

## What is the equal groups strategy?

The equal groups strategy is one way to multiply factors visually. Factors are what we call to the numbers that we multiply. Multiplication using the equal groups strategy means having to place **a certain number of objects into a certain number of groups**. The factors are the numbers that determine **how many groups to make** and **how many items to put in each group**.

That means that **the amount of items inside one group is always equal to the amount of items inside other groups**. The total number of items in all the groups is what we call the product, which is the answer to a multiplication problem.

We can read a multiplication equation  **$A \times B$**  as having  **$A$  equal groups of  $B$** .

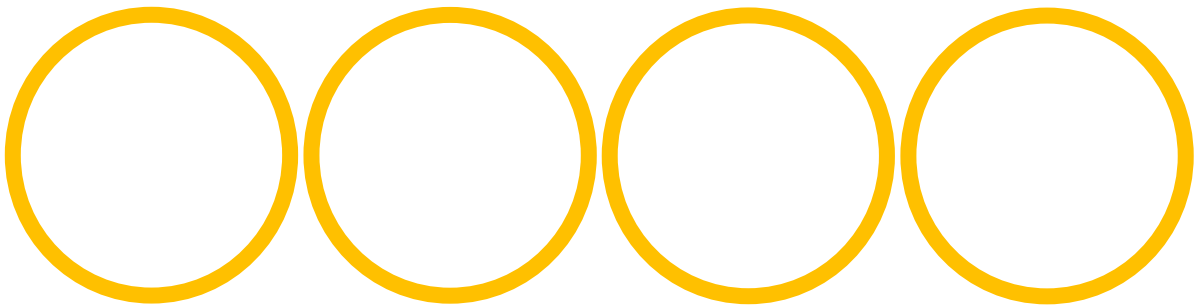
For example,  **$4 \times 3$**  can be read as having **4 equal groups of 3**. Thus, we will draw 4 containers that will have 3 items inside each of the containers.

Then, we can count how many items there are altogether to determine the product.

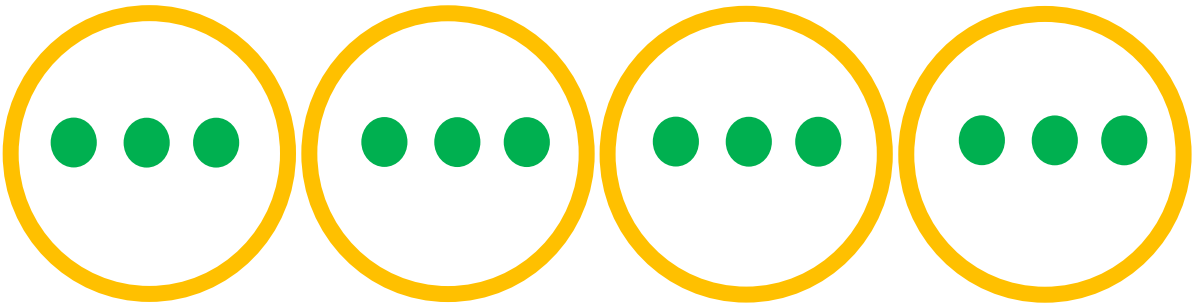
For example:

$$\begin{array}{ccc} 4 & \times & 3 \\ \text{Number of groups} & & \text{Number of items} \\ \text{to make} & & \text{in each group} \\ \hline & & 4 \text{ equal groups of } 3 \end{array}$$

First, draw 4 circles:



Then, draw 3 dots in each circle:

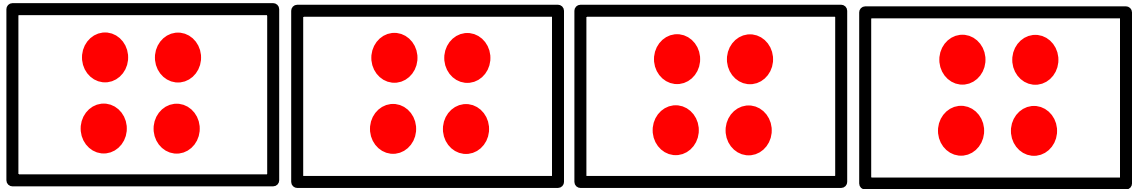


Count all the dots placed in all the groups:

There are **12** dots in all the groups.

