Using Commutative and Distributive

We know that the commutative property of multiplication deals with **having the same product despite the interchanging positions of factors in an expression**. Meanwhile, we know that the distributive property of multiplication deals with **breaking larger factors apart to multiply to easier facts**. With the knowledge of the commutative and the distributive properties, we can combine these strategies to easily solve for larger facts.

That means that **after interchanging the position of the factors, we can break one factor apart to distribute it afterwards**. We can take out one group from it then add it afterwards.

Consider **8 x 5**.
We know that we can also read it as **5 x 8**. This means that there are 5 groups of 8. If we take out one group from it, it will be 4 groups of 8 plus another 8. Writing it as an expression will look like this: **4 x 8 + 8**.
Multiply 4 to 8 and we will get 32, then add 8 to 32 to get the final product, which is **40**.

For example:

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Commutative & Distributive Guided Notes

Math 3

8 x 5

Number of groups Size of group

8 groups of 5

can also be read as

5 x 8

Number of groups Size of group

5 groups of 8

can be drawn as

if we take out one group of 8, the expression will be

4 x 8 + 8

We know that 4 x 8 is equal to 32.

Then, we 32 + 8 is equa to 40.

The product of 8 x 5 is **40**.

Analyze the following equal groups.

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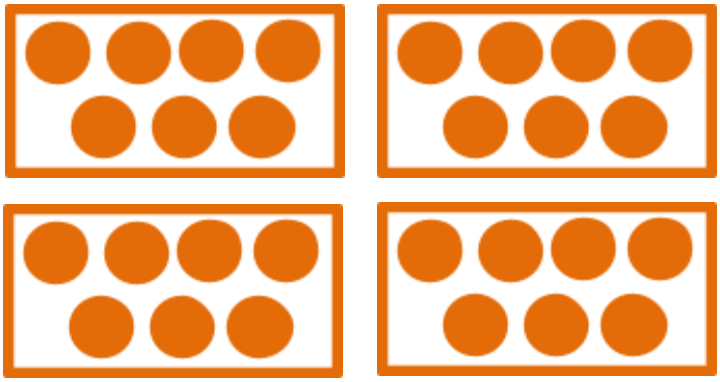
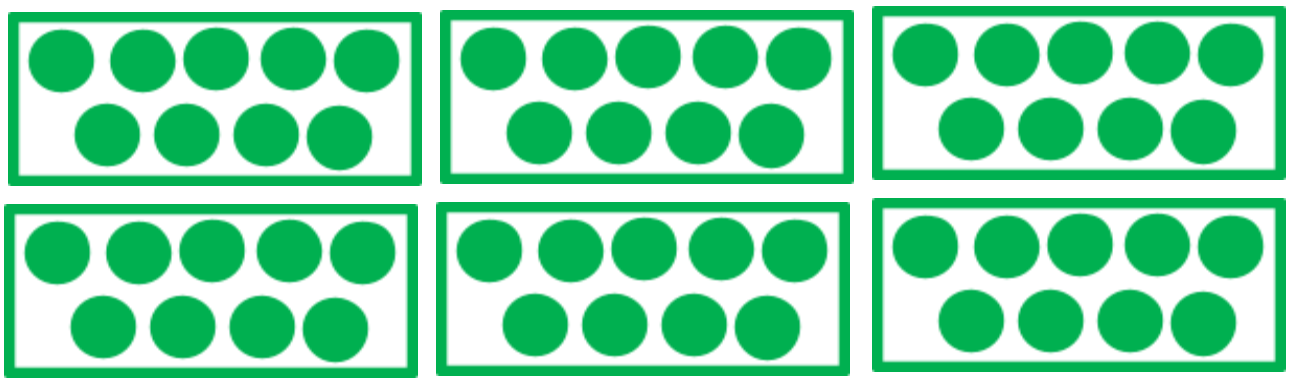
Commutative & Distributive Guided Notes

Math 3



How many sevens are there?



How many nines are there?

Time to think

1. If there are 6 groups of 9, explain how many groups of 9 will be left if you take out 3 groups.

2. Use distribution in writing the expression of the equal groups above.

Complete the equal groups to complete the equations.

