

# COMMON CORE

Grade 3

## Mathematics

# CLINICS



Number and Operations  
in Base Ten and Fractions

 Options™



**Module**  
**1**

# Number and Operations in Base Ten and Fractions

**Common Core State Standards**

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# Read and Write Whole Numbers

## Key Words

base-ten  
numerals  
digits  
expanded form  
number name  
place value

You write a numeral to represent a number.

The ten **digits** used to make up numerals in the base-ten system are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.

**Place value** shows the value of each digit in a numeral.

The value of each digit is based on its position in a numeral.

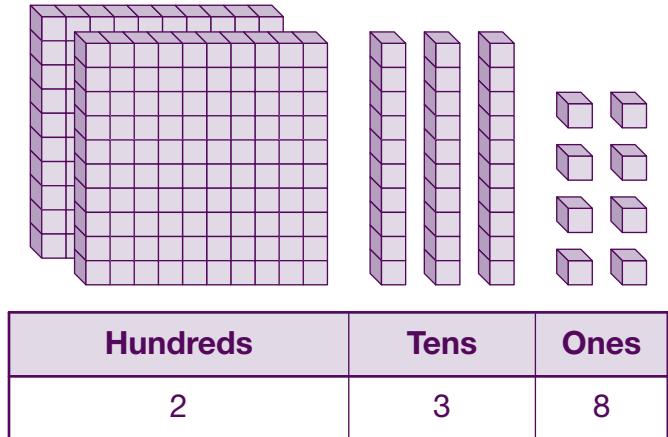
You can represent a number in different ways: **base-ten numerals**, **expanded form**, and **number name**.

## Example 1

In the numeral 238, each digit stands for what value?

You can use place-value models or a place-value chart.

In the numeral 238, the 2 stands for 2 hundreds, or 200. The 3 stands for 3 tens, or 30. The 8 stands for 8 ones, or 8.



## Example 2

How is 238 written in expanded form? What is the number name for 238?

238 is a base-ten numeral for a number. To represent the same number in expanded form, show the value of each digit. To write a number name, use words.

In expanded form, 238 is written  $200 + 30 + 8$ .

The number name for 238 is two hundred thirty-eight.

## WRITE

How is 194 written in expanded form?

## Guided Practice

1 Write 649 in expanded form.

**Step 1** Write the value for each digit.

The 6 stands for 600.

The 4 stands for \_\_\_\_\_.

The 9 stands for \_\_\_\_\_.

### THINK

6 is in the hundreds place.

4 is in the tens place.

9 is in the ones place.

**Step 2** Use the value for each digit to write the expanded form.

\_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

The expanded form of 649 is \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_.

2 What is the number name for 649?

**Step 1** Write the value of 600 in words.

Write 600 as six hundred.

**Step 2** Write the value of 40 in words.

Write 40 as \_\_\_\_\_.

**Step 3** Write the value of 9 in words.

Write 9 as \_\_\_\_\_.

**Step 4** Write the number name.

\_\_\_\_\_

The number name for 649 is

\_\_\_\_\_.

### REMEMBER

When reading or writing number names for 3-digit numerals, do not use the word “and.” For 842, say “eight hundred forty-two,” not “eight hundred and forty-two.”

## Independent Practice

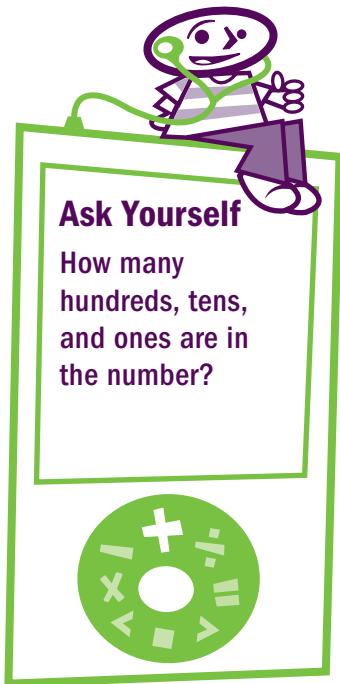
1. In the number 706, what is the meaning of the 0 in the tens place?

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2. How do you write a number in expanded form?

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**Write each number in expanded form.  
Then write the number name for each.**

3. 276 \_\_\_\_\_

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4. 153 \_\_\_\_\_

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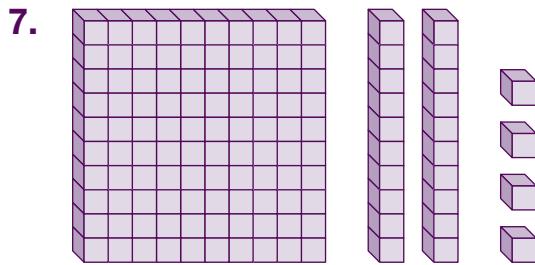
5. There are four hundred eighty-five students in a local elementary school. How is four hundred eighty-five written as a base-ten numeral?

