Name_____

# 3rd Grade Math Remote Learning Packet

# Week 1

# September 21st – September 25th

**LEQ:** How can I understand *equal groups of* as multiplication?

**Objective:** I can use repeated addition to understand *equal groups of* as multiplication.

**Vocabulary**:

➢ Repeated addition
➢ Multiplication
➢ Sum
➢ Product

## Do Now:

Add to find the sum of each addition sentence below. Write the sum on the blank.

| *Example* | a. | b. |
|---|---|---|
| 2+2+2= <u>6</u> | 3+3= ____ | 1+1+1+1= ____ |
| **c.** | **d.** | **e.** |
| 2+2= ____ | 3+3+3= ____ | 5+5= ____ |
| **f.** | **g.** | **h.** |
| 5+5+5= ____ | 2+2+2+2= ____ | 4+4= ____ |
| **i.** | **j.** | **k.** |
| 6+6= ____ | 4+4+4= ____ | 5+5+5+5= ____ |
| **Challenge** 6+6+6+6= ____ | | |

**Input:**

Repeated addition can help us understand_____.
2+2+2+2 is the same as 4x ____because there are 4 equal groups of _____in both cases. The sum and _____ is 8.

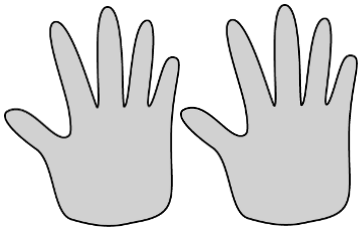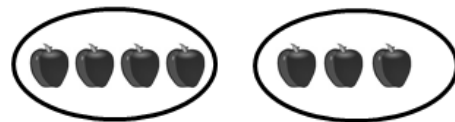| **Repeated Addition** |
|---|
| 🍋🍋 ➕ 🍋🍋 ➕ 🍋🍋 ➕ 🍋🍋 ═ _____<br><br>____ + ____ + ____ + ____ = ____ |
| **Multiplication** |
| Number of groups ✖ Size of each group ═ _____<br><br>_____ X _____ = _____ |

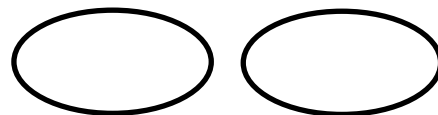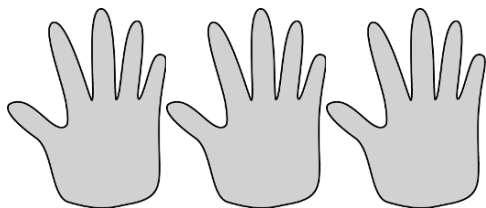| | |
|---|---|
| 2 groups of five = _____<br><br>2 fives = _____<br><br>2 × 5 = _____ | The picture below shows 2 groups of apples.  Does the picture show 2 × 4?  Explain why or why not.<br><br>The picture does <u>not</u> show 2 equal groups of 4. There are two groups of apples, but they are not <u>equal</u>. We see one group of 4 and one group of 3.<br><br>2X4= _____ |

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**Problem Set:**

1.

**a.**

3 groups of five = _____

3 fives = _____

$3 \times 5$ = _____

**b.**

3 + 3 + 3 + 3 + 3 = _____

5 groups of three = _____

$5 \times 3$ = _____

**c.**

6 + 6 + 6 + 6 = _____

_____ groups of six = _____

$4 \times$ _____ = _____

**d.**

4 +_____ + _____ + _____ + _____ + _____ = _____

6 groups of _____ = _____

6  $\times$ _____ = _____

2.

a. The picture below shows 2 groups of apples.  Does the picture show 2 × 3? Explain why or why not.
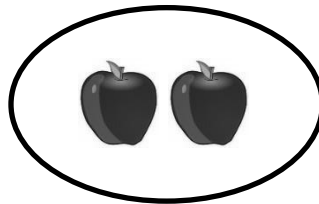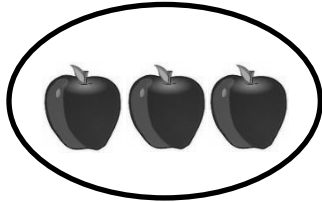
_____

_____

_____.


b. Draw a picture to show 2 × 3 = 6.
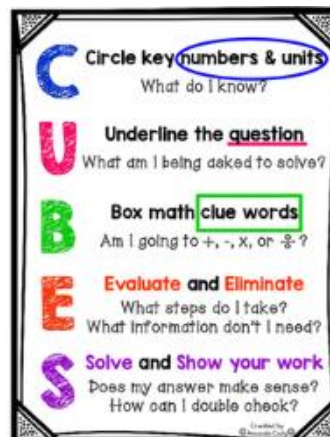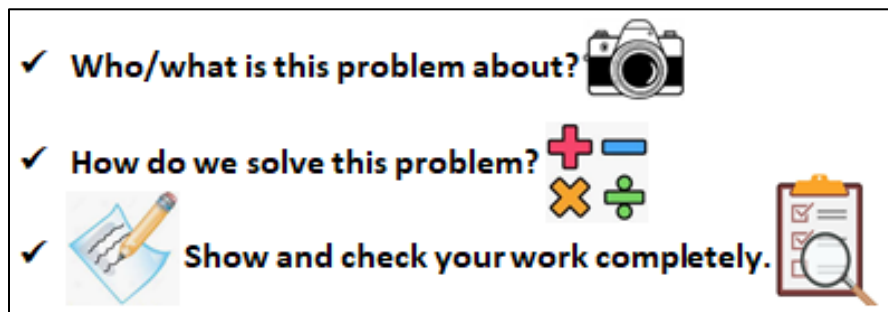
## Application:

Mrs. Mercado, Mrs. Page, and Ms. Maisenbacher each buy the same box of chocolate. Each box has 4 pieces of chocolate. How many pieces of chocolate do they have in all?

_____ + _____ + _____ = _____

## Exit Ticket:

1. The picture below shows 4 groups of 2 slices of watermelon.  How many watermelons are there in all?

4  × _____ = _____
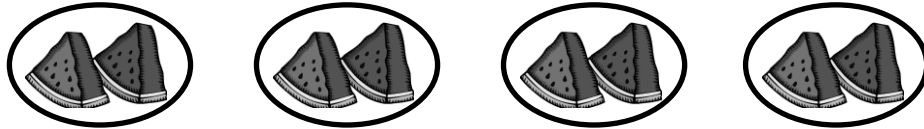
## Homework

Fill in the blanks to make true statements.

1.

⭐⭐ ⭐⭐
⭐⭐⭐ ⭐⭐⭐
⭐⭐ ⭐⭐
⭐⭐⭐ ⭐⭐⭐

 4 groups of five = _____

 4 fives = _____

 4 × 5 = _____

2.
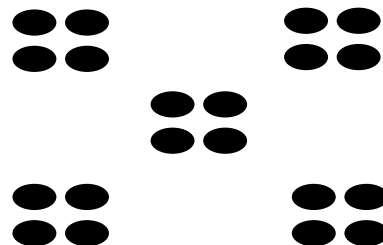
 5 groups of four = _____

 5 fours = _____

 5 × 4 = _____

2. Draw a picture to show 3 + 3 + 3 = 9.  Then, write a multiplication sentence to represent the picture.

○   ○   ○

_____ X 3 = 9
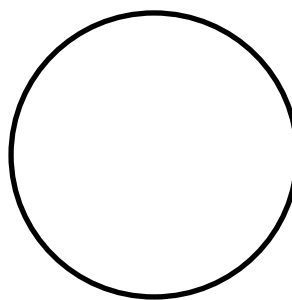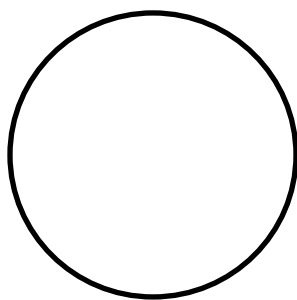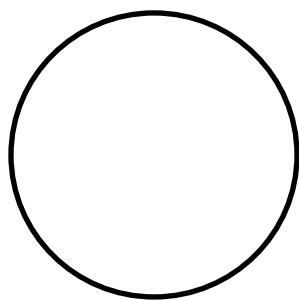
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**LEQ:** How can I relate multiplication to the array model?

**Objective:** I can skip-count by the number of objects in each row to relate multiplication to the array model.

**Vocabulary**:

➢ Array
➢ Factors
➢ Rows
➢ Columns

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**Do Now:**

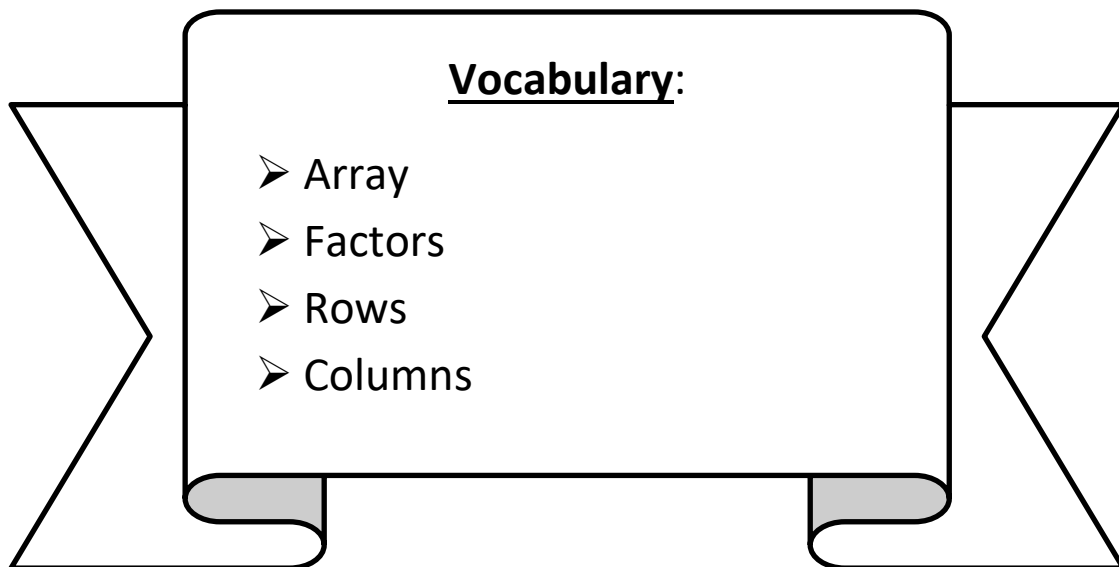| | | | | |
|---|---|---|---|---|
| 1. | 0 + 2 = | | 23. | 2 + 4 = |
| 2. | 2 + 2 = | | 24. | 2 + 6 = |
| 3. | 4 + 2 = | | 25. | 2 + 8 = |
| 4. | 6 + 2 = | | 26. | 2 + 10 = |
| 5. | 8 + 2 = | | 27. | 2 + 12 = |
| 6. | 10 + 2 = | | 28. | 2 + 14 = |
| 7. | 12 + 2 = | | 29. | 2 + 16 = |
| 8. | 14 + 2 = | | 30. | 2 + 18 = |
| 9. | 16 + 2 = | | 31. | 0 + 22 = |
| 10. | 18 + 2 = | | 32. | 22 + 22 = |
| 11. | 20 – 2 = | | 33. | 44 + 22 = |
| 12. | 18 – 2 = | | 34. | 66 + 22 = |
| 13. | 16 – 2 = | | 35. | 88 – 22 = |
| 14. | 14 – 2 = | | 36. | 66 – 22 = |
| 15. | 12 – 2 = | | 37. | 44 – 22 = |
| 16. | 10 – 2 = | | 38. | 22 – 22 = |
| 17. | 8 – 2 = | | 39. | 22 + 0 = |
| 18. | 6 – 2 = | | 40. | 22 + 22 = |
| 19. | 4 – 2 = | | 41. | 22 + 44 = |
| 20. | 2 – 2 = | | 42. | 66 + 22 = |
| 21. | 2 + 0 = | | 43. | 888 – 222 = |
| 22. | 2 + 2 = | | 44. | 666 – 222 = |

