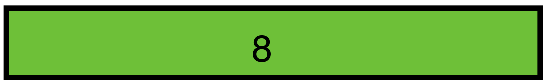
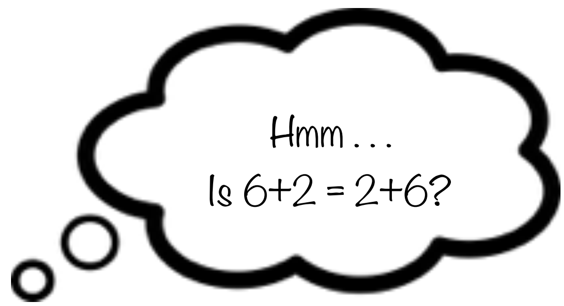
Commutative Property of Addition

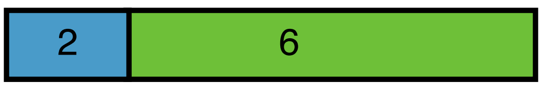
Let’s model 6+2.

Adding like terms together, we can see that the total is 8.





What if we modeled 2+6 instead?



Surprise! The total is again 8!

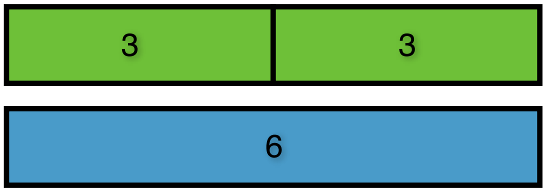
The models above demonstrate the **commutative property of addition**: the order in which numbers are added together does not change the sum! In other words:

a + b = b + a.

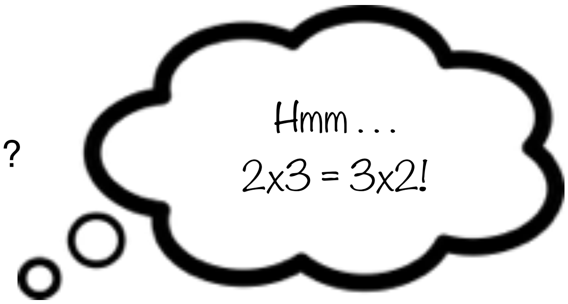
Model 3+5 and 5+3, and show that you get the same result!

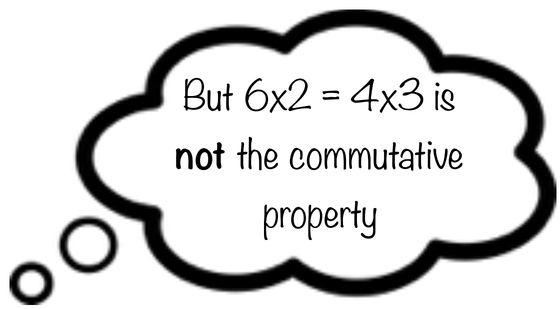
Commutative Property of Multiplication

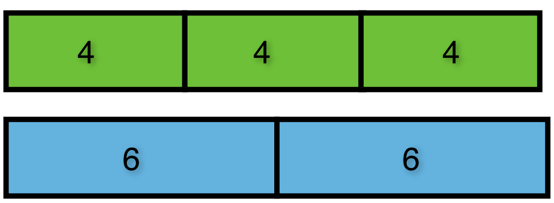
Let's consider the expression 3x2. As we saw in the multiplication section, this can be modeled as two groups of three:



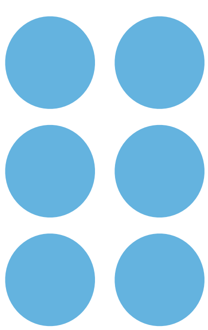
Now what if the expression was written as 2x3?



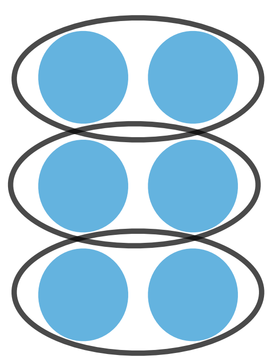




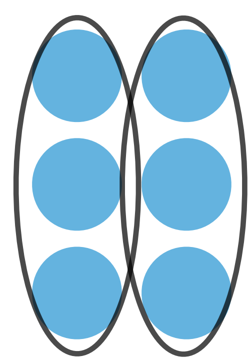
The commutative property applies when you want to **change the order of the numbers** that you are multiplying. Check out the relationship:



3x2 =
2x3



3x2 =
Three groups
of two



2x3 =
Two groups
of three

The models on the previous page demonstrate **the commutative property of multiplication**: the order in which numbers are multiplied does not change the product. In other words:

a x

Model 2x4, using either circles or bars.

Now model 4x2, using either circles are bars.

Show that the models of 2x4 and 4x2 are related.
Hint: you can use the strategies on the previous page!