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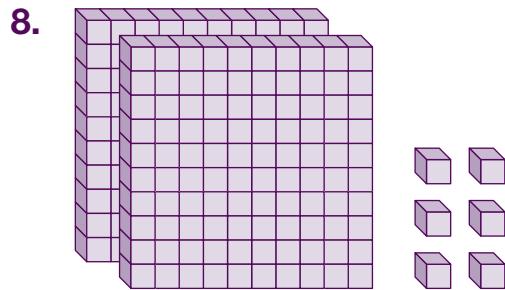
6. Jacob's aunt is thirty-one years old. How is thirty-one written as a base-ten numeral?

---

Write each number using base-ten numerals.



\_\_\_\_\_



\_\_\_\_\_

Write the value of the underlined digit.

9. 267 \_\_\_\_\_

10. 519 \_\_\_\_\_

11. 308 \_\_\_\_\_

12. In this place-value chart, write a numeral with a 5 in the hundreds place, a 3 in the tens place, and a 4 in the ones place.

Hundreds	Tens	Ones

13. What is the number name for the number represented in the place-value chart?

\_\_\_\_\_

**Solve.**

14. I am a digit in each of the numerals: 756      657      576.  
My value is different in all three numerals. What digit am I?  
What value do I stand for in each numeral?

\_\_\_\_\_

\_\_\_\_\_

# COMMON CORE

Grade 3

Mathematics

# CLINICS



Operations and  
Algebraic Thinking

 Options™



**Module**  
**2**

# Operations and Algebraic Thinking

**Common Core State Standards**

<b>Lesson 1</b>	Understand Multiplication . . . . .	4	3.OA.1, 3.OA.3, 3.OA.4
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<b>Lesson 4</b>	Multiplication Word Problems . . . . .	16	3.OA.3, 3.OA.8
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# Understand Multiplication

## Key Words

factor  
multiplication  
product

When you use **multiplication** ( $\times$ ), you combine equal groups. The numbers that you multiply are the **factors**.

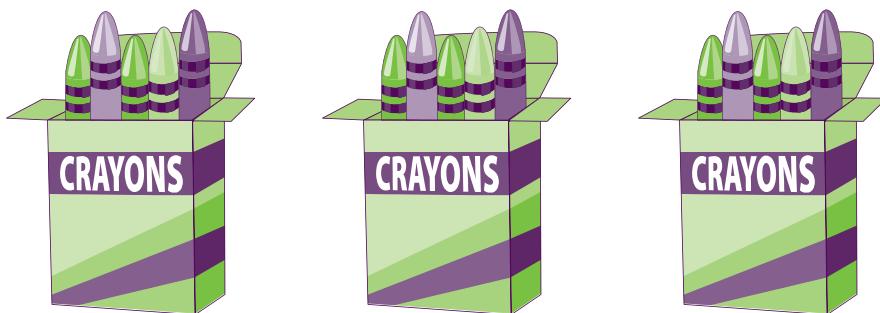
The answer when you multiply is the **product**.

You can draw a picture to show a multiplication problem.

You can use the factors and the product to write a multiplication number sentence.

## Example

Mark bought 3 boxes of crayons. There are 5 crayons in each box. How many crayons does Mark have in all?



There are 3 boxes of crayons. There are 5 crayons in each box. There are 3 groups of 5.

Write a multiplication number sentence to solve the problem.

Use 3 and 5 as the factors. Use  for the unknown product.

$$\begin{array}{ccccccc} 3 & \times & 5 & = & \square \\ \uparrow & & \uparrow & & \uparrow \\ \text{factor} & & \text{factor} & & \text{product} \end{array}$$

Find the product.

$$3 \times 5 = 15$$

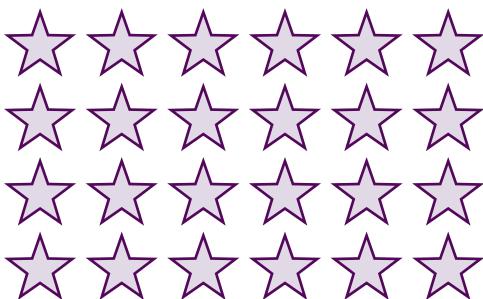
Mark has 15 crayons in all.

## DRAW

Draw a picture to show 2 groups of 6.

## Guided Practice

How many stars are there in all?



**Step 1** Count how many rows there are.

There are 4 rows of stars.

**Step 2** Count how many stars are in each row.

There are \_\_\_\_\_ stars in each row.