**Input:**

Arrays help us visualize _____. The _____ and the

_____each represent a _____. We multiply the rows and columns

to get the answer or the _____.  In an array, the rows read from left

to right and the columns read up and down.  The rows tell us the number of

groups and the columns tell the size of each group.
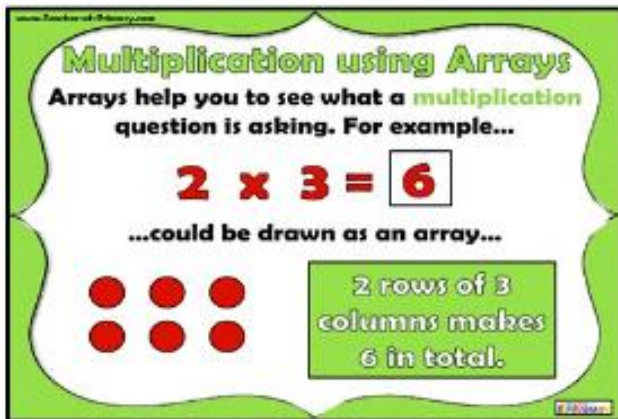


Writing a multiplication sentence
from an array

Rows x Columns = Product

OR

R x C = P
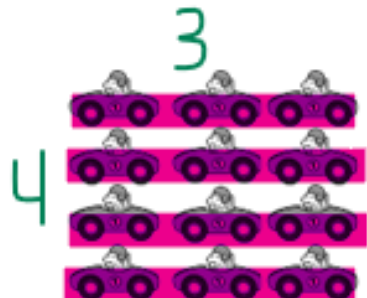


| | | |
|---|---|---|
| Rows: _____ | We say this as "_____ groups | R x C =P |
| Columns: _____ | of _____" | ____ x ____ = ____ |
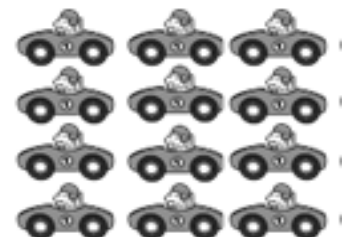
**Input:**

1. The dots below show 2 groups of 4.
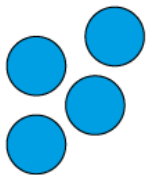
a. Redraw the dots as an array that shows 2 rows of 4. (think: what is the size of each group?)

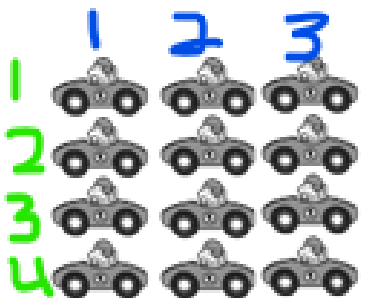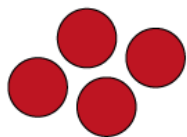b. Compare the drawing to your array.  Write at least 1 reason why they are the same and 1 reason why they are different.

_____

_____

_____.

2. Mrs. Page collects diamonds.  She arranges them in 3 rows of 5.  Draw Mrs. Page's array to show how many diamonds she has altogether.  Then, write a multiplication equation to describe the array.

_____ X _____ = _____

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**Problem Set:**

Use the arrays below to answer each set of questions.

1.     a.  How many rows of cars are there?  _____
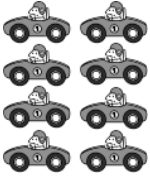
    b. How many cars are there in each row?  _____

2.     a.  What is the number of rows?  _____
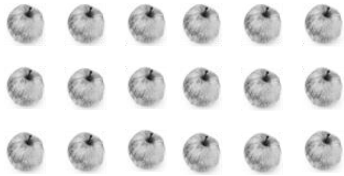
    b. What is the number of objects in each row?  _____

3.     a.  There are 4 spoons in each row.
    How many spoons are in 2 rows?  _____

    b. Write a multiplication expression to describe the array.
    _____ X _____=_____

4.     a.  There are 5 rows of triangles.  How many triangles are in each row?
    _____

    b.  Write a multiplication expression to describe the total number of

    triangles.  _____

5. The dots below show 2 groups of 5.

       a. Redraw the dots as an array that shows 2 rows of 5.

       b. Compare the drawing to your array.  Write at least 1 reason why they are the same and 1 reason why they are different.

_____

_____

_____

6. Mrs. Boomhower collects rocks.  She arranges them in 4 rows of 3.  Draw Mrs. Boomhower's array to show how many rocks she has altogether.  Then, write a multiplication equation to describe the array.

_____ X _____ = _____

7. Kenny organizes cans of food into an array.  He thinks, "My cans show 5 × 3!" Draw Kenny's array to find the total number of cans he organizes.

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**Application:**

Jessie arranges her 20 books as an array of equal groups on her bookcase. Jessie's bookcase has four shelves. Draw Jessie's array, then write a multiplication sentence to describe your array.

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## Exit Ticket:

1. ★ ★ ★   a.  How many stars are in each row?  _____

   ★ ★ ★

   ★ ★ ★     b. Write a multiplication equation to describe the array. _____X_____=_____

   ★ ★ ★

2. Mrs. McLean collects seashells.  She arranges them in 3 rows of 6.  Write a multiplication equation to describe the array. Find the product to show the total number of seashells.

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## **Homework**

Use the arrays below to answer each set of questions.

1.  a.  How many rows of erasers are there?  _____

    b.  How many erasers are there in each row?  _____

2.  a.  How many rows of squares are there?  _____

    b.  How many squares are in each row? _____ (Hint: columns)

    c.  Write a multiplication expression to describe the array.  ____X____=_____

3.     The triangles below show 3 groups of four.  Redraw the triangles as an array that shows 3 rows of four in the box provided below.

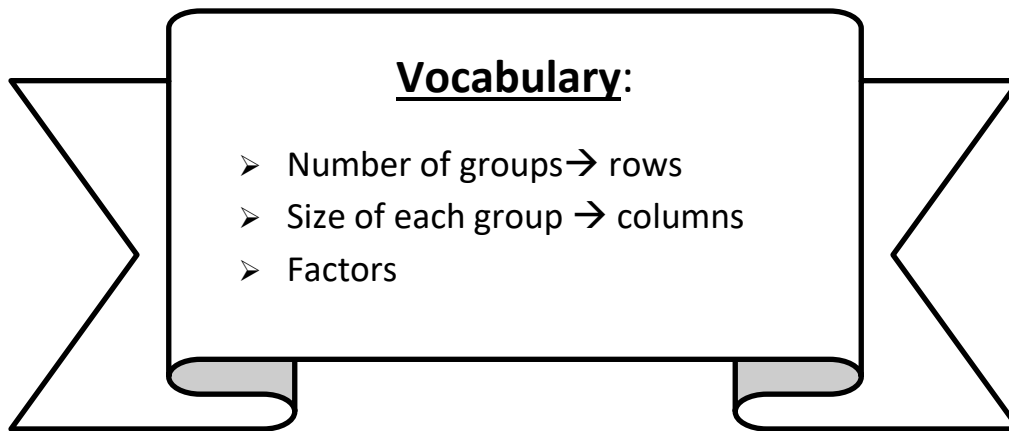**LEQ:** How can I interpret the meaning of factors?

**Objective:** I can attribute the number of groups to rows and the size of each group to columns to interpret the meaning of factors.

**Vocabulary**:

➢ Number of groups→ rows
➢ Size of each group → columns
➢ Factors

**Do Now:**

| | |
|---|---|
| 1. | 5 + 5 = |
| 2. | 2 fives = |
| 3. | 2 + 2 = |
| 4. | 2 twos = |
| 5. | 5 + 5 + 5 = |
| 6. | 3 fives = |
| 7. | 5 + 5 + 5 + 5 = |
| 8. | 4 fives = |
| 9. | 2 + 2 + 2 = |
| 10. | 3 twos = |
| 11. | 2 + 2 + 2 + 2 = |
| 12. | 4 twos = |
| 13. | 2 threes = |
| 14. | 3 + 3 = |
| 15. | 2 sixes = |
| 16. | 6 + 6 = |
| 17. | 2 fours = |
| 18. | 4 + 4 = |
| 19. | 5 fives = |
| 20. | 5 + 5 + 5 + 5 + 5 = |
| 21. | 5 twos = |

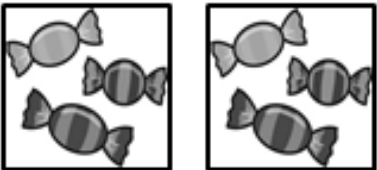| | |
|---|---|
| 23. | 8 + 8 = |
| 24. | 2 eights = |
| 25. | 7 + 7 = |
| 26. | 2 sevens = |
| 27. | 9 + 9 = |
| 28. | 2 nines = |
| 29. | 3 + 3 + 3 + 3 = |
| 30. | 4 threes = |
| 31. | 4 + 4 + 4 = |
| 32. | 3 fours = |
| 33. | 3 + 3 + 3 = |
| 34. | 3 threes = |
| 35. | 4 fives = |
| 36. | 5 + 5 + 5 + 5 = |
| 37. | 3 sevens = |
| 38. | 7 + 7 + 7 = |
| 39. | 3 nines = |
| 40. | 9 + 9 + 9 = |
| 41. | 3 sixes = |
| 42. | 6 + 6 + 6 = |
| 43. | 3 eights = |

**Input:**

The numbers that we multiply to get are product are the _____.

In an array, the rows and columns each represent one factor. The rows tell us the _____ of groups and the columns tell us the_____ of each group.

How many groups are in the array below? What is the size of each group?

R   ×   C =   P

____ X ____ = ____

_____     _____

| Grouping | Array | Number Bond |
|---|---|---|
| 2 groups of 3 | ____ groups of ____ | |
| | ____ X ____ = ____ | |

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**Input:**

**1. There are 5 flowers in each bunch.  How many flowers are in 3 bunches?**



   a.  Number of groups: _____          Size of each group: _____

   b.  3 × 5 = _____

   c.  There are _____ flowers altogether.

**2.  There are _____ loaves of bread in each row.  How many loaves of bread are there in 7 rows?**



   a. Number of rows: _____          Size of each row: _____

   b.   _____ × _____ = _____
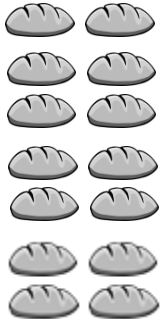
   c. There are _____ loaves of bread altogether.

**3. Draw an array that shows 3 rows of 5 squares.  Then, show a number bond where each part represents the amount in one row.**

| Array | Number Bond |
| --- | --- |
|  |  |

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**Problem Set:**

**Solve Problems 1–4 using the pictures provided for each problem.**

1.  **There are 5 flowers in each bunch.  How many flowers are in 4 bunches?**
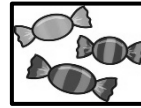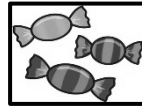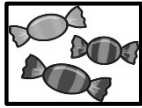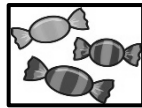
    

    d.  Number of groups: _____         Size of each group: _____

    e.  $4 \times 5 =$ _____

    f.  There are _____ flowers altogether.

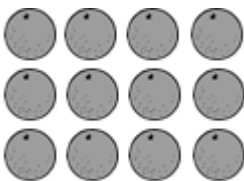2.  **There are _____ candies in each box.  How many candies are in 6 boxes?**

    

    a.  Number of groups: _____         Size of each group: _____

    b.  $6 \times$ _____ = _____

    c.  There are _____ candies altogether.

