The Meaning of Factors Guided Notes   **Math 3**

What is a factor?

Factors are numbers multiplied by each other in order to get a product. In the equal groups strategy, these numbers tell us **the size of a group** and **the number of groups there are** in a multiplication situation. Likewise, in an array model, these numbers tell us **how many rows and columns** there are in an array.

That means that **factors are the multiplicand and the multiplier in a multiplication equation**.

We can read a multiplication equation **A x B = C** as **A being the multiplicand, B being the multiplier, and C being the product. A and B are called the factors of C.**

For example, **3 x 4 = 12.**
3 can be identified as the multiplicand.
4 can be identified as the multiplier.
12 can be identified as the product.
However, 3 and 4 are not the only factors of 12.

The Meaning of Factors Guided Notes   **Math 3**

To find all factors of 12, we can simply identify what pairs of numbers have a product of 12.

Start with **1**. What do you multiply with **1** to get 12?
1 x **12** = 12. Therefore, our first pair is **1** and **12**

Next is **2**. What do you multiply with **2** to get 12?
2 x **6** = 12. Therefore, our second pair is **2** and **6**

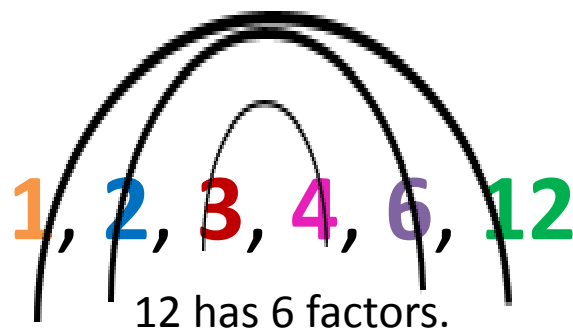Next is **3**. What do you multiply with **3** to get 12?
3 x **4** = 12. Therefore, our third pair is **3** and **4**

You will know when to stop once you encounter a repeat of pairs like:
Next is **4**. What do you multiply with **4** to get 12?
4 x **3** = 12. Therefore, our third pair repeated which is **4** and **3**

Once you got all the factors, list them all together.

1, 2, 3, 4, 6, 12
12 has 6 factors.
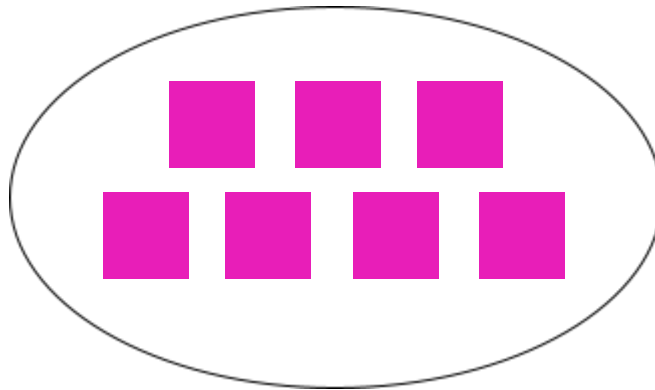
The Meaning of Factors Guided Notes   **Math 3**

There is _____ group of 7 squares.

_____ x 7 = _____

The array is made up of _____ rows and 1 column.

_____ x 1 = _____

Time to think

1. What do you notice about the number 1?

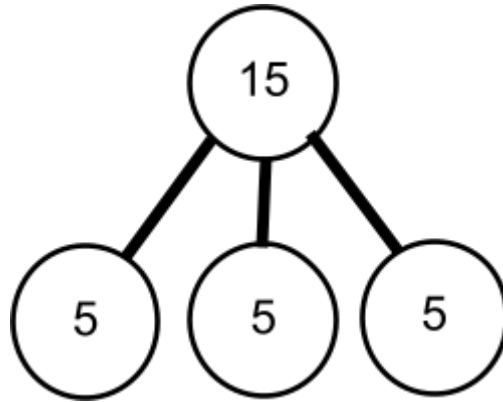2. Can the product itself be considered as its own factor? How?

The Meaning of Factors Guided Notes   **Math 3**

The following models are called number bonds.

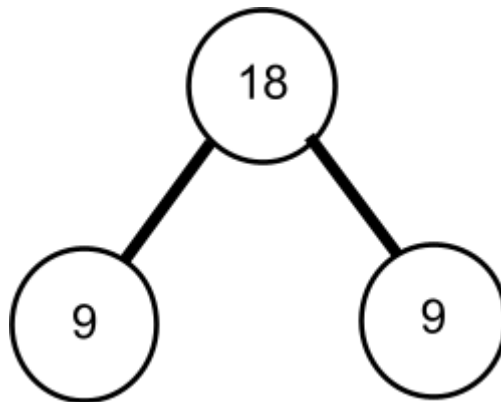Number bonds are models that illustrate a part-part-whole relationship of numbers.

There are _____ groups of _____.

15 is called the _____.

_____ and _____ are the factors.

_____ x _____ = 15

There are _____ groups of _____.

18 is called the _____.