**Step 3** Write a multiplication number sentence.

$$\underline{\quad} \times \underline{\quad} = \square$$

**Step 4** Find the product.

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

There are \_\_\_\_\_ stars in all.

### THINK

Use the number of rows as one factor.  
Use the number of stars in each row as the other factor.

### REMEMBER

The product is the answer to a multiplication problem.

# Independent Practice

1. What are equal groups?

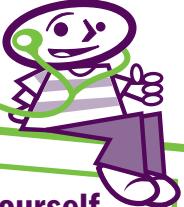
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2. What are factors?

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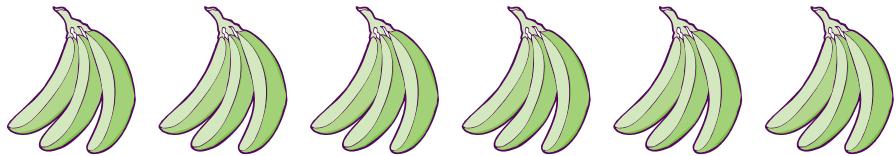
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**Ask Yourself**  
How many groups are there?  
How many objects are in each group?



3. What multiplication sentence does the picture show?



$6 \times \underline{\quad} = \underline{\quad}$

4. What multiplication sentence does the picture show?



$\underline{\quad} \times 5 = \underline{\quad}$

**Draw a picture. Find the total.**

5. 3 groups of 2 = \_\_\_\_\_

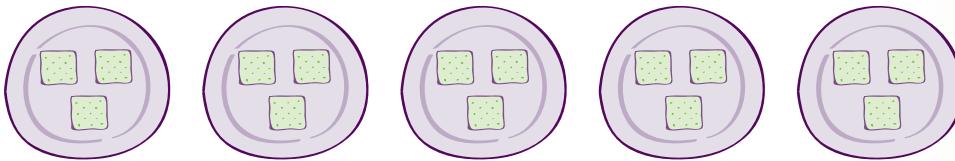
6. 5 groups of 4 = \_\_\_\_\_

7. 2 groups of 9 = \_\_\_\_\_

8. 4 groups of 6 = \_\_\_\_\_

**Solve each problem.**

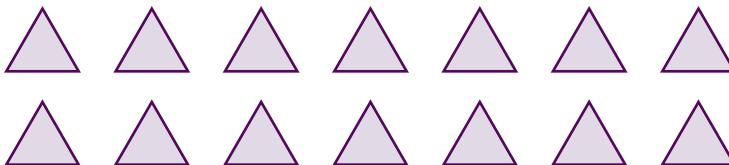
9. There are 5 plates. There are 3 crackers on each plate. How many crackers are there in all?



Write a multiplication sentence: \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

There are \_\_\_\_\_ crackers in all.

10. Dan drew 2 rows of triangles. He drew 7 triangles in each row. How many triangles did Dan draw?



Write a multiplication sentence: \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

Dan drew \_\_\_\_\_ triangles.

# COMMON CORE

Grade 3

## Mathematics

# CLINICS



Measurement, Data,  
and Geometry

 Options™



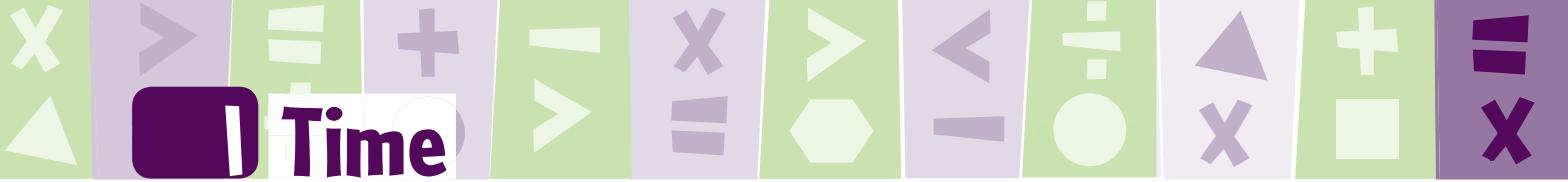
**Module**  
**3**

# Measurement, Data, and Geometry

**Common Core State Standards**

<b>Lesson 1</b>	Time . . . . .	4	3.MD.1
<b>Lesson 2</b>	Mass . . . . .	8	3.MD.2
<b>Lesson 3</b>	Capacity . . . . .	12	3.MD.2
<b>Lesson 4</b>	Perimeter. . . . .	16	3.MD.8
<b>Lesson 5</b>	Understand Area. . . . .	20	3.MD.5.a, 3.MD.5.b, 3.MD.6
<b>Lesson 6</b>	Area of Rectangles. . . . .	24	3.MD.7.a, 3.MD.7.b, 3.MD.7.c, 3.MD.7.d
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<b>Math Tools</b>	. . . . .	63	

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# Time

## Key Words

elapsed time  
hour  
minute

Each day has 24 hours. The 12 hours from midnight to noon are the **A.M.** hours. The 12 hours from noon to midnight are the **P.M.** hours.

