4th Grade Unit 1 Part 3: Multiplication (Study Guide)

Name _____ Date _____

Study Guide directions:

Answer the questions and compare your answers to the answer key. Ask questions about anything you don't understand. Create similar questions to practice each skill with different numbers.

Standard:
14.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 multiplication calculations by using equations, rectangular arrays, and/or area models

1. *Be able to calculate the product of two whole numbers:*
   a. 428 x 6 = ____
   b. 835 x 5 =____
   c. 3,267 x 4 = ____
   d. 5,344 x 8 = ____

2. *Identify errors in multiplication calculations:*

6,3 1 5	4,3 2 9
x 3	x 9
1 8,9 3 5	4 7,9 6 1
_____	_____
_____	_____
_____	_____
_____	_____

3. *Draw arrays to represent multiplication problems:*
   6 x 4 3 x 8

4. *Draw area models to represent multiplication problems:*
   5 x 364 (Hint: 5 x 364 is the same as (5 x 300) + (5 x 60) + (5 x 4)

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5. *Review the properties of multiplication:*
   Commutative: 45 x 7 = ___ x ___
   Associative: (4 x 16) x 3 = ___ x (16 x ___)
   Distributive: 6 x 28 = (6 x ___) + (6 x __)

2.OA.2 solve multiplication and division word problems involving multiplicative comparison using drawings and equations (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison)**

6. *Solve multiplicative compare problems by drawing a diagram and writing an equation to represent the unknown value:*
   Terrence is 3 times taller than his baby brother. The baby is 19 inches tall. How tall is Terrence?

7. *Review equal groups problems by drawing a diagram and writing an equation to represent the unknown value:*
   Mr. Lang bought 9 bags of candy for his class. Each bag contains 129 pieces of candy. How many pieces of candy did Mr. Lang buy?

8. *Solve multi-step problems involving multiplication:*
   It's Brady's turn to bring drinks for football practice. He needs 64 bottles of sports drink. His mom bought 6 four-packs of Gatorade and 3 six-packs of Powerade. About how many more drinks does Brady's mom need to buy? *Bonus: How many additional four-packs and how many additional six-packs might Brady's mom buy to have enough sports drink for the team?*

   About _____ bottles of sports drink; _____ four packs and _____ six-packs

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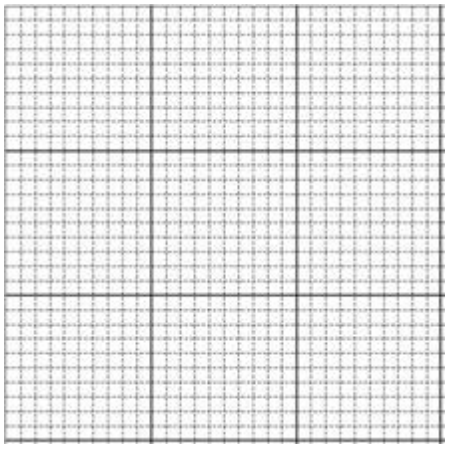
9. *Be able to calculate the product of two double-digit whole numbers:*

   a. 28 x 64 = ____
   b. 35 x 52 =____
   c. 67 x 41 = ____

10. *Identify errors in multiplication calculations:*

3 1 x 3 5 9 5	2 9 x 4 9 1 1 6,2 6 1
_____	_____
_____	_____
_____	_____
_____	_____

11. *Use the Base 10 Grid Paper to draw a model for the multiplication problem.*



27 x 21 = _____

12. *Solve equal groups and multiplicative compare problems using double digits:* Ryan planted 17 rows of strawberries with 25 plants in each row. How many strawberry plants did he plant?

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Study guide answer key (Problem solving questions may have other acceptable diagrams.)

1. Be able to calculate the product of two whole numbers:

e. 428 x 6 = *2,568*
f. 835 x 5 =*4,175*
g. 3,267 x 4 = *13,068*
h. 5,344 x 8 = *42,752*

2. *Identify errors in multiplication calculations:*

6,3 1 5
x 3
1 8,9 3 5

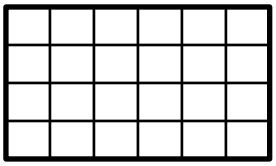
*When they multiplied 3 x 5 to get 15, they wrote only the 5 and forgot to add the 1 after they multiplied 3 x 1.*_____

4,3 2 9
x 9
4 7,9 6 1

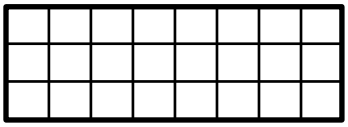
*They multiplied 9 x 4 and got 45 instead of 36. 45 + 2 = 47.*_____
_____

