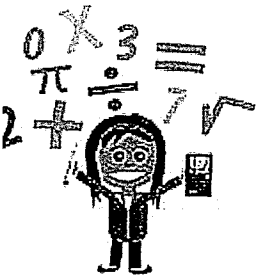


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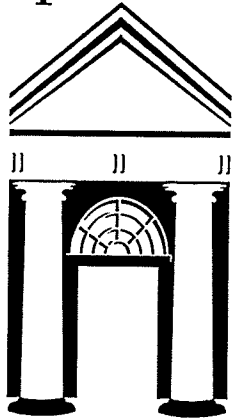
College: \_\_\_\_\_



# 4th Grade Math Performance Training

**Week of 4/26 - 4/30/2021**

Spelman



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1867

**HOWARD**  
**UNIVERSITY**

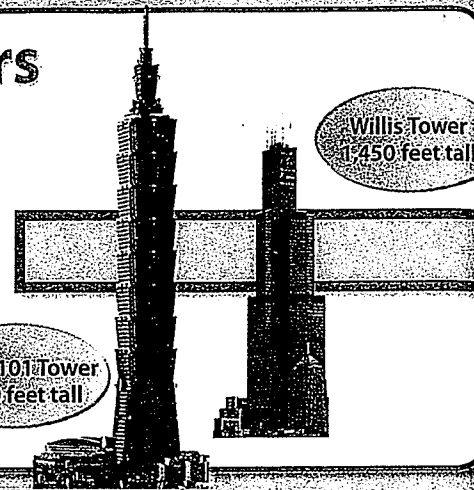
4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

## Comparing Numbers

How do you compare numbers?

When you compare two numbers you find out which number is greater and which number is less.

Which building is taller, the Taipei 101 Tower in Taiwan or the Willis Tower in Chicago?



### Another Example

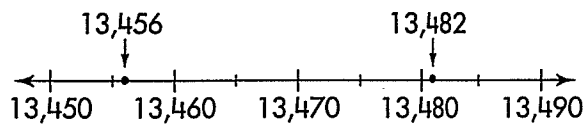
#### How can you use place-value charts and number lines to compare numbers?

Compare 13,456 and 13,482 using a place-value chart. Then show these two numbers on a number line.

On a place-value chart, line up the digits by place value. Compare the digits starting from the left.

ten thousands	thousands	hundreds	tens	ones
1	3,	4	5	6
1	3,	4	8	2

↑ same    ↑ same    ↑ same    ↑ different  
5 tens < 8 tens



So 13,456 is less than 13,482.

$$13,456 < 13,482$$

On the number line, 13,456 is to the left of 13,482.

### Explain It

1. In this example, why don't you need to compare the digits in the ones place?
2. Why can't you tell which number is greater by just comparing the first digit in each number?



(2018)

- 24** Which number sentence correctly compares two numbers?
- A** forty-six thousand three hundred fifteen  $<$  46,350
  - B**  $29,073 = 20,000 + 9,000 + 700 + 3$
  - C**  $10,000 + 6,000 + 400 >$  sixteen thousand four hundred ten
  - D**  $86,502 = 80,000 + 6,000 + 500 + 20$
- 33** Which expression shows 125,206 written in expanded form?
- A**  $100,000 + 2,000 + 5,000 + 200 + 6$
  - B**  $100,000 + 20,000 + 5,000 + 200 + 6$
  - C**  $100,000 + 20,000 + 50,000 + 200 + 6$
  - D**  $100,000 + 20,000 + 5,000 + 2,000 + 6$

(2016)

- 1** What expression can be used to show 270,240 written in expanded form?
- A**  $200,000 + 7,000 + 200 + 4$
  - B**  $200,000 + 7,000 + 200 + 40$
  - C**  $200,000 + 70,000 + 200 + 40$
  - D**  $200,000 + 70,000 + 2,000 + 40$

(2015)

**1** Which number sentence is true?

**A**  $376,425 > 367,419$

**B**  $337,425 > 337,524$

**C**  $336,425 < 335,426$

**D**  $327,425 < 327,416$

(2014)

Which expression represents the number 13,809 written in expanded form?