3.  **There are 4 oranges in each row.  How many oranges are there in _____ rows?**

    

    a.  Number of rows: _____         Size of each row: _____

    b.  _____ $\times 4 =$ _____

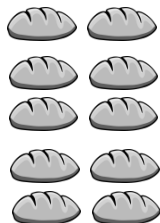    c.  There are _____ oranges altogether.

4.  **There are _____ loaves of bread in each row.  How many loaves of bread are there in 5 rows?**

a. Number of rows: _____          Size of each row: _____

b. _____ × _____ = _____

c. There are _____ loaves of bread altogether.

5.     **a. Write a multiplication equation for the array shown below.**

X X X
X X X
X X X
X X X

_____ X _____ = _____

b. **Draw a number bond for the array where each part represents the amount in one row.**

6.     **Draw an array that shows 5 rows of 2.  Then, show a number bond where each part represents the size of each group.**
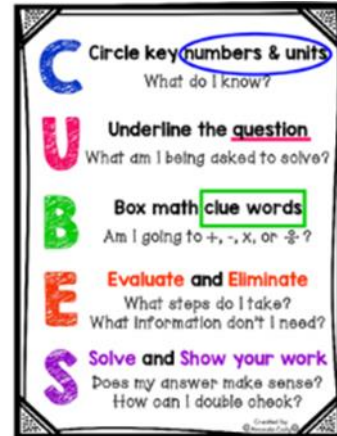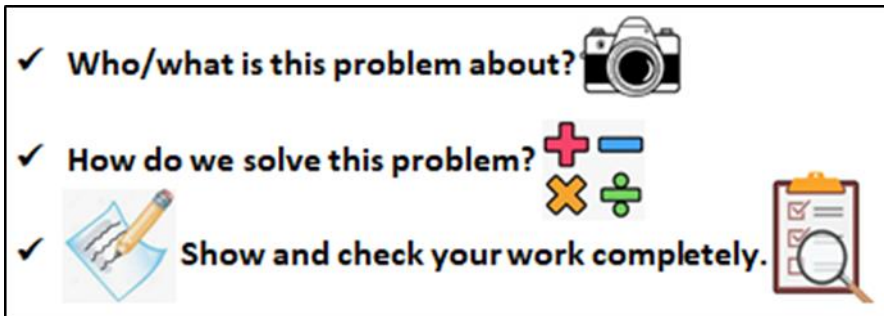
| Array | Number Bond |
|---|---|
|  |  |

## Application:

Abdullah is helping his mother decorate for a party. He places 12 cups on a table. There are 3 cups in each row. How many equal groups of cups did Abdullah set up?

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## Exit Ticket:

Draw an array that shows 5 rows of 3 squares.  Then, show a number bond where each part represents the amount in one row. Write a multiplication equation to represent the problem.

| Array | Number Bond |
|-------|-------------|
|       |             |

**_____ X _____ = _____**

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## **Homework**

Solve Problems 1–4 using the pictures provided for each problem.

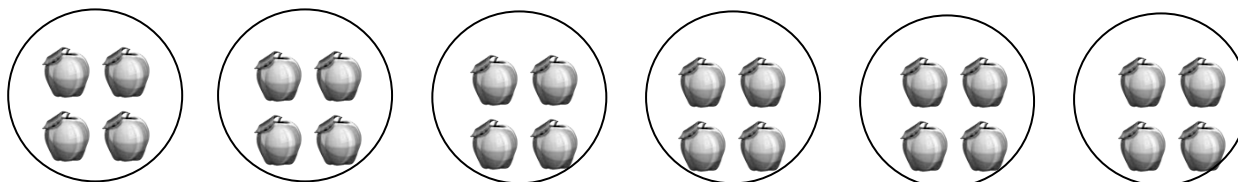1. There are 5 pineapples in each group.  How many pineapples are there in 5 groups?



    **a.** Number of groups: _____        Size of each group: _____

    **b.** $5 \times 5 =$ _____        **c**. There are _____ pineapples altogether.

2. There are _____ apples in each basket.  How many apples are there in 6 baskets?



    **a.** Number of groups: _____        Size of each group: _____

    **b.** $6 \times$ _____ = _____        **c**. There are _____ apples altogether.

3.    Draw an array that shows 4 rows of 2 squares.  Then, show a number bond where each part represents the amount in one row.
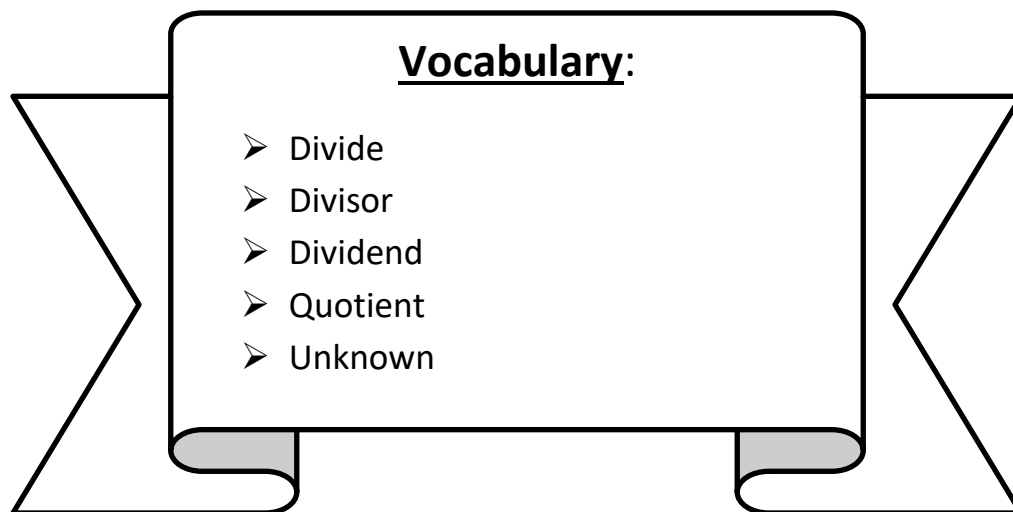
| Array | Number Bond |
|---|---|
|  |  |

**LEQ:** How can I understand the meaning of the unknown as the size of the group in division?

**Objective:** I can count the number of objects in each group to understand the meaning of the unknown as the size of each group in division.

**Vocabulary**:

- Divide
- Divisor
- Dividend
- Quotient
- Unknown

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## Do Now:

**Use your knowledge of repeated addition to multiply.**

| | | | | |
|---|---|---|---|---|
| 23. | 5 + 5 + 5 = | 45. | 3 + 3 + 3 + 3 = |
| 24. | 3 × 5 = | 46. | 4 × 3 = |
| 25. | 5 × 3 = | 47. | 3 × 4 = |
| 26. | 2 + 2 + 2 = | 48. | 3 + 3 + 3 = |
| 27. | 3 × 2 = | 49. | 3 × 3 = |
| 28. | 2 × 3 = | 50. | 3 + 3 + 3 + 3 + 3 = |
| 29. | 5 + 5 = | 51. | 5 × 3 = |
| 30. | 2 × 5 = | 52. | 3 × 5 = |
| 31. | 5 × 2 = | 53. | 7 + 7 = |
| 32. | 2 + 2 + 2 + 2 = | 54. | 2 × 7 = |
| 33. | 4 × 2 = | 55. | 7 × 2 = |
| 34. | 2 × 4 = | 56. | 9 + 9 = |
| 35. | 2 + 2 + 2 + 2 + 2 = | 57. | 2 × 9 = |
| 36. | 5 × 2 = | 58. | 9 × 2 = |
| 37. | 2 × 5 = | 59. | 6 + 6 = |
| 38. | 3 + 3 = | 60. | 6 × 2 = |
| 39. | 2 × 3 = | 61. | 2 × 6 = |
| 40. | 3 × 2 = | 62. | 8 + 8 = |
| 41. | 5 + 5 + 5 + 5 = | 63. | 2 × 8 = |
| 42. | 4 × 5 = | 64. | 8 × 2 = |
| 43. | 5 × 4 = | 65. | 7 + 7 + 7 + 7 = |
| 44. | 2 × 2 = | 66. | 4 × 7 = |

## Input:

If I bought 10 markers that I wanted to share or divide with Mrs. Mercado equally,
I would get 5 markers and Mrs. Mercado would also get _____markers**.**
I _____10 into 2 equal groups.

To divide means to break up in bigger number into smaller, equal groups. If I kept
6 markers and gave 4 to Mrs. Mercado that would _____ be division because my
groups are not equal. The number of markers that Mrs. Mercado received was a
mystery or _____ until we counted the size of the group. We write
this as 10÷2= 5.

$$10 \div 2 = 5$$

_____          _____          _____
(total number of markers)      (number of groups)          (size of each group)

Name: _____          Thursday, September 24, 2020

BCCS-B                              College: _____

## Input:

**1. Count the size of each group to find the quotient. Then fill in the blanks to complete the division sentence.**
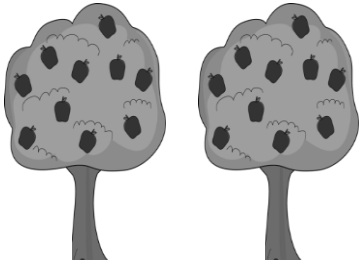
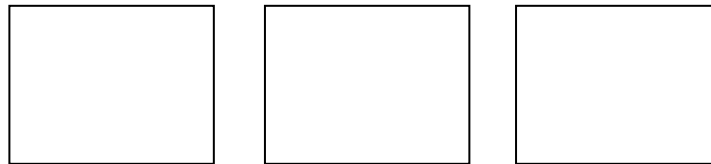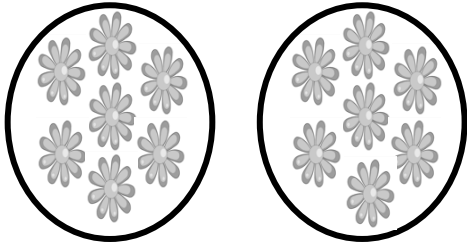20 apples are divided into _____ equal groups.

There are _____ apples in each group.

$20 \div$ _____ = _____

$12 \div$ _____ = _____
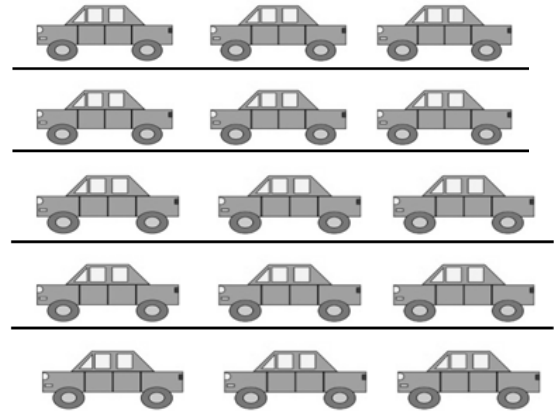
**2. There are 15 pencils for the class.  The teacher divides them into 3 equal groups.  Draw the number of pencils in each group.**

There are _____ pencils in each group.

_____ $\div$ _____ = _____

**3. Draw a picture to show 9÷ 3.  Then, fill in the blank to make a true division sentence.**

$9 \div 3 =$ _____

## Problem Set:

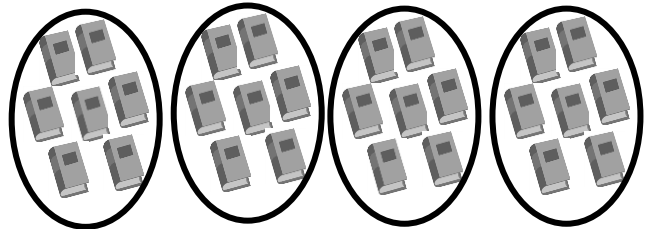**Count the size of each group to find the quotient. Then fill in the blanks.**

1.