_____ and _____ are the factors.

_____ x _____ = 18

The Meaning of Factors Guided Notes   **Math 3**
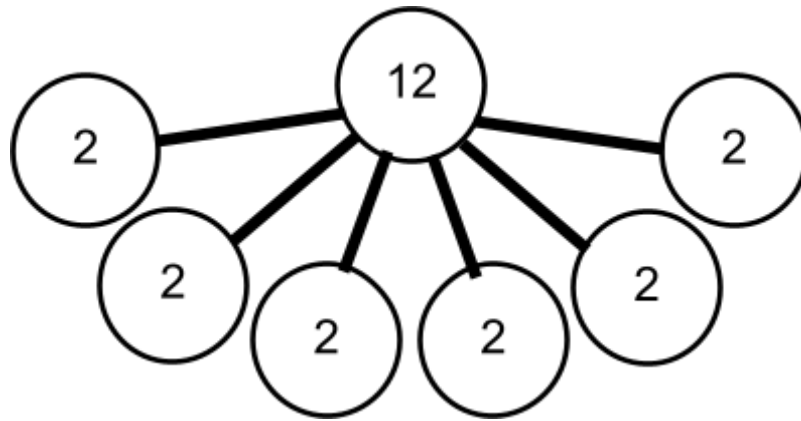
There are _____ groups of _____.

12 is called the _____.

_____ and _____ are the factors.

_____ x _____ = 12

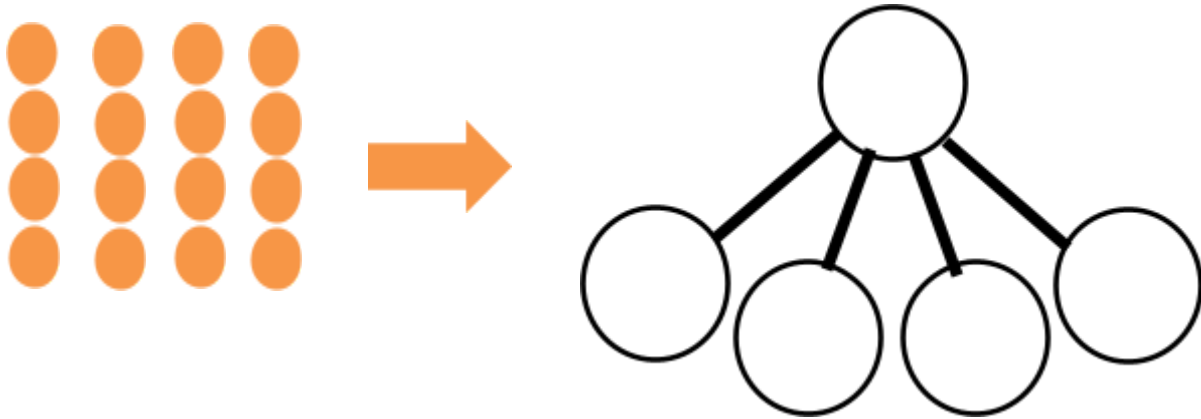We can also use number bonds to represent factors of an array model.
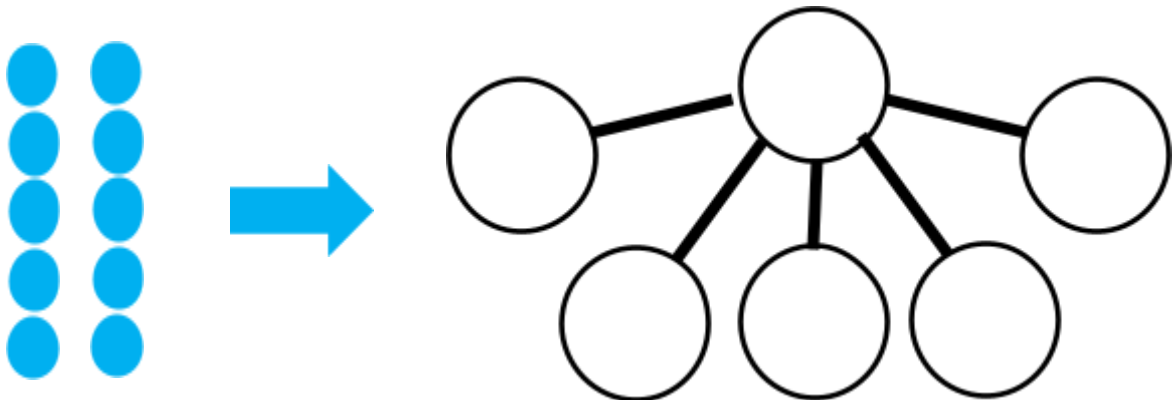
There are _____ rows of _____.

_____ is the product.

_____ and _____ are the factors.

_____ x _____ = _____.

The Meaning of Factors Guided Notes   **Math 3**

There are _____ rows of _____.

_____ is the product.

_____ and _____ are the factors.

_____ x _____ = _____.

Time to think

1. What do you notice about the relationship between an array model and the equal groups strategy?

2. How is a number bond related to the equal groups strategy?

The Meaning of Factors Guided Notes   **Math 3**

List the factors of 8. Draw an arc for each factor pair.

1, ____, ____, ____

8 has _____ factors.

List the factors of 24. Draw an arc for each factor pair.

1, ____, 3, ____, 6, ____, ____, 24

24 has _____ factors.

List the factors of 18. Draw an arc for each factor pair.

1, ____, 3, ____, ____, 18

18 has _____ factors.

The Meaning of Factors Guided Notes   **Math 3**

Time to think

Using the lesson learned about factors. List the factors of the following:

25

_____

32

_____

28

_____