COMMON CORE CLINICS

Grade 3

Mathematics

Number and Operations in Base Ten and Fractions

Options

Module 1

Number and Operations in Base Ten and Fractions

1 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.

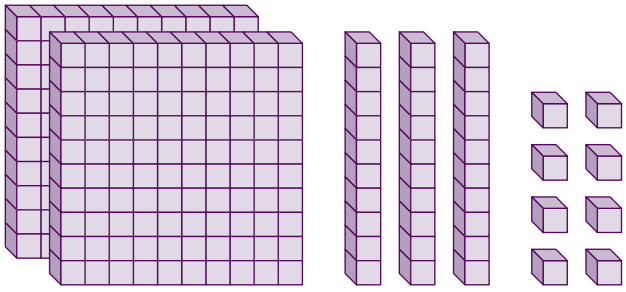
The value of each digit is based on its position in a numeral.

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.



Hundreds	Tens	Ones
2	3	8

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 _____.

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."

Step 4 Write the number name.

_____

The number name for 649 is

_____.

Independent Practice

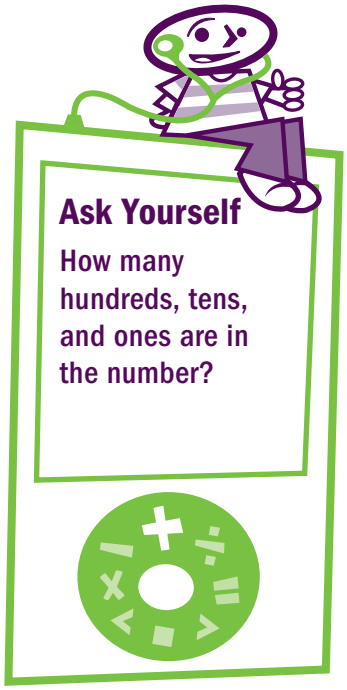
1. In the number 706, what is the meaning of the 0 in the tens place?

_____

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

_____

_____



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

3. 276 _____

_____

4. 153 _____

_____

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?

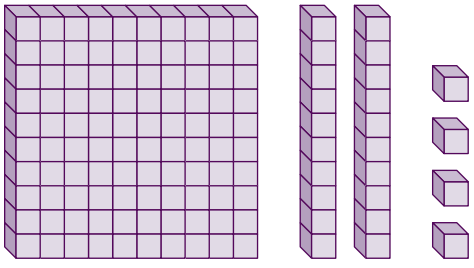
_____

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

_____

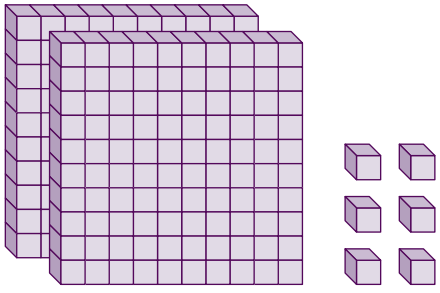
Write each number using base-ten numerals.

7.



_____

8.



_____

Write the value of the underlined digit.

9. 2<u>6</u>7 _____

10. <u>5</u>19 _____

11. 30<u>8</u> _____

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 CLINICS

Grade 3

Mathematics

Operations and Algebraic Thinking

Options™

Module 2

Operations and Algebraic Thinking

1 Understand Multiplication

Key Words

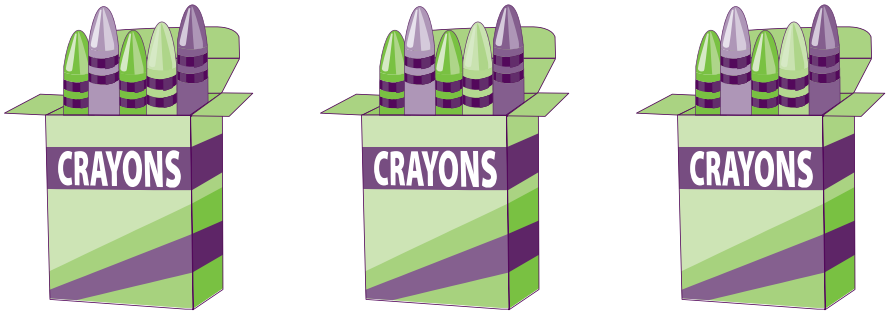
factor
multiplication
product

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 $\square$ for the unknown product.

$$3 \times 5 = \square$$

3 and 5 are factors; $\square$ is the product.

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.

_____ × _____ = ☐

Step 4 Find the product.

_____ × _____ = _____

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?

