FACTORS

Factors are numbers that are multiplied to make another number. For example, when you multiply 6 by 7, you get 42, so 6 and 7 are both factors of 42.

Factors of a number are often visualized as factor pairs. A number can have more than one factor pair, like 24.
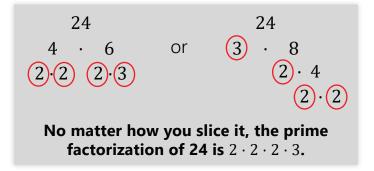
$$1 \cdot 24 = 24$$
$$2 \cdot 12 = 24$$
$$3 \cdot 8 = 24$$
$$4 \cdot 6 = 24$$

1, 2, 3, 4, 6, 8, 12, and 24 are all factors of 24.

Some numbers are **prime numbers** because their only factors are 1 and themselves. Other numbers, like 24, are called composite numbers because they have other factors as well.

Prime Numbers	**Composite Numbers**
2, 3, 5, 7, 11, 13…	4, 6, 8, 9, 10, 12…

Composite numbers are made up of prime numbers multiplied together. We can see all the prime factors by creating a prime factorization, which is unique

No matter how you slice it, the prime factorization of 24 is $2 \cdot 2 \cdot 2 \cdot 3$**.**

Some number share factors, called **common factors**. To determine the common factors between two numbers, we just need to look at the factors for each number and determine which are the same. The **greatest common factor (GCF)** will be the largest of the common factors.

Factors of 24:
1, 2, 3, 4, 6, 12, 24

Factors of 60:
1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60