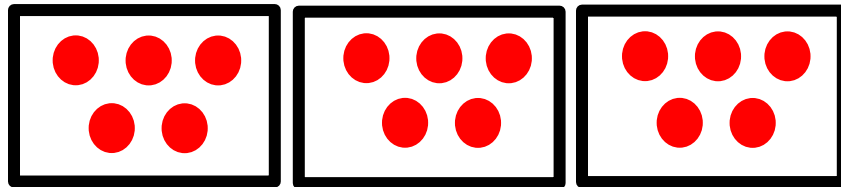
So, the product is **12**.

Draw 4 dots in each group.



What is the product? **16**

Now draw 5 dots in each group.



What is the product? **15**

### Time to Think

1. How would you read  $5 \times 7$  as equal groups of?

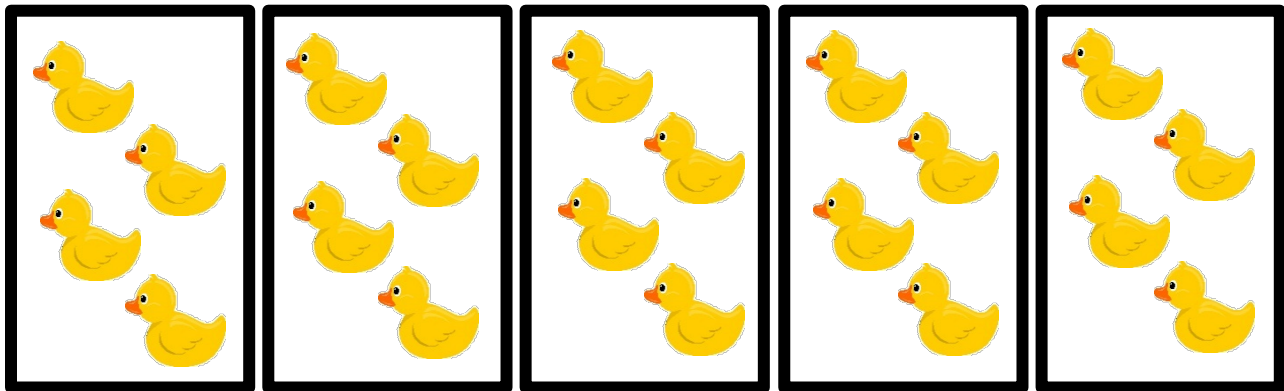
**I would read it as 5 equal groups of 7.**