14 flowers are divided into 2 equal groups.
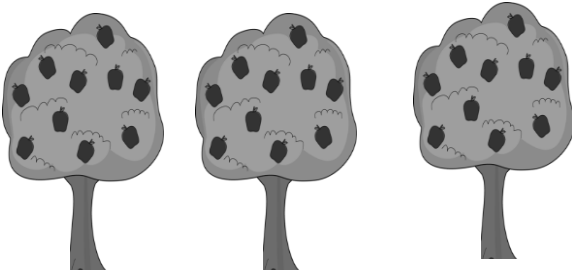
There are _____ flowers in each group.

2.

28 books are divided into 4 equal groups.

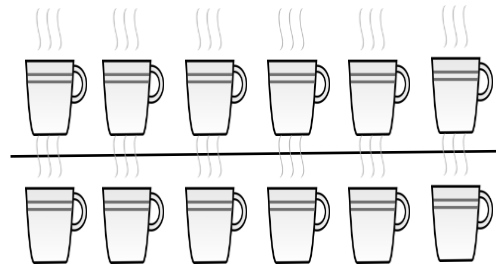There are _____ books in each group.

3.

30 apples are divided into _____ equal groups.

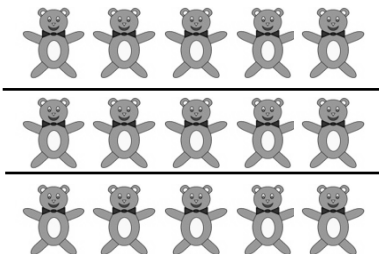There are _____ apples in each group.

4.

_____ cups are divided into _____ equal groups.
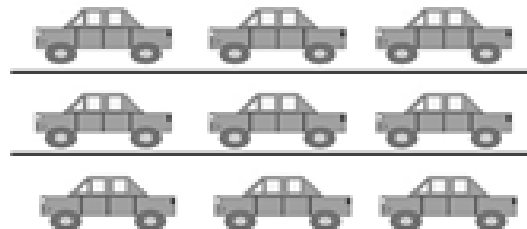
There are _____ cups in each group.

$12 \div 2 =$ _____

5.

There are _____ toys in each group.

$15 \div 3 =$ _____

6.

$9 \div 3 =$ _____

7. **Ms. Sherman has 24 colored pencils.  She puts them in 4 equal groups. How many colored pencils are in each group?**
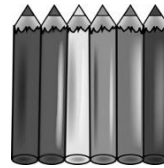
There are _____ colored pencils in each group.

$24 \div 4 =$ _____

8. **Zaymir picks 20 apples.  He divides them equally between 5 baskets.  Draw the apples in each basket.**
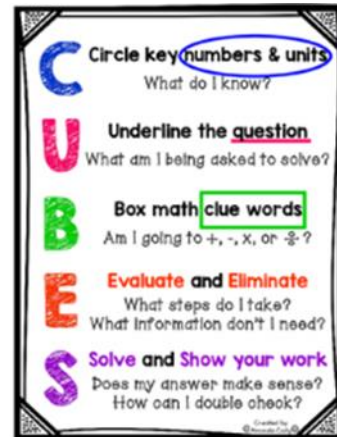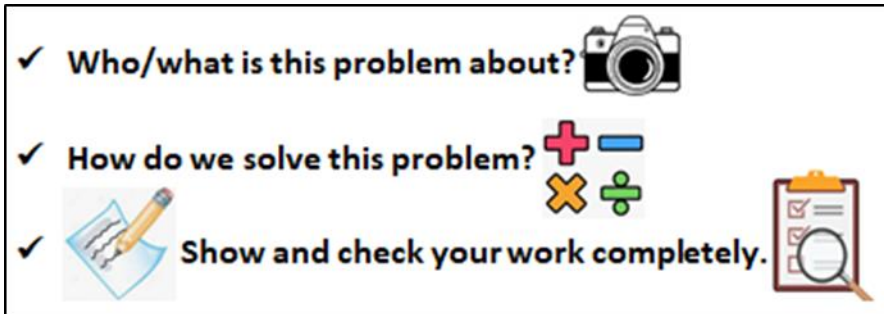
There are _____ apples in each basket.

$20 \div$ _____ $=$ _____

Name: _____          Thursday, September 24, 2020

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## **Application:**

Mrs. Wise has 24 stickers to share with her guided reading group. There are 6 scholars in her group. If she divided the stickers equally, how many stickers did each scholar receive? Show your work.

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**Exit Ticket:**

1. **There are 16 glue sticks for Yale.  Ms. Maisenbacher divides them into 4 equal groups.  Draw the number of glue sticks in each group.**

    | | | | |
    |---|---|---|---|

    There are _____ glue sticks in each group.

    $16 \div$ _____ = _____

2. **Draw a picture to show 15 ÷ 3.  Then, fill in the blank to make a true division sentence.**
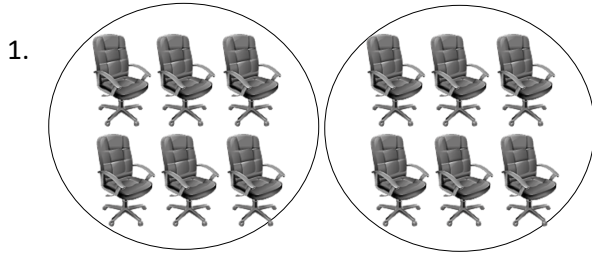
    $15 \div 3 =$ _____

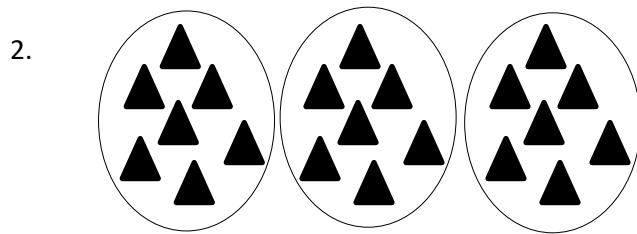BCCS-B                                              College: _____
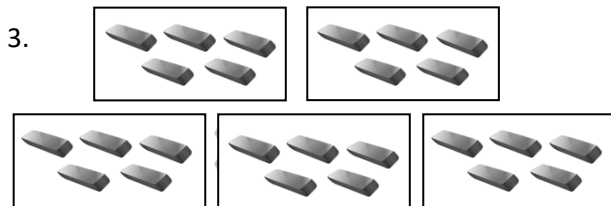
## Homework

1.



12 chairs are divided into 2 equal groups.

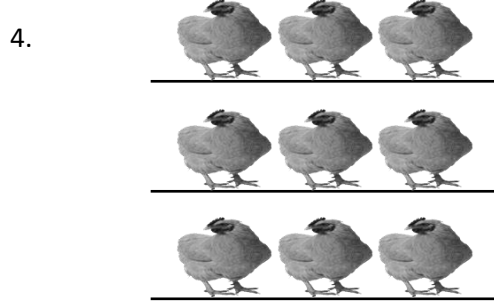There are _____ chairs in each group

2.



21 triangles are divided into 3 equal groups.

There are _____ triangles in each group.

3.



25 erasers are divided into _____ equal groups.

There are _____ erasers in each group.

4.



_____ chickens are divided into _____ equal groups.

There are _____ chickens in each group.

9   ÷ 3 = _____

5. Mr. Miller has markers.  The picture shows how he placed them on his desk.  Write a division sentence to represent how he equally grouped his markers.
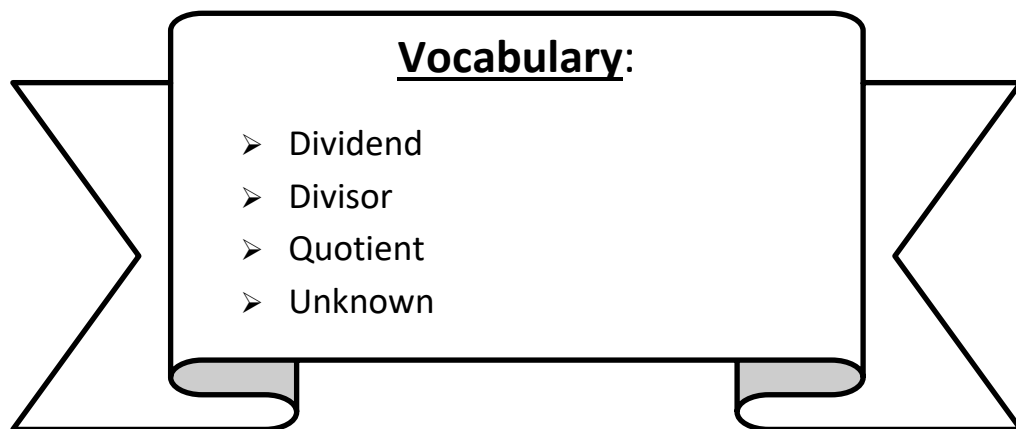
There are _____ markers in each row.

**LEQ:** How can I understand the meaning of the unknown as the number of groups in division?

**Objective:** I can make equal groups using the given size of each group and total number of objects to understand the meaning of the unknown as the number of groups in division.

**Vocabulary**:

➢ Dividend
➢ Divisor
➢ Quotient
➢ Unknown

## Do Now:

Write a multiplication sentence to describe each model.

1)

___2___  ×  ___4___  =  ___8___

**2** groups of **4**

**2**  x  **4** = **8**

2)

_____  ×  _____  =  _____

3)

_____  ×  _____  =  _____

4)

_____  ×  _____  =  _____

5)

_____  ×  _____  =  _____
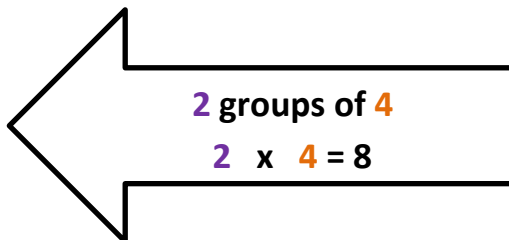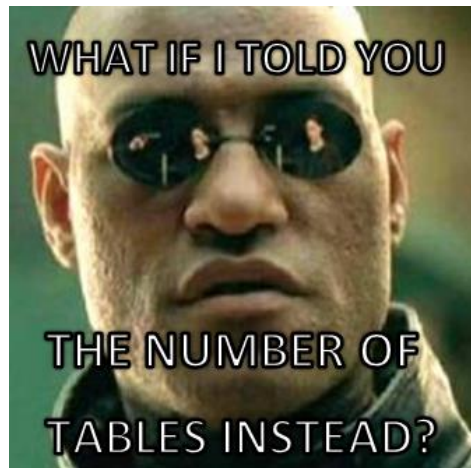
**Input:**

| Dividend | Divisor | Quotient |

$$6 \div 3 = 2$$

18 people are going to a party. 6 people fit at each table. How many tables are needed to sit everybody? We know that the dividend is 18 and the divisor is 6. The quotient or the unknown is _____ tables. We write this as $18 \div 6 =$ _____. We find the quotient by finding the number of tables needed.
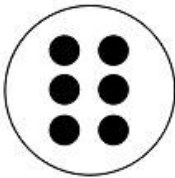
$$18 \div 6 = \underline{\hspace{2cm}}$$



21 people are going to a party.  Each of the 3 tables fit the same number of people. How many people sat at each table? We know that the dividend is 21 and the divisor is 3. The quotient or the unknown is _____ people. We write this as $21 \div 3 =$ _____. We find the quotient by finding the number of people at each table.

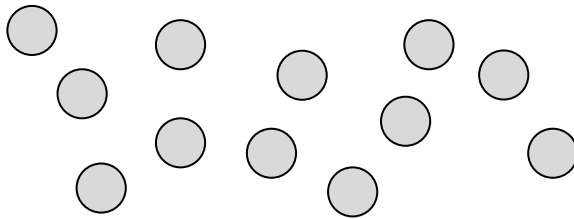$$21 \div 3 = \underline{\hspace{2cm}}$$

**1.**
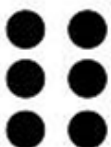
Divide 10 tomatoes into groups of 2.

There are _____ groups of 2 tomatoes.

