



Whole number and decimals

Key Concepts:

- A whole number is a number without fractions or decimals.

Example: 0, 1, 2, 3, ...

- A decimal number has a whole number part and a fractional part separated by a decimal point.

Example: 4.5, 0.75, 12.03

- Decimal numbers are another way to represent fractions, especially with denominators like 10, 100, 1000, etc.

Converting Whole Numbers to Decimals

Any whole number can be written as a decimal by adding .0 at the end.

Example:

$$5 = 5.0,$$

$$12 = 12.0$$

Place Value in Decimals

Place Value (Right of Decimal)	Name	Example in 4.237
1st digit	Tenths	2 (0.2)
2nd digit	Hundredths	3 (0.03)
3rd digit	Thousandths	7 (0.007)

Example 1:

Write the decimal form of: $3 + \frac{4}{10}$

Solution:

$$\frac{4}{10} = 0.4$$

$$\text{So, } 3 + 0.4 = 3.4$$

Example 2:

Convert $\frac{7}{100}$ into decimal.

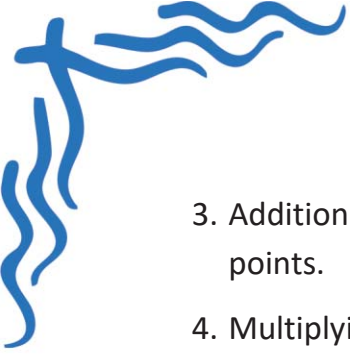
Solution:

$$7 \div 100 = 0.07$$

Properties of Whole Numbers and Decimals:

1. Whole numbers are a subset of decimal numbers (they can be written as 3.0, 4.0, etc.).

2. Decimals are based on powers of 10: $\frac{1}{10} = 0.1$, $\frac{1}{100} = 0.01$, $\frac{1}{1000} = 0.001$



3. Addition and subtraction of decimals follow place value rules—line up decimal points.
4. Multiplying a decimal by 10, 100, 1000 shifts the decimal to the right.

Example: $3.5 \times 10 = 35$

5. Dividing a decimal by 10, 100, 1000 shifts the decimal to the left.

Example: $3.5 \div 10 = 0.35$