2. In the expression  $6 \times 7$ , how many groups will you make and how many items will be in each group?

**There will be 6 groups and 7 items in each group.**

# Multiplication as "Equal Groups of" Guided Notes

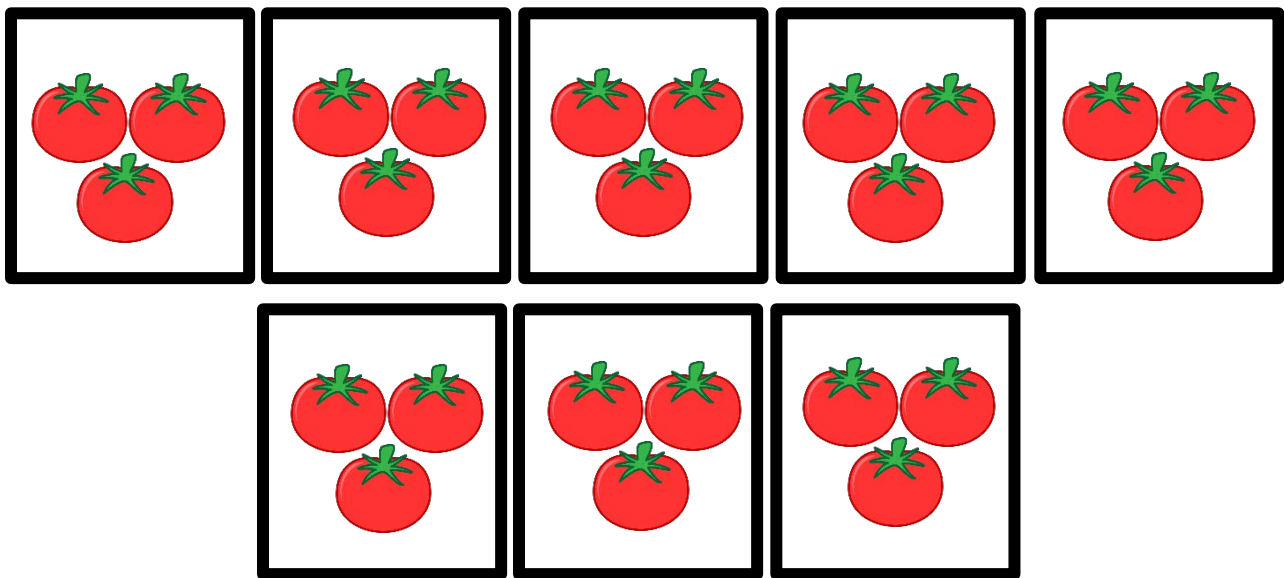
**Math 3**



There are 5 groups of 4 ducks.

What would be the expression for the groups of ducks?

$$\underline{5} \times \underline{4}$$



There are 8 groups of 3 tomatoes.

What would be the expression for the groups of tomatoes?