$10 \div 2 =$ _____

_____

**2. Jenny has 12 crackers.  She puts 3 crackers in each bag.  Circle the crackers to show Jenny's bags.**

a.  Write a division sentence where the answer represents the number of Jenny's bags.

b.  Draw a number bond to represent the problem.

_____

**3. Jaylan has 20 wheels to make toy cars.  He uses 4 wheels for each car.**

a.  Use a count-by to find the number of cars Jaylan can build.  Make a drawing to match your counting.
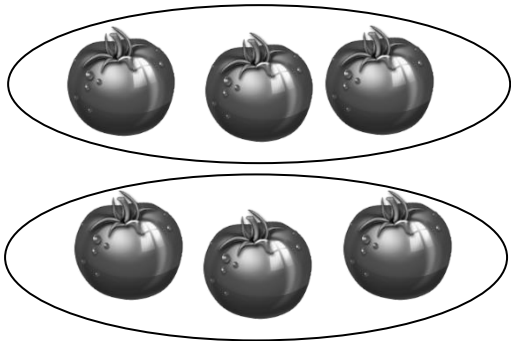
b.  Write a division sentence to represent the problem.

## **Problem Set:**

| | |
|---|---|
| 1. <br><br>Divide 6 tomatoes into groups of 3.<br><br>There are _____ groups of 3 tomatoes.<br><br>6 ÷ 3 = 2 | 2. <br><br>Divide 8 lollipops into groups of 2.<br><br>There are _____ groups.<br><br>8 ÷ 2 = _____ |
| 3. <br><br>Divide 10 stars into groups of 5.<br><br>10 ÷ 5 = _____ | 4. <br><br>Divide the shells to show 12 ÷ 3 = _____, where the unknown represents the number of groups.<br><br>How many groups are there? _____ |
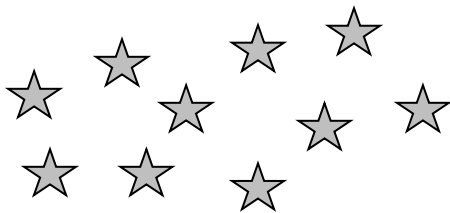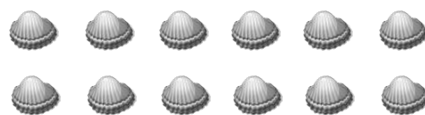
**5. Ms. Sherman has 9 crackers.  She puts 3 crackers in each bag.  Circle the crackers to show Ms. Sherman's bags.**
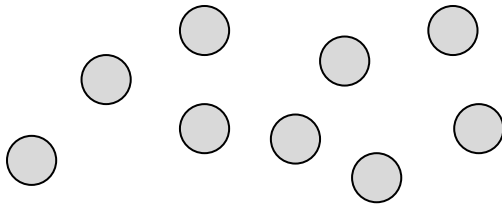
a.  Write a division sentence where the answer represents the number of Ms. Sherman's bags.

b.  Draw a number bond to represent the problem.

**6. Coach has 16 wheels to make toy cars.  He uses 4 wheels for each car.**
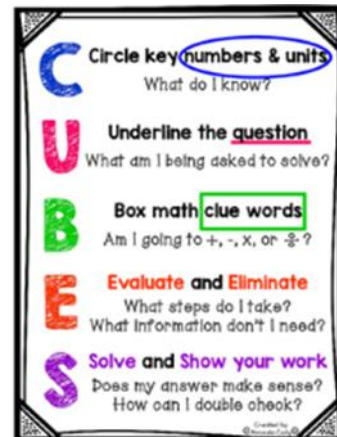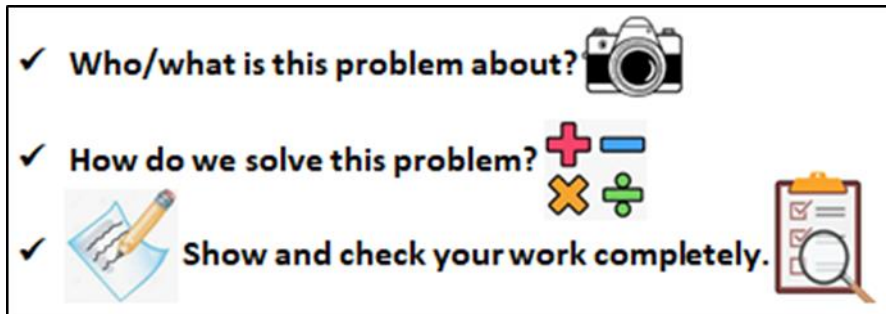
c.  Use a count-by to find the number of cars Coach can build.  Make a drawing to match your counting.

d.  Write a division sentence to represent the problem.

## Application:

Mr. Miller puts 8 chocolate chips in each muffin he made. If he had 48 chocolate chips and he used all of it, how many muffins did he make?

**Exit Ticket:**
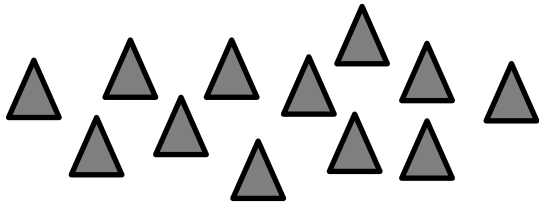
1.  **Divide 12 triangles into groups of 6.**



12 ÷ 6 = _____

## Homework
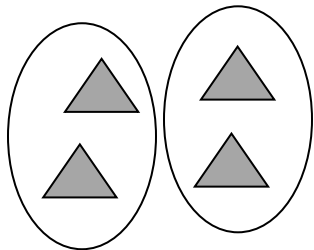
| 1. | 2. |
|---|---|
|  |  |
| Divide 4 triangles into groups of 2. | Divide 9 eggs into groups of 3. |
| There are _____ groups of 2 triangles. | There are _____ groups. |
| $4 \div 2 = 2$ | $9 \div 3 =$ _____ |

3. Jacob draws cats.  He draws 4 legs on each cat for a total of 24 legs.

    a.  Use a count-by to find the number of cats Jacob draws.  Make a drawing to match your counting. *The first one has been done for you.*



    b.  Write a division sentence to represent the problem.

        $24 \div 4 =$ _____

Name_____

# 3rd Grade Math Remote Learning Packet

# Week 2

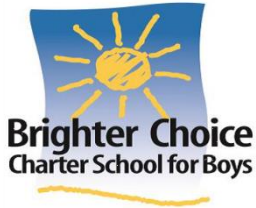# September 28th – October 1st
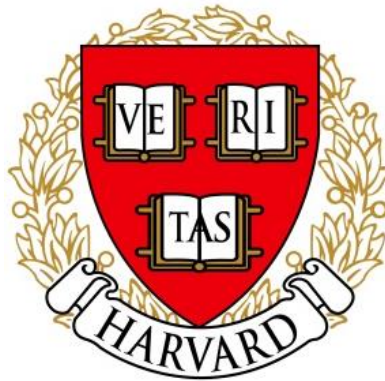
Dear Educator,

My signature is proof that I have reviewed my scholar's work and supported him to the best of my ability to complete all assignments.

_____          _____

(Parent Signature)                                         (Date)

Parents please note that all academic are also available on our website at www.brighterchoice.org under the heading "Remote Learning." All academic packet assignments are mandatory and must be completed by all scholars.

**LEQ:** How can I use the array model to interpret the unknown in division?

**Objective:** I can create an array using the number of groups (rows) and the size of each group (columns) to interpret the unknown in division.

**Vocabulary**:

➢ Quotient

➢ Unknown factor

➢ Inverse operation
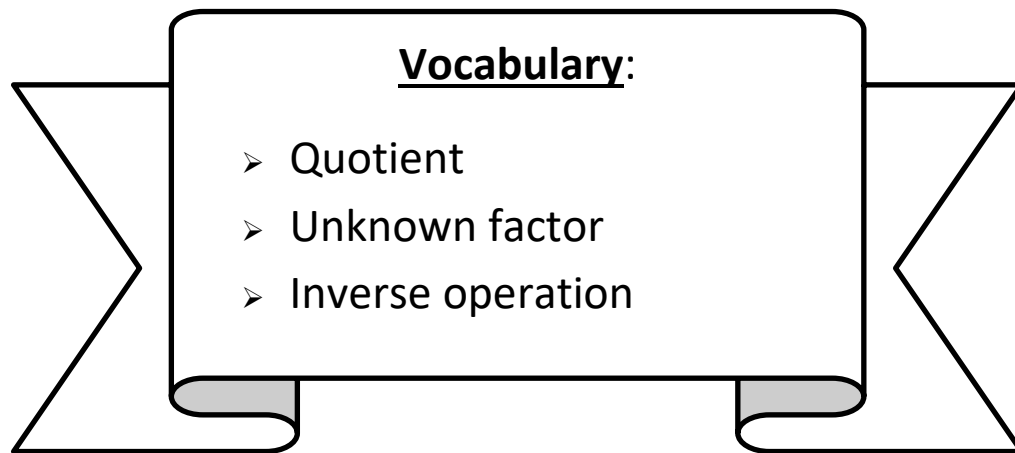
Name: _____          Monday, September 28, 2020

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**Do Now:**

**Fill in the blanks below using the phrase provided.**

Example:

5 groups of 2 = 5 x **2**____          **6**____ groups of 3 = 6 x 3

| | |
|---|---|
| 1. 4 groups of 6 = 4 x _____ | 2. 5 groups of 3 = 5 x _____ |
| 3. 9 groups of 2= 9 x _____ | 4. _____ groups of 7 = 3 x 7 |
| 5. _____ groups of 5 = 5 x 5 | 6. 2 groups of 10 =____ x 10 |
| 7. 3 groups of 3 = 3 x _____ | 8. _____ groups of 10 = 5 x 10 |
| 9. 6 groups of 4 = _____ x 4 | 10.    _____ groups of 8 = 4x 8 |

**Input:**

Division and multiplication are _____ operations because you can use the answer in one of them to prove the answer in another. For example, we know that 2x **5**= 10. We can express this as 10÷2= **5**. 5 is both the _____ and a _____. The product of the factors will always equal the dividend.

Mrs. Clute gives the equation 4 × _____ = 24.  Cameron finds the answer by writing and solving 24 ÷ 4 = _____.  Explain why Cameron's method works.