**A**  $13 + 80 + 9$

**B**  $13,000 + 800 + 90$

**C**  $9 + 1,300 + 80$

**D**  $3,000 + 10,000 + 9 + 800$

4 thousands + 3 tens + 5 hundreds is less than which number below?

**A** 4 thousands + 5 tens + 3 hundreds

**B** 8 hundreds + 3 thousands + 8 ones

**C** 4 thousands + 7 ones + 8 tens + 6 hundreds

**D** 9 hundreds + 9 tens + 2 thousands

(2013)

Which number is sixteen thousand four hundred seventy-two in standard form?

**A** 16,472

**B** 16,702

**C** 160,472

**D** 164,702

**Common Core**

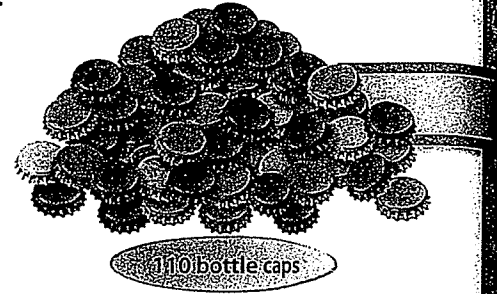
4.NBT.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. Also 4.NBT.2

# Place Value Relationships

**Hands-On**  
place-value blocks

How are the digits in a multi-digit number related to each other?

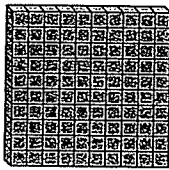
Kiana collected 110 bottle caps. What is the relationship between the values of the digit 1 in each place?



The first 1 is in the hundreds place. Its value is 100.

The second 1 is in the tens place. Its value is 10.

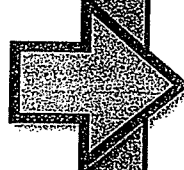
How is 100 related to 10?



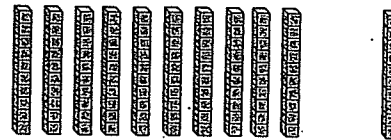
100



10



100 is ten times as much as 10. The first 1 is worth ten times as much as the second 1!



10 tens

1 ten

When two digits next to each other in a number are the same, the digit on the left is always ten times as great as the digit on the right.

## Independent Practice



**MATHEMATICAL PRACTICES**

**Look for Patterns** In 7–22, name the values of the given digits in the numbers below.

- |                     |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|
| 7. the 4s in 6,448  | 8. the 3s in 433    | 9. the 6s in 6,674  | 10. the 1s in 5,711 |
| 11. the 5s in 4,559 | 12. the 2s in 722   | 13. the 9s in 4,998 | 14. the 4s in 844   |
| 15. the 8s in 8,800 | 16. the 7s in 2,773 | 17. the 2s in 225   | 18. the 1s in 1,138 |
| 19. the 5s in 5,590 | 20. the 6s in 2,366 | 21. the 8s in 688   | 22. the 9s in 9,993 |



eTools  
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(2018)

- 13** Ms. Larsen is buying 2 delivery vans for her business. The price of the first van is shown below.

\$16,257

The digit 2 in the price of the second van is 10 times the value of the digit 2 in the price of the first van. Which amount could be the price of the second van?

- A** \$12,987
  - B** \$15,927
  - C** \$17,257
  - D** \$21,579
- 37** Andrew wrote the number 186,425 on the board. In which number is the value of the digit 6 exactly 10 times the value of the digit 6 in the number Andrew wrote?
- A** 681,452
  - B** 462,017
  - C** 246,412
  - D** 125,655

(2016)

- 5** If 30,000 is divided by 10 and then divided by 10 again, what will be the resulting number?
- A** 3
  - B** 30
  - C** 300
  - D** 3,000

- 18 The value of the digit 5 in 24,513 is how many times the value of the digit 5 in 357?
- A 10
  - B 100
  - C 1,000
  - D 10,000

(2015)

- 39 The value of the 7 in 507,264 is 10 times the value of the 7 in which number?
- A 493,725
  - B 587,921
  - C 672,439
  - D 714,093

- 47 The number below has the digit 6 in two different places.

916,672

How many times greater is the value represented by the 6 in the thousands place than the value represented by the 6 in the hundreds place?