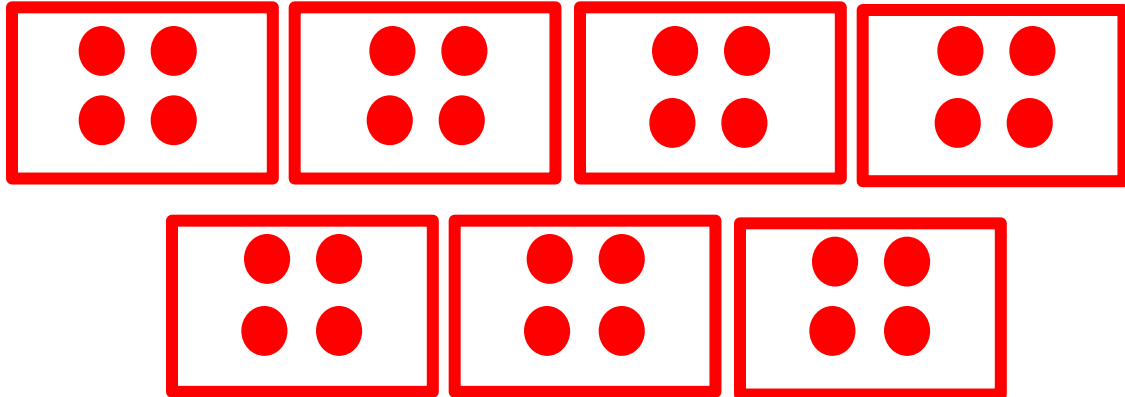
$$\underline{8} \times \underline{3}$$

# Multiplication as “Equal Groups of”

Guided Notes

Math 3

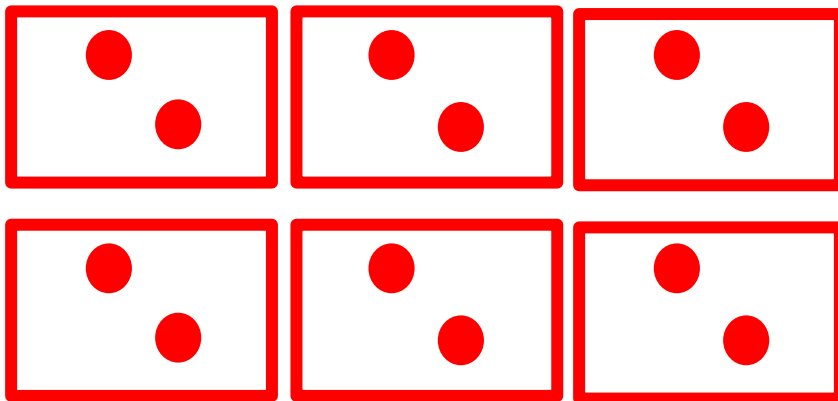
How would you draw  $7 \times 4$ ?



There are 7 groups of 4.

The product is 28.

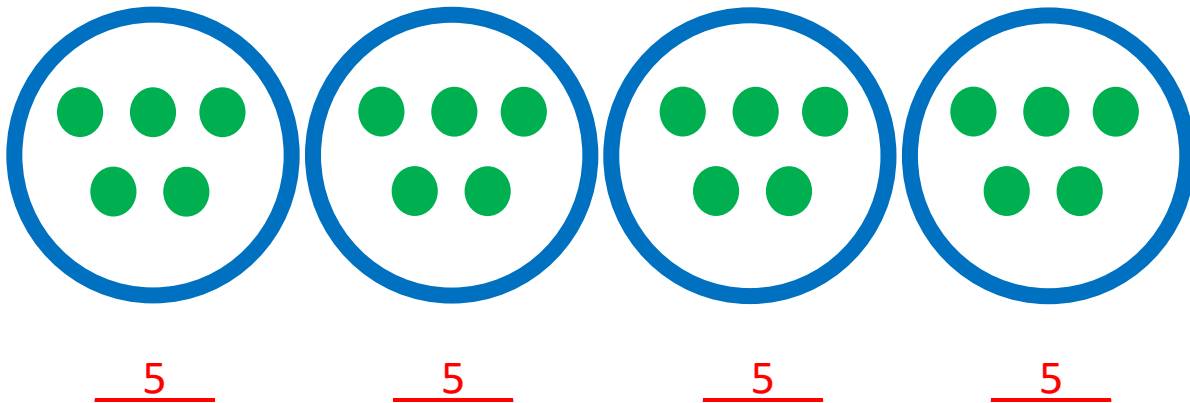
How would you draw  $6 \times 2$ ?



There are 6 groups of 2.

The product is 12.

How many dots are in each group?



How many groups are there? 4

### Time to Think

How many times is the number repeated? What kind of addition will happen if we add all these numbers? Write a sentence.

The number 5 is repeated 4 times. Adding these numbers is a kind of repeated addition.

What is the answer using addition and the answer using multiplication as equal groups of? What do you notice about the answers?

Using addition,  $5 + 5 + 5 + 5 = 20$

Using multiplication, 4 groups of 5 is  $4 \times 5 = 20$

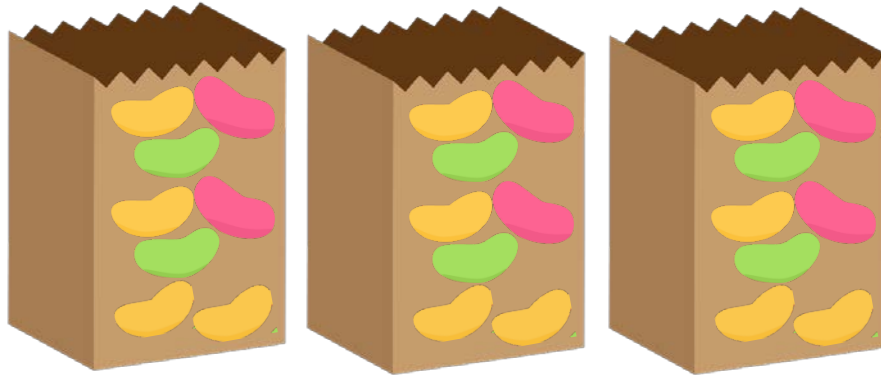
Using repeated addition and the equal groups strategy will produce the same answer.