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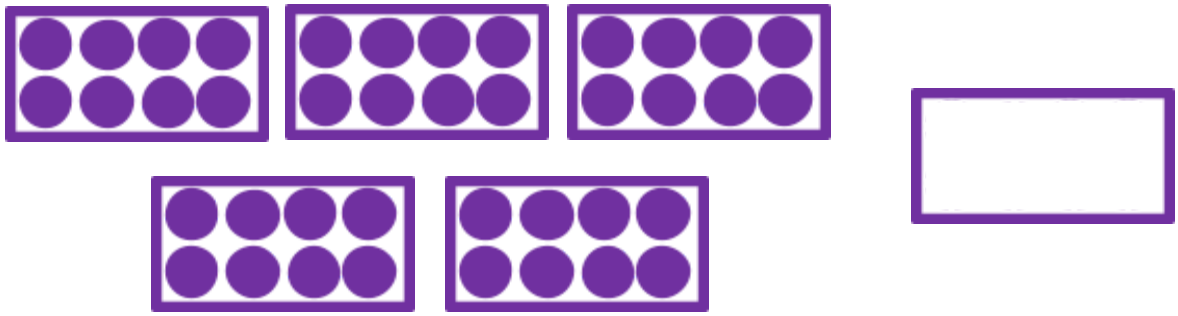
Commutative & Distributive Guided Notes

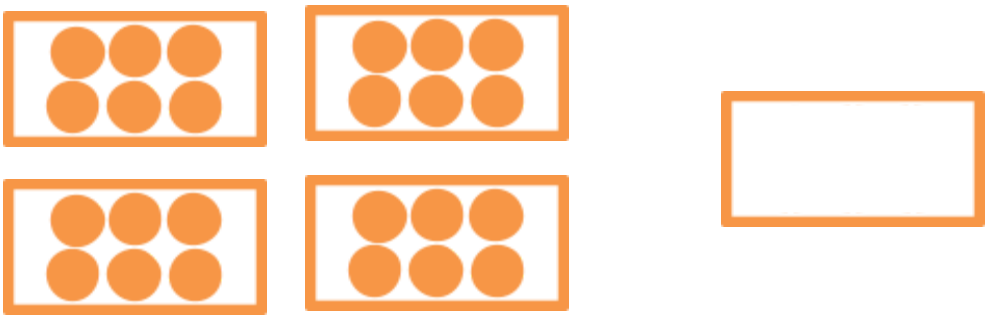
Math 3

6 groups of ___



___ x ___ = ___ x ___ + ___ = ___

5 groups of ___



___ x ___ = ___ x ___ + ___ = ___

6 groups of 7

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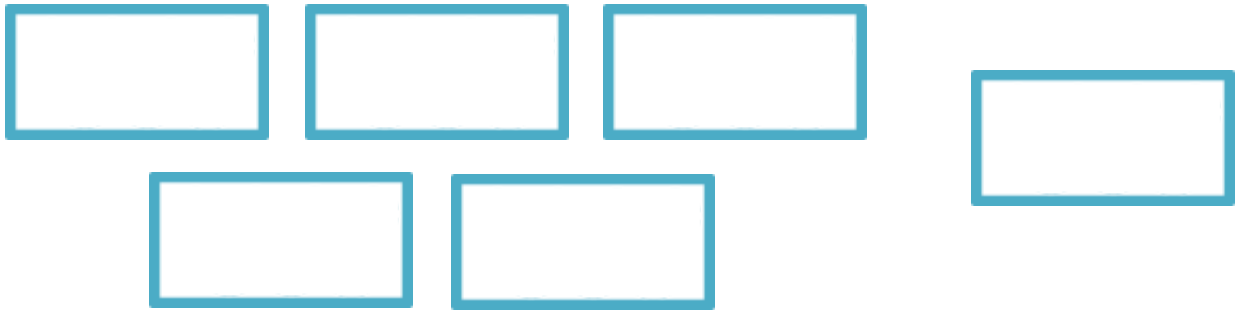
Commutative & Distributive Guided Notes

Math 3



___ x ___ = ___ x ___ + ___ = ___

Time to Think

1. How can this strategy of distribution make use the known facts of 2, 3, 4, and 5?

2. How would you break apart 9 x 9 into two smaller facts of 4 and 5? Write the new expression.

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Commutative & Distributive Guided Notes

Math 3

Complete the following equations. Then, draw an array to show the distribution.

7 x 8 = __ x __ = (__ + __) x 7 = (__ x 7) + (__ x 7)
= __ + __ = ____

6 x 9 = __ x __ = (__ + __) x 6 = (__ x 6) + (__ x 6)
= __ + __ = ____

Name: _____ Period: _____ Date: _____

Commutative & Distributive Guided Notes

Math 3

Time to Think

Using what we learned about the commutative and distributive strategies, answer the following situations.

1. Monica has 8 peanuts in each pouch. She has 5 pouches. How many peanuts does she have? Draw equal groups.

2. Abby has 9 envelopes with 7 files each inside. How man files does Abby have? Draw an array model.