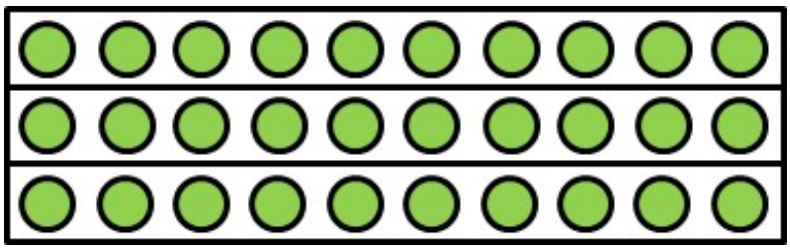
5.OA Picturing Factors in Different Orders

Task

a. Find all the factor pairs for 30. For each factor pair, draw a picture that shows both of the factors as well as the product. For example, $3 \times 10 = 30$ and this picture shows 3 groups of 10 circles for a total of 30 circles:

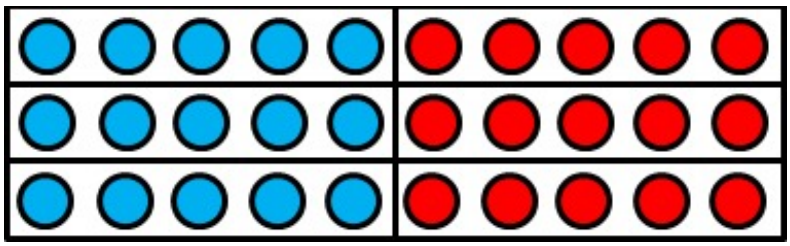


Make sure you have a picture for both ways of ordering the factors in each pair. For example, make sure you have a picture that represents $10 \times 3 = 30$ as well as one that represents $3 \times 10 = 30$. You can use the same picture if you can explain how it shows the product written in the other order.

b. We can also write 30 as a product of *three* factors. For example,

$$30 = 2 \times (3 \times 5)$$

If we think of this as 2 groups with (3 groups of 5 circles in each group), then we can draw a picture that shows this:



We can change the order of these three factors as well:

$$30 = 2 \times (5 \times 3)$$

$$30 = 3 \times (2 \times 5)$$

$$30 = 3 \times (5 \times 2)$$

$$30 = 5 \times (2 \times 3)$$

$$30 = 5 \times (3 \times 2)$$

Draw a picture for each one that reflects the order of the factors.