

Concept Reference: Integers, Place Value, Primes & Fractions

1. Integers on a number line

Integers are whole numbers and their opposites: ..., -3, -2, -1, 0, 1, 2, 3, ... We use them for temperatures, floors below ground, and money owed. The further **left** on the number line, the **smaller** the value — so -8 is less than -5.

[!A number line from -10 to 10 with negatives in red and positives in green](#)

Worked example. Order -5, 2, -1, 4, 0. Reading left to right on the line: -5, -1, 0, 2, 4.

2. Multiplicative place value

Each place is **10×** the place to its right and **1/10** of the place to its left. This keeps working past the decimal point into tenths and hundredths. In **4.56**, the 5 means 5 tenths (= 50 hundredths). Multiplying by 10 shifts every digit one place to the **left**; dividing by 10 shifts one place **right**.

3. Square, prime and composite numbers

Build the number as a rectangle (array):

- a **square number** makes a square array ($9 = 3 \times 3$);
- a **prime number** makes only a single row or column ($7 = 1 \times 7$) — exactly two factors;
- a **composite number** makes more than one rectangle ($12 = 6 \times 2 = 4 \times 3 = 12 \times 1$).

[!Counter arrays showing 9 as a square, 7 as a prime row, and 12 as composite rectangles](#)

Note: 1 is **neither** prime nor composite — it has only one factor.

4. Fractions and common percentages

On a 0–1 line, $1/4 = 0.25 = 25\%$, $1/2 = 0.5 = 50\%$, $3/4 = 0.75 = 75\%$, and $1/10 = 0.1 = 10\%$. To order fractions with related denominators, rename them with a common denominator (e.g. $1/2 = 2/4$) and compare.

Curriculum: WA6MNAUN1–UN5.