The number of groups determine how many times the number of dots will be added repeatedly.

# Multiplication as “Equal Groups of” Guided Notes **Math 3**

Katy has 3 paper bags. She put 8 jelly beans in each bag. How many jelly beans does she have?

Draw 3 bags of 8 jelly beans.



Katy has 24 jelly beans.

Troy has 4 cups. He put 2 pebbles in each cup. How many pebbles did he put in all cups?

Draw 4 cups of 2 pebbles.

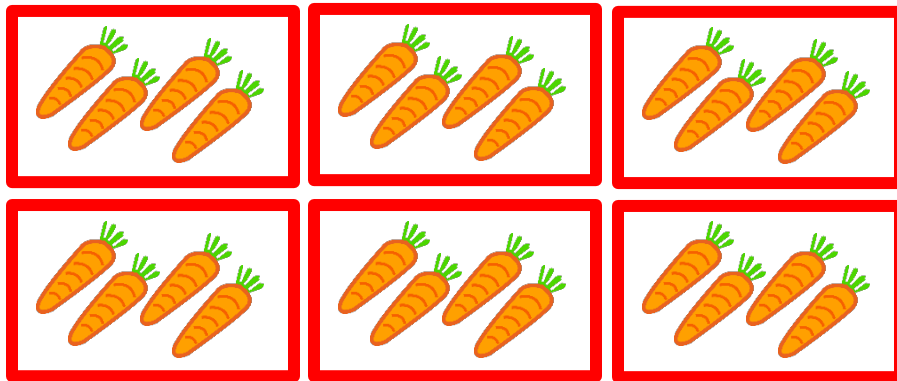


Troy put 8 pebbles in all cups.

**Time to Think**

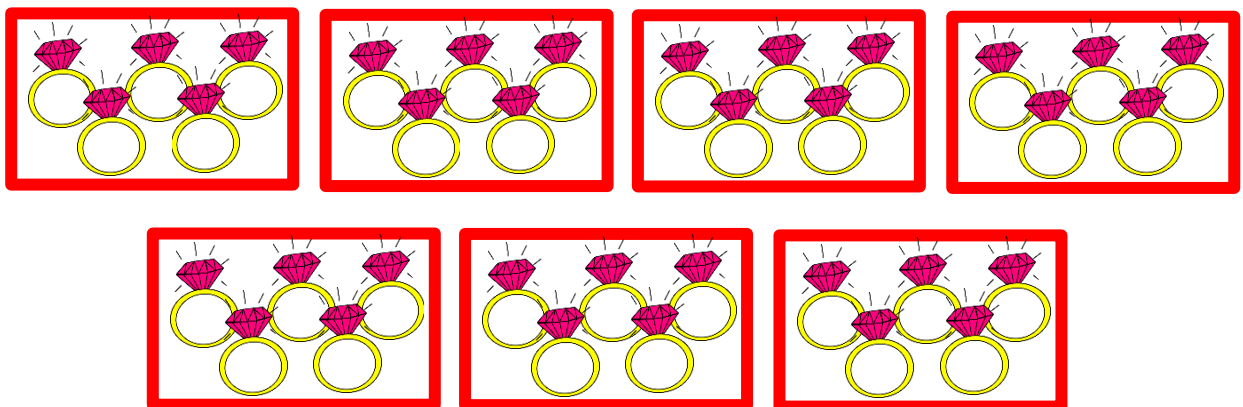
Using what we learned about the equal groups strategy, answer these word problems:

1. Harry has 6 bags that have 4 carrots each. How many carrots does he have?



6 groups of 4 mean  $6 \times 4$ . The product is **24 carrots**.

2. Steff wants to put 5 rings each in 7 containers. How many rings are there altogether?



7 groups of 5 mean  $7 \times 5$ . The product is **35 rings**.