} 14 \\ - 5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ - 0 \\ \hline \end{array} \quad \begin{array}{r} 12 \\ - 7 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 9 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 5 \\ \hline \end{array} \quad \begin{array}{r} 16 \\ - 9 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ - 0 \\ \hline \end{array} \quad \begin{array}{r} 16 \\ - 8 \\ \hline \end{array} \quad \begin{array}{r} 14 \\ - 6 \\ \hline \end{array} \quad \begin{array}{r} 17 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ - 2 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ - 0 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ - 4 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ - 1 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 8 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ - 4 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 9 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ - 5 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ - 3 \\ \hline \end{array}$$

You should know all of your addition and subtraction facts by now.

The numbers that we add have special names.

$$\begin{array}{r} 24 \\ 35 \\ + 64 \\ \hline 123 \end{array}$$

addend  
addend  
addend  
sum

In addition, the numbers that are added are named **addends**, and the answer is named the **sum**.



**Find the sum of these addends.**

**1.5**    a.  $\begin{array}{r} 576 \\ + 247 \\ \hline \end{array}$     b.  $\begin{array}{r} 239 \\ + 506 \\ \hline \end{array}$     c.  $735 + 657 = \underline{\hspace{2cm}}$     d.  $368 + 754 = \underline{\hspace{2cm}}$

**1.6**    a.  $\begin{array}{r} 672 \\ + 391 \\ \hline \end{array}$     b.  $\begin{array}{r} 538 \\ + 295 \\ \hline \end{array}$     c.  $663 + 305 = \underline{\hspace{2cm}}$     d.  $593 + 278 = \underline{\hspace{2cm}}$

**1.7**    a.  $\begin{array}{r} 73 \\ 59 \\ + 42 \\ \hline \end{array}$     b.  $\begin{array}{r} 20 \\ 46 \\ + 73 \\ \hline \end{array}$     c.  $56 + 82 + 40 = \underline{\hspace{2cm}}$     d.  $39 + 82 + 16 = \underline{\hspace{2cm}}$

**1.8**    a.  $\begin{array}{r} 85 \\ 26 \\ + 42 \\ \hline \end{array}$     b.  $\begin{array}{r} 64 \\ 20 \\ + 17 \\ \hline \end{array}$     c.  $56 + 23 + 44 = \underline{\hspace{2cm}}$     d.  $37 + 41 + 65 = \underline{\hspace{2cm}}$

The numbers that we subtract have special names.

$$\begin{array}{r} 296 \\ - 147 \\ \hline 149 \end{array}$$

minuend  
subtrahend  
difference

In subtraction, the number that we begin with is named the **minuend**, the number being subtracted is named the **subtrahend**, and the answer is the **difference**.



**Find the difference of the minuend and subtrahend.**

**1.9**    a.  $\begin{array}{r} 635 \\ - 238 \\ \hline \end{array}$     b.  $\begin{array}{r} 421 \\ - 135 \\ \hline \end{array}$     c.  $624 - 362 = \underline{\hspace{2cm}}$     d.  $864 - 576 = \underline{\hspace{2cm}}$

**1.10**    a.  $\begin{array}{r} 645 \\ - 284 \\ \hline \end{array}$     b.  $\begin{array}{r} 588 \\ - 275 \\ \hline \end{array}$     c.  $956 - 763 = \underline{\hspace{2cm}}$     d.  $525 - 184 = \underline{\hspace{2cm}}$

**1.11**    a.  $\begin{array}{r} 946 \\ - 308 \\ \hline \end{array}$     b.  $\begin{array}{r} 406 \\ - 219 \\ \hline \end{array}$     c.  $307 - 243 = \underline{\hspace{2cm}}$     d.  $754 - 647 = \underline{\hspace{2cm}}$

**1.12**    a.  $\begin{array}{r} 763 \\ - 574 \\ \hline \end{array}$     b.  $\begin{array}{r} 839 \\ - 472 \\ \hline \end{array}$     c.  $931 - 765 = \underline{\hspace{2cm}}$     d.  $468 - 321 = \underline{\hspace{2cm}}$



When we count we use the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

When we have used all of the digits once, we start over again and add a zero.

<b>ones</b>	<b>tens</b>	<b>hundreds</b>	<b>thousands</b>
1	10	100	1,000
1-digit number	2-digit number	3-digit number	4-digit number

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**Complete these activities.**

**1.13** Write the number that comes after ...

0 _____	9 _____	99 _____	999 _____
5 _____	35 _____	297 _____	1,392 _____
7 _____	84 _____	599 _____	4,586 _____

**1.14** Write the number that comes before ...

_____ 4	_____ 60	_____ 729	_____ 5,643
_____ 8	_____ 14	_____ 400	_____ 8,451
_____ 5	_____ 56	_____ 932	_____ 9,643

**1.15** Write the next numbers in order. Remember commas for thousands.

7,	_____ ,	_____ ,	_____ ,	_____ ,	_____ ,	_____
48,	_____ ,	_____ ,	_____ ,	_____ ,	_____ ,	_____
392,	_____ ,	_____ ,	_____ ,	_____ ,	_____ ,	_____
6,457,	_____ ,	_____ ,	_____ ,	_____ ,	_____ ,	_____

**1.16** Write six facts with the answer of 13.

$\begin{array}{r} + \\ \hline 13 \end{array}$	$\begin{array}{r} + \\ \hline 13 \end{array}$	$\begin{array}{r} + \\ \hline 13 \end{array}$	$\begin{array}{r} + \\ \hline 13 \end{array}$	$\begin{array}{r} + \\ \hline 13 \end{array}$	$\begin{array}{r} + \\ \hline 13 \end{array}$
---	---	---	---	---	---

Digits have value because of their place in the number.