_____

_____

_____
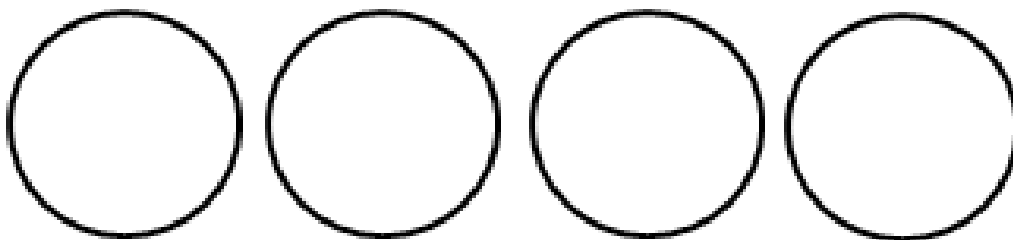
| **Array Model: 4 groups** | **Array Model: 6 groups** |
|---|---|
| 4 x _____ = 24 | 6 x _____ = 24 |
| 24 ÷ 4 = _____ | 24 ÷ 6 = _____ |
| the number in the blanks represents _____ _____ | the number in the blanks represents _____ _____ |

## Problem Set:

**1. Mrs. Lewis gives the equation 4 × _____ = 12.  Charlie finds the answer by writing and solving 12 ÷ 4 = _____.  Explain why Charlie's method works.**



_____

_____

_____

_____
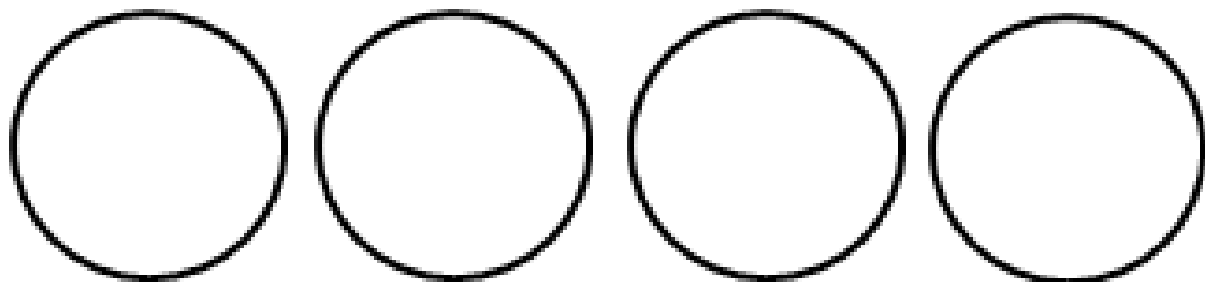
| Array Model: 4 groups | Array Model: 3 groups |
|---|---|
| 4 x _____ = 12 <br><br> 12 ÷ 4 = _____ <br><br> the number in the blanks represents <br><br> _____ <br> _____ | 3 x _____ = 12 <br><br> 12 ÷ 3 = _____ <br><br> the number in the blanks represents <br><br> _____ <br> _____ |

**2. Coach puts 15 tennis balls into cans.  Each can holds 3 balls.  Circle groups of 3 to show the balls in each can.**

Coach needs _____ cans.

_____ × 3 = 15

15 ÷ 3 = _____
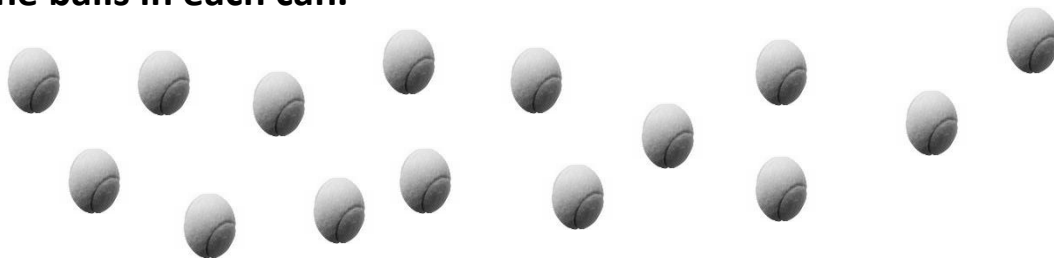
**3. Draw an array to model Problem 2.**

**4. Mrs. Blomgren arranges 21 index cards into rows of 7 for her presentation. Draw an array to help you fill in the blanks below.**

21 ÷ 7 = _____

_____ × 7 = 21

What do the unknown factor and quotient represent?

_____

_____

## Application:

Twenty children play a game.  There are 5 children on each team.  How many teams play the game?  Write a division and multiplication sentence to represent the problem.

| _____ x _____ = _____ | _____ ÷ _____ = _____ |
| --- | --- |

**Exit Ticket:**

**1. Carter arranges 12 index cards into rows of 6 for his presentation.  Draw an array to help you fill in the blanks below.**

12 ÷ 6 = _____

_____ × 6 = 12

What do the unknown factor and quotient represent?

_____

_____

**Homework**

**1. Mr. Moore puts 12 pencils into boxes.  Each box holds 4 pencils.  Circle groups of 4 to show the pencils in each box.**

Mr. Moore needs _____ boxes.

_____ × 4 = 12

12 ÷ 4 = _____

**2. Draw an array to model Problem 1**

**LEQ:** How can I demonstrate the commutative property of multiplication?

**Objective:** I rotate an array to switch the rows and columns and use C x R = P in a multiplication sentence to demonstrate the commutative property of multiplication.

**Vocabulary**:
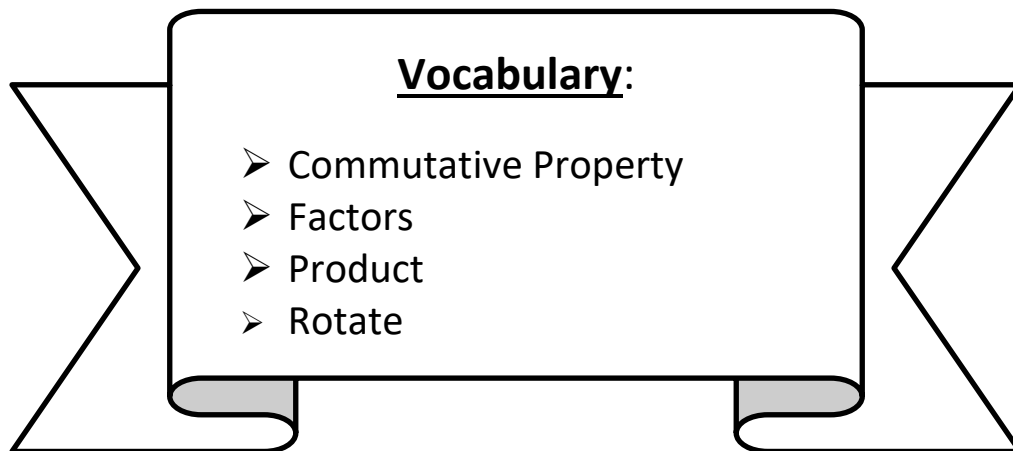
➢ Commutative Property
➢ Factors
➢ Product
➢ Rotate

**Do Now:**

**Write a multiplication sentence for each expression.  Skip-count to find the product.**

**Example →** 5 twos: __5__ x __1__ = __10__

a. 6 twos: _____ x _____ = _____

b. 2 sixes: _____ x _____ = _____

c. 7 twos: _____ x _____ = _____

d. 2 sevens: _____ x _____ = _____

e. 9 twos: _____ x _____ = _____

f. 2 nines: _____ x _____ = _____

**Challenge:**

g. 11 twos: _____ x _____ = _____

h. 2 twelves: _____ x _____ = _____

## Input:

Factors can change order without changing the product. We call that the

_____property. For example, if we know that 2 x 4=8,

then we also know that _____. We are only changing the order of the

factors, not its value. In an array, we can _____ the array 90 degrees

to switch our rows and columns. Our equation to find the product is now

_____.

| **4 x 2 = 8** | **2 x 4 = 8** |
|---|---|
| ★★<br>★★<br>★★<br>★★ | ★★★★<br>★★★★ |

**1. a. Draw an array that shows 5 rows of 2.**     **2. a. Draw an array that shows 2 rows of 5.**

b. Write a multiplication sentence where the first factor represents the number of rows.

_____ × _____ = _____

b. Write a multiplication sentence where the first factor represents the number of rows.

_____ × _____ = _____

Name: _____          Tuesday, September 29, 2020

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**Input:**

**Mrs. Page writes 2 × 9 = 9 × 2 on the board.  Do you agree or disagree?  Draw arrays to help explain your thinking.**

_____

_____

_____

_____

| **2x9 = _____** | **9x2 = _____** |
|---|---|
|  |  |

**Problem Set:**

1.  a.  **Draw an array that shows 6 rows of 3.**

2.  a.  **Draw an array that shows 3 rows of 6.**
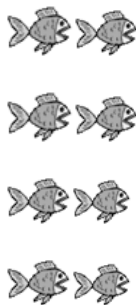
b. Write a multiplication sentence where the first factor represents the number of rows.

b. Write a multiplication sentence where the first factor represents the number of rows.

_____ × _____ = _____

_____ × _____ = _____

**3. Use your knowledge of RxC=P and the commutative property to write and solve multiplication sentences for each array.**
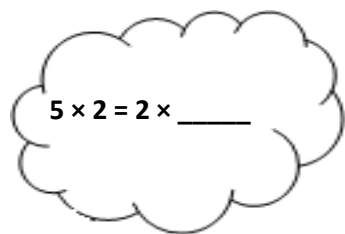
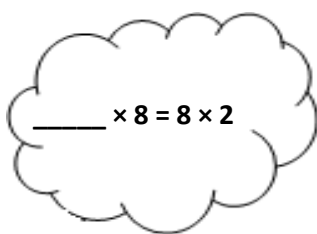_____        _____

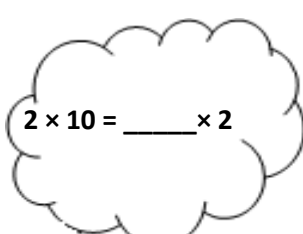**4. Ms. Neville writes 2 × 7 = 7 × 2 on the board.  Do you agree or disagree?  Draw arrays to help explain your thinking.**

_____

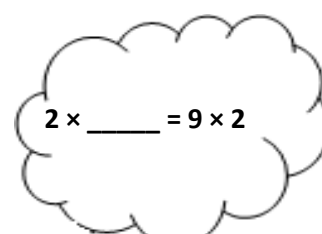_____

_____

_____

| | |
|---|---|
| **2x7 = ____** | **7x2 = _____** |
| | |

**5. Find the missing factor to make each equation true.**

5 × 2 = 2 × _____

_____ × 8 = 8 × 2

2 × 10 = _____ × 2

2 × _____ = 9 × 2
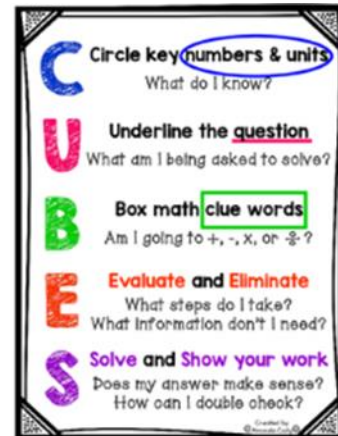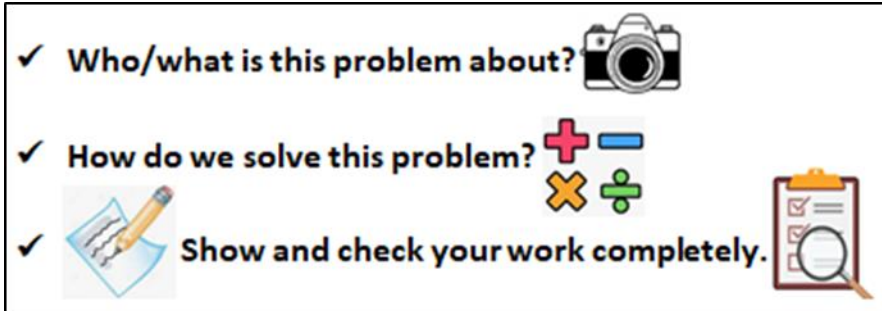
## Application:

Mr. Pierce arranges 18 basketballs two different ways. The first time he has 6 rows of basketballs and the second time he has 3 rows of basketballs.  Draw two different arrays to show how Mr. Pierce arranges the basketballs and write a multiplication sentence for each array.

| 6 rows | 3 rows |
|---|---|
| | |
| 6 x _____ =18 | 3 x _____ = 18 |

Name: _____                    Tuesday, September 29, 2020

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## Exit Ticket:

**Mrs. Mercado says that 2x10 = 10x2. Do you agree with her? Draw arrays and use skip-counting to explain your thinking.**

Tuesday, September 29, 2020

BCCS-B

College: _____

## **Homework**

1.  a.  **Draw an array that shows 4 rows of 5.**

2.  a.  **Draw an array that shows 5 rows of 4.**

b. Write a multiplication sentence where the first factor represents the number of rows.

b. Write a multiplication sentence where the first factor represents the number of rows.