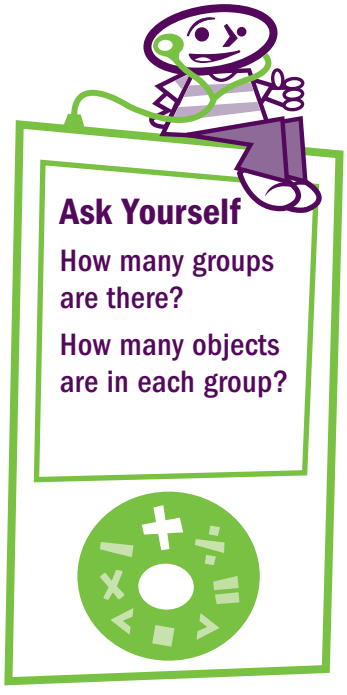
_____

_____

2. What are factors?

_____

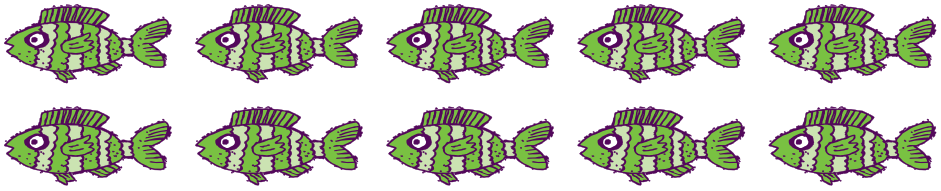
_____



3. What multiplication sentence does the picture show?

6 × _____ = _____

4. What multiplication sentence does the picture show?



_____ × 5 = _____

Draw a picture. Find the total.

5. 3 groups of 2 = _____

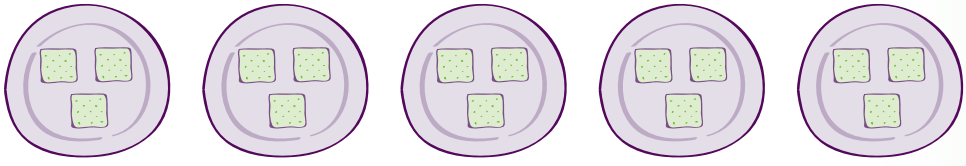
6. 5 groups of 4 = _____

7. 2 groups of 9 = _____

8. 4 groups of 6 = _____

Solve each problem.

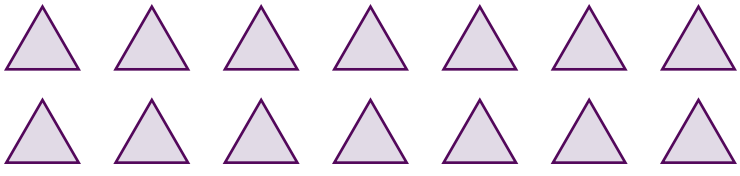
9. There are 5 plates. There are 3 crackers on each plate.
How many crackers are there in all?



Write a multiplication sentence: _____ × _____ = _____

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: _____ × _____ = _____

Dan drew _____ triangles.

COMMON CORE CLINICS

Grade 3

Mathematics

Measurement, Data, and Geometry

Options

Module 3

Measurement, Data, and Geometry

1 Time

Key Words

elapsed time
hour
minute

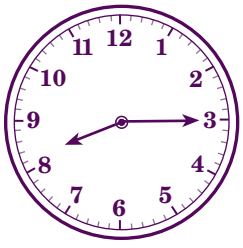
Each day has 24 hours. The 12 hours from midnight to noon are the A.M. hours. The 12 hours from noon to midnight are the P.M. hours.

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

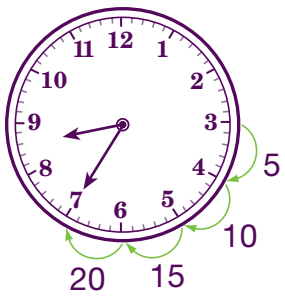
5 10 15

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.

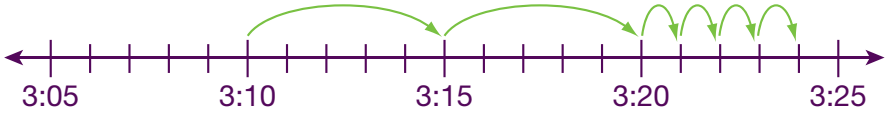
The long hand is between the _____ and the _____.

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.

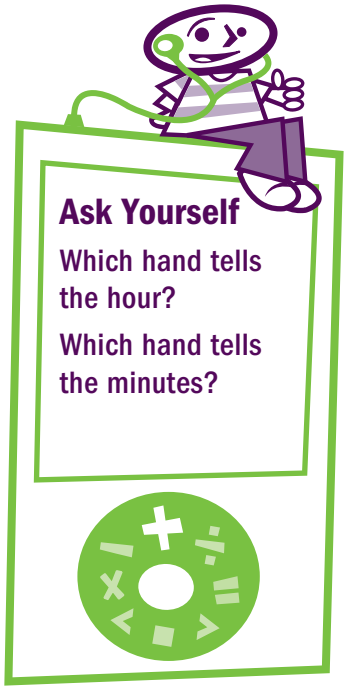
Step 4 Find the total elapsed time. _____ + _____ = _____

The phone call lasted for _____ minutes.

Independent Practice

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

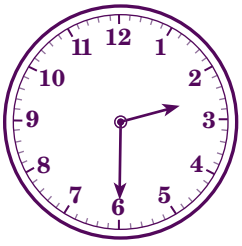
2. What is elapsed time?



Write the time shown on each clock.

3.

4.



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?

_____