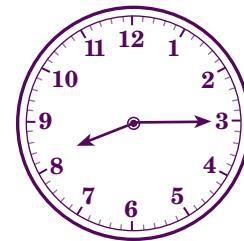
The short hand of a clock points to the **hour**. The numbers around the clock show the hours. The long hand points to the **minute**. The little marks around the clock show the minutes. It takes 5 minutes for the long hand to move from one number to the next. There are 60 minutes in one hour.

**Elapsed time** is the amount of time from the start of an activity to the end of that activity.

## Example 1

What time is shown on the clock?

The short hand is between 8 and 9, so the hour is 8. The long hand is pointing to the 3. Because each number represents 5 minutes, skip count by 5s three times, starting at 12.



from 12 to 1 → from 1 to 2 → from 2 to 3  
5                      10                      15

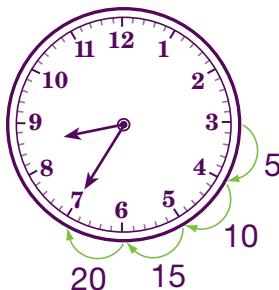
The time shown on the clock is 8:15.

## Example 2

Dave started washing dishes at 8:15 P.M. He finished at 8:35 P.M. For how long was Dave washing dishes?

Start at 8:15.  
Skip count to 8:35.

Dave washed dishes for 20 minutes.

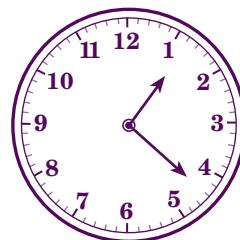


## WRITE

Write a time between midnight and noon.

## Guided Practice

1 What time is shown on the clock?



**Step 1** Find the hour.

The short hand is between the 1 and the 2, so the hour is 1.

**Step 2** Find the number of minutes.

The long hand is between the \_\_\_\_\_ and the \_\_\_\_\_.

Skip count the minutes by 5s. 5 → 10 → \_\_\_\_\_ → \_\_\_\_\_

Count by ones from 1:20 to the minute hand. 1:20 → 1:21 → \_\_\_\_\_

The time on the clock is \_\_\_\_\_.

2 Mia called her friend at 3:10 P.M. The two friends spoke until 3:24. For how long did the phone call last?



**Step 1** Find the starting time on the number line.

The phone call started at 3:10.

**Step 2** Count by 5s starting at 3:10

From 3:10 to 3:15 is 5 minutes. From 3:15 to 3:20 is \_\_\_\_\_ minutes.

From 3:10 to 3:20 is a total of \_\_\_\_\_ minutes.

**Step 3** Count the minutes from 3:20. 3:20 to 3:24 is \_\_\_\_\_ minutes.

**Step 4** Find the total elapsed time. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

The phone call lasted for \_\_\_\_\_ minutes.

# Independent Practice

1. How do you read the hands on a clock to tell time?

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2. What is elapsed time?

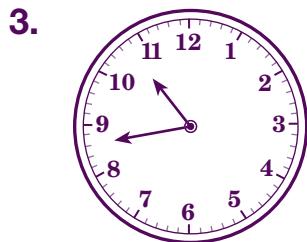
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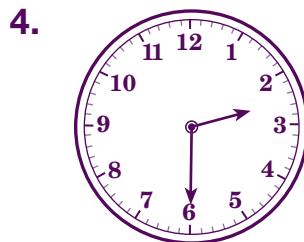


**Ask Yourself**  
Which hand tells the hour?  
Which hand tells the minutes?

Write the time shown on each clock.



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5. Marci did her homework from 3:15 to 3:40.

a. Was it A.M. or P.M. when Marci did her homework?

---

b. For how many minutes did Marci do homework?

---

Use each number line. Find the elapsed time.

6. Tina started biking to the library at 11:04 A.M. She arrived at the library at 11:11 A.M. How long was Tina’s bike ride to the library?



\_\_\_\_\_ minutes

7. Jacob started reading at 4:30 P.M. He stopped reading at 4:39 P.M. For how many minutes did Jacob read?



\_\_\_\_\_ minutes

**Solve each problem.**

8. Irene’s swimming lesson started at 5:10 P.M. The lesson ended at 5:45 P.M. How long was Irene’s swimming lesson?

\_\_\_\_\_

9. Mrs. Brown baked bread this morning. She put the bread in the oven at 8:12 A.M. The bread baked for 30 minutes. At what time did Mrs. Brown take the bread out of the oven?

\_\_\_\_\_