_____ × _____ = _____

_____ × _____ = _____

**2. Find the missing factor to make each equation true.**

$2 \times 6 = 6 \times$ _____

_____ $\times 2 = 2 \times 7$

$9 \times 2 =$ _____ $\times 9$

$2 \times$ ____ $= 10 \times 2$

**3. Use your knowledge of RxC=P to write and solve multiplication sentences for each array.**

_____

_____
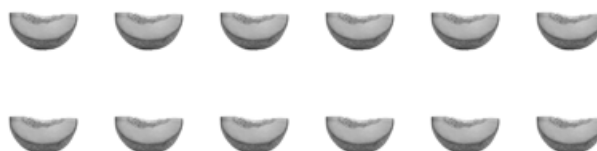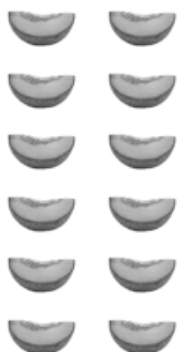
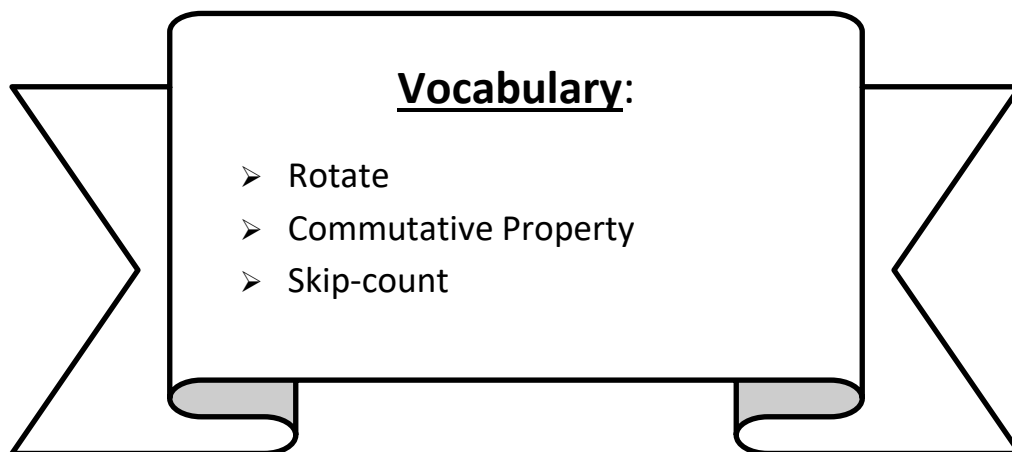Name: _____                     Wednesday, September 30, 2020

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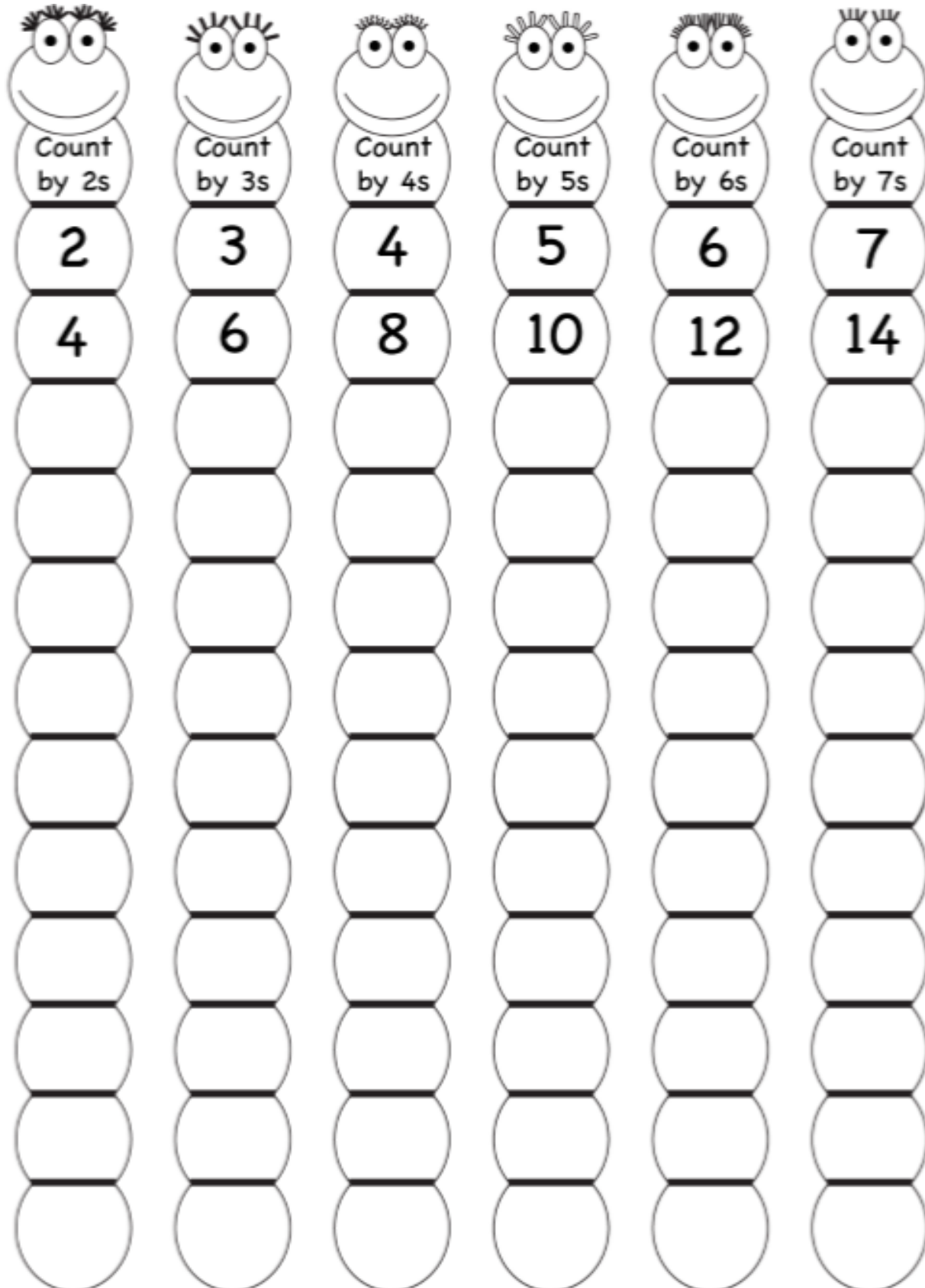**LEQ:** How can I practice related multiplication facts involving the commutative property?

**Objective:** I can label the rows to skip-count and practice related multiplication facts involving the commutative property.

**Vocabulary**:

➢ Rotate
➢ Commutative Property
➢ Skip-count

## Do Now:

**Skip-count until you reach the bottom of each caterpillar!**

| Count by 2s | Count by 3s | Count by 4s | Count by 5s | Count by 6s | Count by 7s |
|:---:|:---:|:---:|:---:|:---:|:---:|
| 2 | 3 | 4 | 5 | 6 | 7 |
| 4 | 6 | 8 | 10 | 12 | 14 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
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|  |  |  |  |  |  |

**Input:**

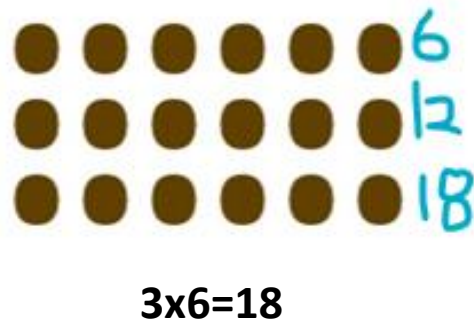The commutative property states that even when the _____ are switched and arrays are _____+_____, the product remains the same. We can prove this by counting by the number of groups or rows. This method is called _____ We will label each row to show the skip-counting sequence until we reach the _____.

**For example:**



6x3=18



3x6=18

**Draw and label each array below with a skip-count sequence to find the product.**

| 2x9= _____ | 9x2= _____ |
|---|---|
| | |

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**Ms. Ogden organizes pictures on a table. She arranges them in 4 rows and 6 columns.**

    a. ___Draw an array to show Ms. Ogden's pictures.

    b. ___Use your array to write a multiplication sentence to find Ms. Ogden's total number of pictures.

       _____ X _____ = _____

    c. ___Label your array to show how you skip-count to solve your multiplication sentence.

    d. ___Use what you know about the commutative property to write a different multiplication sentence for your array.

       _____ X _____ = _____

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**Problem Set:**

**1. Draw and label each array with a skip-count sequence to find the product.**

| **4x5= _____** | **5x4= _____** |
|---|---|
| | |
| **3x7= _____** | **7x3= _____** |
| | |
| **1x10=_____** | **10x1=_____** |
| | |

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**2. Mr. Young organizes erasers on a table. He arranges them in 3 rows and 9 columns.**

   a. ___Draw an array to show Mr. Young's erasers.

   b. ___Use your array to write a multiplication sentence to find Mr. Young's total number of erasers.
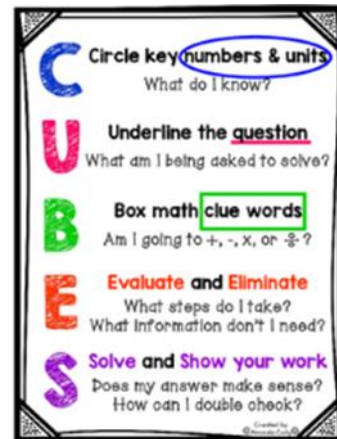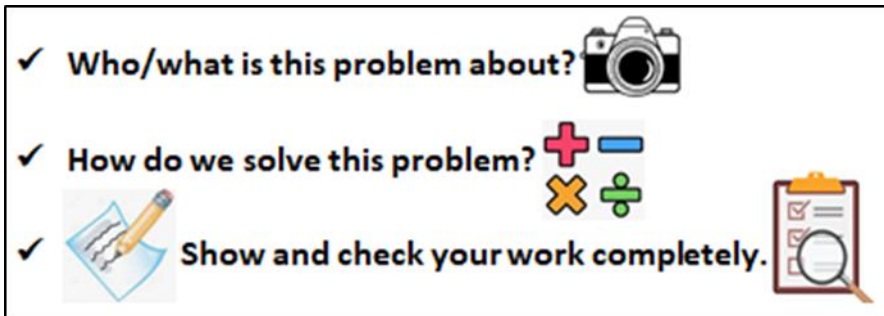
      _____ X _____ = _____

   c. ___Label your array to show how you skip-count to solve your multiplication sentence.

   d. ___Use what you know about the commutative property to write a different multiplication sentence for your array.

      _____ X _____ = _____

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## Application:

Scholars sit in 2 rows of 8 on the carpet for math time. Aaron says, "We make 2 equal groups." Daniel says, "We make 8 equal groups." Who is correct? Explain how you know using models, numbers, and words.