- A 10
- B 100
- C 1,000
- D 10,000

(2014)

In the number 344,586, how many times greater is the value represented by the 4 in the ten thousands place than the value represented by the 4 in the thousands place?

- A** 1
- B** 10
- C** 1,000
- D** 10,000

Which number has a 5 that represents a value ten times greater than the value represented by the 5 in 41,253?

- A** 31,254
- B** 41,523
- C** 43,125
- D** 51,324

(2013)

In the number below, how many times greater is the number represented by the digit in the thousands place than the number represented by the digit in the hundreds place?

57,762

- A** 1
- B** 10
- C** 100
- D** 1,000



(2014)

A school has 17 tables in the cafeteria. Each table seats 12 students. What is the greatest number of students that can be seated at these tables?

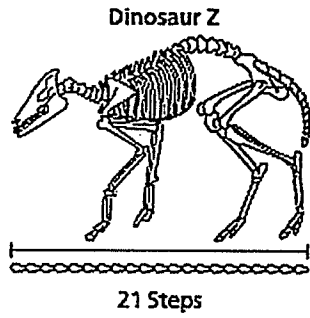
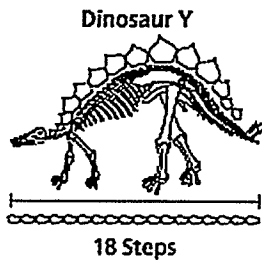
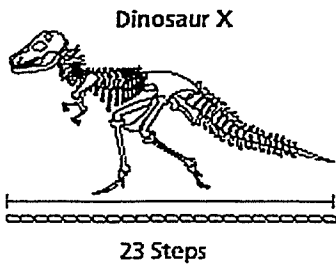
- A** 114
- B** 184
- C** 194
- D** 204

(2013)

There are 5,280 feet in a mile. What is the total number of feet in 6 miles?

- A** 31,280
- B** 31,680
- C** 33,680
- D** 35,280

Bradley saw 3 dinosaur skeletons at the museum. To measure the length of each skeleton, he counted the number of his shoe lengths from the head to the tail, as shown in the picture below.



KEY

○ = 1 shoe length

Bradley's shoe length is 17 cm long. Which list shows the dinosaur skeletons that were more than 320 centimeters long?

- A Dinosaur X and Dinosaur Y
- B Dinosaur X and Dinosaur Z
- C Dinosaur Y and Dinosaur Z
- D Dinosaur X, Dinosaur Y, and Dinosaur Z



4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

# Arrays and Multiplying 2-Digit Numbers

Hands-On  
grid paper

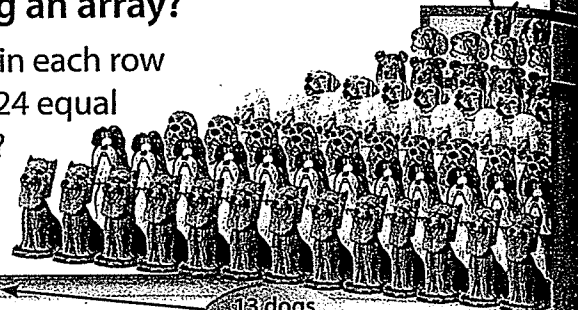


How can you multiply using an array?

There are 13 bobble-head dogs in each row of the carnival booth. There are 24 equal rows. How many dogs are there?

**Choose an Operation**

Multiply to join equal groups.



## Another Example What is another way to multiply 2-digit numbers?

There are 37 rows with 26 seats set up at the ring at the dog show. How many seats are there?

Find  $37 \times 26$ .

### Step 1

Draw a table. Separate each factor into tens and ones.  $(30 + 7) \times (20 + 6)$

	20	6
30		
7		

### Step 2

Multiply to find each product.

	20	6
30	600	180
7	140	42

### Step 3

Add to find the product.

$$\begin{array}{r} 42 \\ 140 \\ 180 \\ + 600 \\ \hline 962 \end{array}$$

$$37 \times 26 = 962$$

There are 962 seats at the dog show ring.

## Explain It

1. How is breaking apart the problem  $37 \times 26$  like solving four simpler problems?

©2. **Construct Arguments** Explain why the answer 962 is reasonable.