3. Draw arrays to represent multiplication problems:

6 x 4

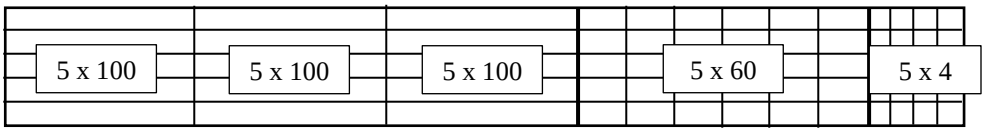


3 x 8



4. Draw area models to represent multiplication problems:

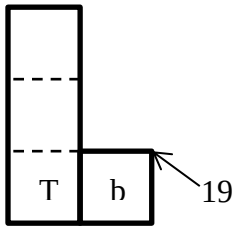
5 x 364 (Hint: 5 x 364 is the same as (5 x 300) + (5 x 60) + (5 x 4)



5 x 364 = 1,500 + 300 + 20 = 1,820

5. *Review the properties of multiplication:*
Commutative: 45 x 7 = *7* x *45*
Associative: (4 x 16) x 3 = *4* x (16 x *3*)
Distributive: 6 x 28 = (6 x *20*) + (6 x *8*)

6. *Solve multiplicative compare problems by drawing a diagram and writing an equation to represent the unknown value:*
Terrence is 3 times taller than his baby brother. The baby is 19 inches tall. How tall is Terrence?



1 9
x 3
5 7

Terrence is 57 inches tall.

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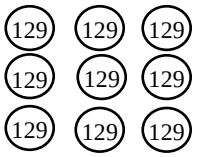
7. *Review equal groups problems by drawing a diagram and writing an equation to represent the unknown value:*
   Mr. Lang bought 9 bags of candy for his class. Each bag contains 129 pieces of candy. How many pieces of candy did Mr. Lang buy?



129
x 9
1,161

Mr. Lang bought 1,161 pieces of candy.

8. *Solve multi-step problems involving multiplication:*
   It's Brady's turn to bring drinks for football practice. He needs 64 bottles of sports drink. His mom bought 6 four-packs of Gatorade and 3 six-packs of Powerade. About how many more drinks does Brady's mom need to buy? *Bonus: How many additional four-packs and how many additional six-packs might Brady's mom buy to have enough sports drink for the team?*

   6 x 4 = 24 (about 25 or about 20, depending on how you round)
   3 x 6 = 18 (about 20)
   25 + 20 = 45 or 20 + 20 = 40
   45 + 20 = 65 or 40 + 25 = 65
   Brady's mom needs to buy about 20-25 more bottles. She could buy 6 four-packs and no six-packs, 2 four-packs and 2 six-packs, or any other combination that makes about 20 (or 25).

9. *Be able to calculate the product of two double-digit whole numbers:*

   a. 28 x 64 = *1,792*
   d. 35 x 52 = *1,820*
   e. 67 x 41 = *2,747*

10. *Identify errors in multiplication calculations:*

```
  31
 x35
  95
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The numbers were multiplied in columns, the same as an addition problem. The problem needs to multiply 5 x 31, not just 5 x 1; and it needs to multiply 30 x 31, not just 3 x 30.

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  29
 x 49
116,261
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The 116 needs to be 1160 and lined up under the 261. Then add 261 and 1160.

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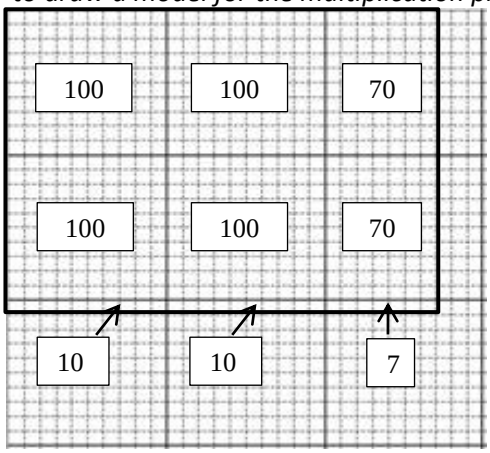
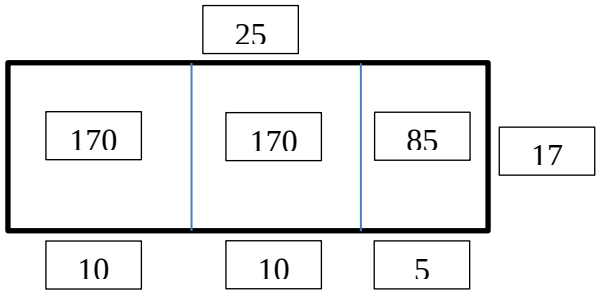
11. *Use the Base 10 Grid Paper to draw a model for the multiplication problem.*



27 x 21 = *567*

12. *Solve equal groups and multiplicative compare problems using double digits:* Ryan planted 17 rows of strawberries with 25 plants in each row. How many strawberry plants did he plant?



Ryan planted 459 strawberry plants.