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## Exit Ticket:

**1. Draw and label each array with a skip-count sequence to find the product.**

| 4x6= _____ | 6x4= _____ |
|---|---|
|  |  |

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## Homework

**1. Draw and label each array with a skip-count sequence to find the product.**

| 4x9= _____ | 9x4= _____ |
|---|---|
| | |
| **3x10= _____** | **10x3= _____** |
| | |

**LEQ:** How can I find related multiplication facts using addition?

**Objective:** I can add equal groups to an array model to find related multiplication facts.

**Vocabulary:**

➢ Array

➢ Sum
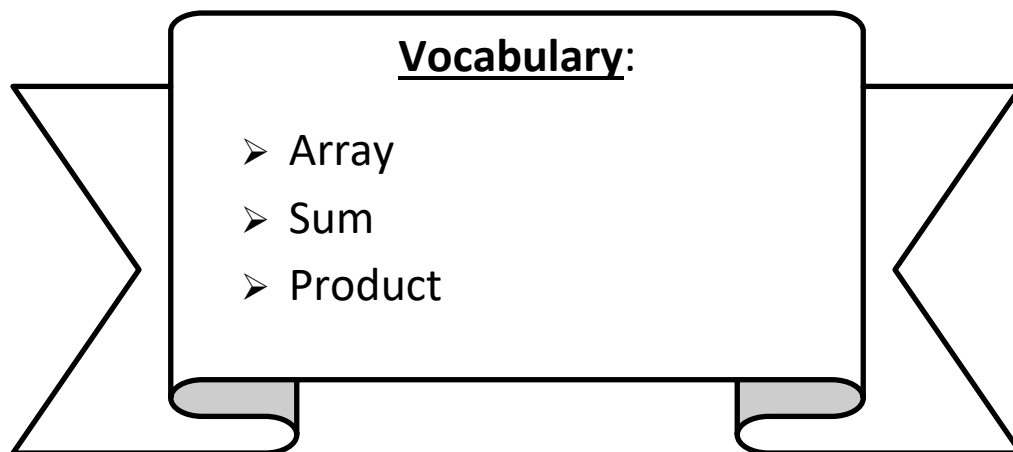
➢ Product

## Do Now:

**Multiply by 2 to find the missing products below.**

| | | | |
|---|---|---|---|
| 2 x 1 = _____ | 2 x 2 = _____ | 2 x 3 = _____ | 2 x 4 = _____ |
| 2 x 5 = _____ | 2 x 1 = _____ | 2 x 2 = _____ | 2 x 1 = _____ |
| 2 x 3 = _____ | 2 x 1 = _____ | 2 x 4 = _____ | 2 x 1 = _____ |
| 2 x 5 = _____ | 2 x 1 = _____ | 2 x 2 = _____ | 2 x 3 = _____ |
| 2 x 2 = _____ | 2 x 4 = _____ | 2 x 2 = _____ | 2 x 5 = _____ |
| 2 x 2 = _____ | 2 x 1 = _____ | 2 x 2 = _____ | 2 x 3 = _____ |
| 2 x 1 = _____ | 2 x 3 = _____ | 2 x 2 = _____ | 2 x 3 = _____ |
| 2 x 4 = _____ | 2 x 3 = _____ | 2 x 5 = _____ | 2 x 3 = _____ |
| 2 x 4 = _____ | 2 x 1 = _____ | 2 x 4 = _____ | 2 x 2 = _____ |
| 2 x 4 = _____ | 2 x 3 = _____ | 2 x 4 = _____ | 2 x 5 = _____ |
| 2 x 4 = _____ | 2 x 5 = _____ | 2 x 1 = _____ | 2 x 5 = _____ |
| 2 x 2 = _____ | 2 x 5 = _____ | 2 x 3 = _____ | 2 x 5 = _____ |
| 2 x 4 = _____ | 2 x 2 = _____ | 2 x 4 = _____ | 2 x 3 = _____ |
| 2 x 5 = _____ | 2 x 3 = _____ | 2 x 2 = _____ | 2 x 4 = _____ |
| 2 x 3 = _____ | 2 x 5 = _____ | 2 x 2 = _____ | 2 x 4 = _____ |

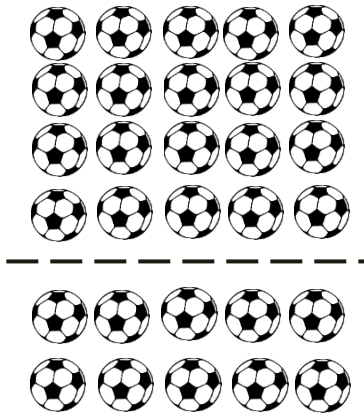Name: _____          Thursday, October 1<sup>st</sup>, 2020

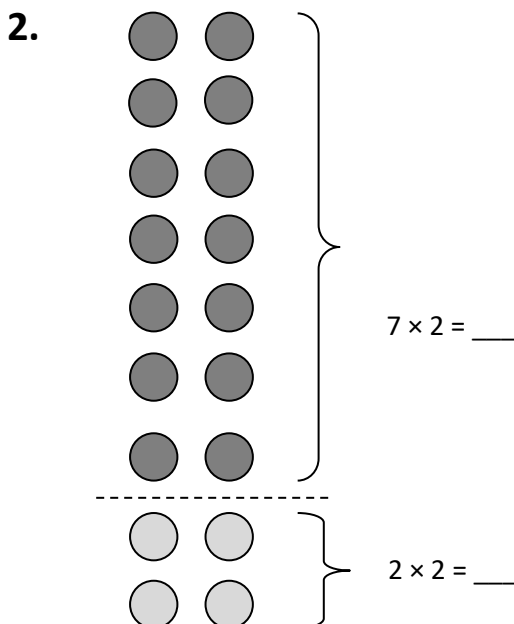BCCS-B                           College: _____

**Input:**

We can use _____ multiplication facts to help us with more complicated ones. Some familiar facts include **twos, fives, and tens.** In an array, we can add additional _____ groups or _____ to our familiar facts. We find the _____ of the two smaller products to find a larger product.

**1. The team organizes soccer balls into 4 rows of 5.  The coach adds 2 rows of 5 soccer balls.  Complete the equations to describe the total array.**
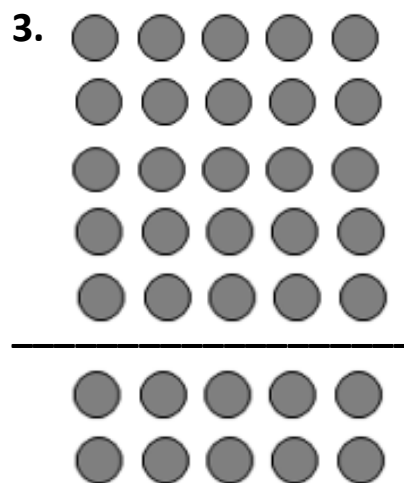
4 fives + 2 fives = _____ fives

_____ × 5 = _____

**2.**

$7 \times 2 =$ ___

$2 \times 2 =$ ___

14 + 4 = _____

_____ × 2 = _____

**3.**

_____

**Problem Set:**

1.

5 twos + 2 twos = _____ twos

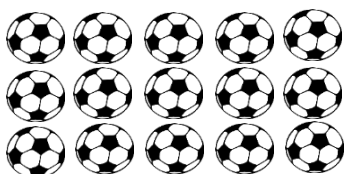(5x2) + (2x2) =

7× 2 = _____

2.

$5 \times 2 =$ ___

$4 \times 2 =$ ___

**$9 \times 2 =$ _____**
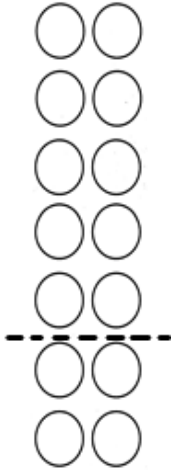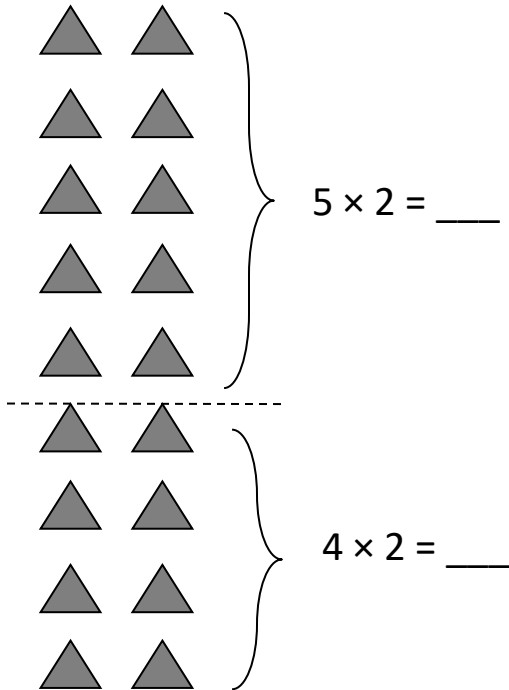
**3. The team organizes soccer balls into 2 rows of 5.  The coach adds 3 rows of 5 soccer balls.  Complete the equations to describe the total array.**
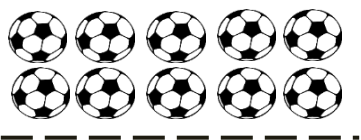
a.  (5 + 5) + (5 + 5 + 5) = _____

b.  2 fives + 3 fives = _____ fives

c.  _____ × 5 = _____

**4. Franklin collects stickers.  He organizes his stickers in 5 rows of four.**

    a.  Draw an array to represent Franklin's stickers.  Use an x to show each sticker.

    b.  Solve the equation to find Franklin's total number of stickers.  $5 \times 4 =$ _____

    c.  Franklin adds 2 more rows.  Use circles to show his new stickers on the array in above.

    d.  Complete the equation to show how you add the totals of 2 multiplication facts to find Franklin's total number of stickers.
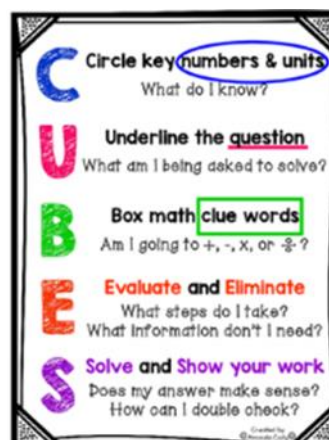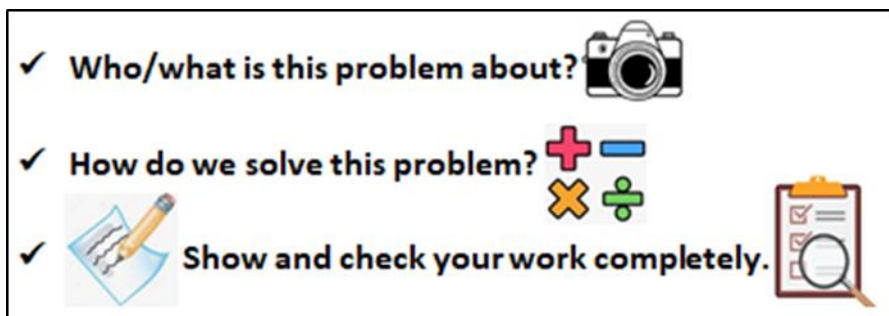
       _____ + _____ = 28

    e.  Complete the unknown to show Franklin's total number of stickers.

       _____ $\times 4 = 28$

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**Application:**

Mr. Mercado puts his work tools in an array of 6x5. His friend Mr. John adds his tools in an array of 3 rows of 5. How many tools do they have together? Write a complete multiplication sentence.

## Exit Ticket:

**Add equal group of five to fill in the blanks below.**

$6 \times 5 =$ ___

$$8 \times 5 = \underline{\hspace{3cm}}$$

$2 \times 5 =$ ___

## Homework

**1. Dan organizes his stickers into 3 rows of four.  Irene adds 2 more rows of stickers.  Complete the equations to describe the total number of stickers in the array.**
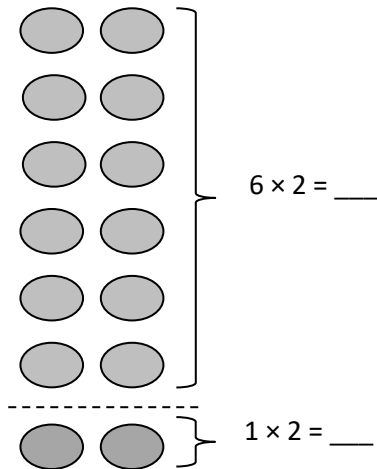
a.  $(4 + 4 + 4) + (4 + 4) =$ _____

b.  3 fours + _____ fours = _____ fours

c.  _____ × 4 = _____

**2.  7x2= _____**

$6 \times 2 =$ ___

$1 \times 2 =$ ___

$12 + 2 =$ _____

_____ × 2 = 14