

G4 Playlist: Working with Factors and Multiples

Aligns with *CCSS.MATH.CONTENT.4.OA.B.4*: Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.

Related Standards

- *CCSS.MATH.CONTENT.3.OA.C.7* :Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

PREVIEW



Objectives

In this module, you will learn and practice the following skills:

- List the factor pairs of a whole number.
- Determine whether a number is prime or composite.
- Determine whether a number is a multiple of a one-digit number.

Let's get started!

Key Terms

- A **factor** is a whole number that evenly divides into another number.
- A **factor pair** is two whole numbers with a particular product.
- A **multiple** is a number that is evenly divisible by a particular number.
- A number is **divisible** by another number if it can be evenly divided with no remainder.

PREVIEW



Working With Factors and Multiples

(4.OA.B.4)

A **factor pair** is a pair of **factors** with a particular **product**. You can list the factor pairs of a whole number.

- If a whole number has only one factor pair (i.e. is divisible only by 1 and itself), then it is a **prime number**.
- If a whole number has more than one factor pair, then it is a **composite number**.

The numbers 0 and 1 are neither composite nor prime.

The product of two factors is a **multiple** of both factors, which means that it is **divisible** by both factors. To determine if a number is a multiple of a one-digit number, list the multiples of the one-digit number in order until the list reaches or passes the number in question. If the number is included in the list, then it is a multiple of the one-digit number.

For some one-digit numbers, there are recognizable patterns in divisibility and multiples:

- If a number is even, it is a multiple of 2.
- If the digits of a number add to a multiple of 3, it is a multiple of 3.
- If a number has a 5 or a 0 in the ones place, it is a multiple of 5.
- If a number is divisible by 2 and 3, it is a multiple of 6.
- If the digits of a number add to 9, it is a multiple of 9.