4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

# Multiplying 3- and 4-Digit by 1-Digit Numbers

How do you multiply larger numbers?

Juan guessed that the large bottle had 3 times as many pennies as the small bottle. What was Juan's guess?

**Choose an Operation** Multiply to find "3 times as many."



## Other Examples

Find  $3 \times 2,746$ .

**Step 1**

Multiply the ones.  
Regroup if necessary.

$$\begin{array}{r} 1 \\ 2,746 \\ \times 3 \\ \hline 8 \end{array}$$

**Step 2**

Multiply the tens.  
Add any extra tens.  
Regroup if necessary.

$$\begin{array}{r} 11 \\ 2,746 \\ \times 3 \\ \hline 38 \end{array}$$

**Step 3**

Multiply the hundreds.  
Add any extra hundreds.  
Regroup if necessary.

$$\begin{array}{r} 211 \\ 2,746 \\ \times 3 \\ \hline 238 \end{array}$$

**Step 4**

Multiply the thousands.  
Add any extra thousands.  
Regroup if necessary.

$$\begin{array}{r} 211 \\ 2,746 \\ \times 3 \\ \hline 8,238 \end{array}$$

Find  $5 \times 3,138$ .

**Step 1**

Multiply the ones.  
Regroup if necessary.

$$\begin{array}{r} 4 \\ 3,138 \\ \times 5 \\ \hline 0 \end{array}$$

**Step 2**

Multiply the tens.  
Add any extra tens.  
Regroup if necessary.

$$\begin{array}{r} 14 \\ 3,138 \\ \times 5 \\ \hline 90 \end{array}$$

**Step 3**

Multiply the hundreds.  
Add any extra hundreds.  
Regroup if necessary.

$$\begin{array}{r} 14 \\ 3,138 \\ \times 5 \\ \hline 690 \end{array}$$

**Step 4**

Multiply the thousands.  
Add any extra thousands.  
Regroup if necessary.

$$\begin{array}{r} 14 \\ 3,138 \\ \times 5 \\ \hline 15,690 \end{array}$$

## Guided Practice\*



### Do you know HOW?

In 1 and 2, find each product. Estimate to check for reasonableness.

1. 
$$\begin{array}{r} 519 \\ \times 4 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 3,378 \\ \times 2 \\ \hline \end{array}$$

### Do you UNDERSTAND?

3. **Reason** In the example at the top,  $3 \times 6$  tens is how many tens?
4. A band performed 4 sold-out shows. All 2,428 seats were filled for each show. How many fans saw the 4 shows?

(2019)

15 What is the value of the expression below?

$$2,816 \times 7$$

- A 14,572
- B 14,672
- C 19,612
- D 19,712

(2017)

5 What is the product of  $32 \times 67$ ?

- A 1,824
- B 1,934
- C 2,044
- D 2,144

25 A student has 3 puzzles. Each puzzle has 1,250 pieces. What is the total number of pieces in the puzzles?

- A 3,650
- B 3,750
- C 4,650
- D 4,750

40 Which method can be used to solve  $11 \times 13$ ?

- A Multiply  $11 \times 10$  and  $10 \times 3$ , then add the two products.
- B Multiply  $11 \times 10$  and  $11 \times 3$ , then add the two products.
- C Multiply  $11 \times 100$  and  $10 \times 3$ , then add the two products.
- D Multiply  $11 \times 100$  and  $11 \times 3$ , then add the two products.

(2016)

23 In December, a toy store sold 934 puzzles. Each puzzle cost \$6, including tax. What was the total cost of the puzzles sold, including tax?

- A \$5,434
- B \$5,484
- C \$5,604
- D \$5,684

32 What is the value of the expression below?

$$28 \times 42$$

- A 420
- B 816
- C 1,166
- D 1,176

(2015)

32 A store ordered 28 boxes holding 12 banana muffins each and 5 boxes holding 6 blueberry muffins each. What was the total number of muffins the store ordered?

- A 51
- B 366
- C 440
- D 10,080

42 A gardener ordered 46 flowering bushes to plant in a park. Each bush cost \$27. What was the total cost of the bushes?

- A \$1,102
- B \$1,142
- C \$1,202
- D \$1,242