Fractional Units as Parts of a Whole

Fractional Units

A fractional unit is one part of something that is divided equally.

A whole can be any object, shape, or quantity.

When we divide the whole into equal parts, each part is called a fractional unit.

Example:

If a rectangle is divided into 4 equal parts:

Each part = $\dfrac{1}{4}$ of the whole rectangle

Example

If a chocolate bar is divided into 8 equal pieces:

Each piece = $\dfrac{1}{8}$ of the whole chocolate bar

Taking 3 pieces = $\dfrac{3}{8}$

Fraction = $\dfrac{\text{Part}}{\text{Whole}}$

Numerator → Number of parts taken
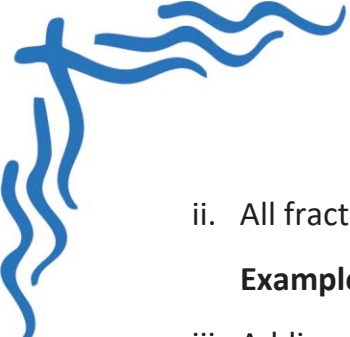
Denominator → Total equal parts of the whole

Common Fractional Units:

- $\dfrac{1}{2}$ → Half of the whole

- $\dfrac{1}{3}$ → One-third of the whole

- $\dfrac{1}{4}$ → One-fourth or quarter

- $\dfrac{3}{5}$ → Three parts out of five equal parts

Properties of Fractional Units as Parts of a Whole

i. A fractional unit is always less than the whole.

Example: $\dfrac{1}{6} < 1$

ii. All fractional units of the same whole must be equal in size.

   Example: Unequal parts are not fractions

iii. Adding all equal parts together gives the whole.

   Example: $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{3}{3} = 1$

iv. The larger the denominator, the smaller the parts.

   Example: $\frac{1}{6} < \frac{1}{4} < \frac{1}{2}$

v. Fractional units are useful for measuring, sharing, and dividing objects or quantities equally.