We write “how many” and then we show the value.

	<b>thousands</b>		<b>hundreds</b>		<b>tens</b>		<b>ones</b>
8,635 =	8	+	6	+	3	+	5
=	8,000	+	600	+	30	+	5

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### Complete these activities.

**1.17** Write “how many” for each number and then tell the value of the digit (expand).

	<b>thousands</b>		<b>hundreds</b>		<b>tens</b>		<b>ones</b>
9,402 =	_____	+	_____	+	_____	+	_____
=	_____	+	_____	+	_____	+	_____

	<b>thousands</b>		<b>hundreds</b>		<b>tens</b>		<b>ones</b>
3,721 =	_____	+	_____	+	_____	+	_____
=	_____	+	_____	+	_____	+	_____

	<b>thousands</b>		<b>hundreds</b>		<b>tens</b>		<b>ones</b>
6,118 =	_____	+	_____	+	_____	+	_____
=	_____	+	_____	+	_____	+	_____

**1.18** Do you remember? Tell how many.

1 day = \_\_\_\_\_ hours

1 hour = \_\_\_\_\_ minutes

60 minutes = \_\_\_\_\_ hour

24 hours = \_\_\_\_\_ day

**1.19** Write six facts with the answer of 5.

$$\frac{\quad}{5}$$

$$\frac{\quad}{5}$$

$$\frac{\quad}{5}$$

$$\frac{\quad}{5}$$

$$\frac{\quad}{5}$$

$$\frac{\quad}{5}$$



**Review the material in this section to prepare for the Self Test.** The Self Test will check your understanding of this section. Any items you miss on this test will show you what areas you will need to restudy in order to prepare for the unit test.

# SELF TEST 1

**Complete these activities** (each answer blank, 1 point).

**1.01** List all of the digits. \_\_\_\_\_

**1.02** Write a multi-digit number using the digits 5, 8, 6, and 3. \_\_\_\_\_

**1.03** What is the *place* of the digit ...

a. 4 in the number 485? \_\_\_\_\_

b. 7 in the number 703? \_\_\_\_\_

c. 6 in the number 2,596? \_\_\_\_\_

d. 8 in the number 8,905? \_\_\_\_\_

**1.04** What is the *value* of the digit ...

a. 6 in the number 632? \_\_\_\_\_

b. 3 in the number 839? \_\_\_\_\_

c. 2 in the number 7,512? \_\_\_\_\_

d. 4 in the number 4,135? \_\_\_\_\_

e. 0 in the number 5,046? \_\_\_\_\_

**1.05** What is the purpose of 0 in a number?

\_\_\_\_\_

**1.06** Write the digit 1 in the tens' place, 6 in the ones' place, 8 in the thousands' place, and 2 in the hundreds' place. \_\_\_\_\_

**1.07** Write the number that comes after ...

76 \_\_\_\_\_ 549 \_\_\_\_\_ 999 \_\_\_\_\_

**1.08** Write the number that comes before ...

90 \_\_\_\_\_ 800 \_\_\_\_\_ 703 \_\_\_\_\_

**Write the next numbers in order** (each row of answers, 3 points).

**1.09** 357, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

4,638, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Complete these activities** (each answer, 1 point).

**1.010** Add. 
$$\begin{array}{r} 496 \\ + 238 \\ \hline \end{array}$$

**1.011** Subtract. 
$$\begin{array}{r} 832 \\ - 189 \\ \hline \end{array}$$

**1.012** In problems 1.010 and 1.011, what number is ...

- a. an addend? \_\_\_\_\_
- b. the difference? \_\_\_\_\_
- c. the subtrahend? \_\_\_\_\_
- d. the minuend? \_\_\_\_\_
- e. the sum? \_\_\_\_\_

**Write “how many” for each number and then tell the value of the digit** (each row of answers, 1 point).

<b>1.013</b>	<b>thousands</b>		<b>hundreds</b>		<b>tens</b>		<b>ones</b>
3,702 =	_____	+	_____	+	_____	+	_____
=	_____	+	_____	+	_____	+	_____

**Tell how many** (each answer, 1 point).

**1.014** 1 day = \_\_\_\_\_ hours                      1 hour = \_\_\_\_\_ minutes  
 60 minutes = \_\_\_\_\_ hour                      24 hours = \_\_\_\_\_ day

**Complete these activities** (each answer, 1 point).

**1.015** Add.  $703 + 459 =$  \_\_\_\_\_

**1.016** Subtract.  $550 - 238 =$  \_\_\_\_\_

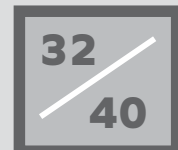


**Teacher check:**

Score \_\_\_\_\_

Initials \_\_\_\_\_

Date \_\_\_\_\_





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