CBSE Class 6 Maths Notes Chapter 8: CBSE Class 6 Maths Notes Chapter 8 Decimals introduces students to the concept of decimals and their representation. It explains how to write numbers in decimal form, focusing on tenths, hundredths, and thousandths.

The chapter covers the place value system for decimals and how to convert fractions into decimals. Students learn to compare, add, subtract, and represent decimals on a number line. Additionally, the chapter includes practical examples, like using decimals in money, length, and weight. This chapter forms the foundation for understanding more complex decimal operations in higher classes.

CBSE Class 6 Maths Notes Chapter 8 Overview

CBSE Class 6 Maths Notes Chapter 8 Decimals plays a crucial role in developing students' understanding of decimal numbers, which are widely used in daily life. This chapter introduces the place value system for decimal numbers and explains how to read, write, and compare them. By learning the basics of tenths, hundredths, and thousandths, students become familiar with converting fractions to decimals and vice versa.

The chapter also covers the addition and subtraction of decimal numbers, essential for real-life applications like money, measurements, and distances. Representing decimals on a number line further strengthens the students' grasp of the concept. Understanding decimals lays the groundwork for more complex mathematical topics like percentages, ratio, and algebra in higher classes. This chapter ensures that students can use decimals confidently in various practical and academic scenarios.

CBSE Class 6 Maths Notes Chapter 8 Decimals

Below is the CBSE Class 6 Maths Notes Chapter 8 Decimals -

Decimal numbers are those that are used to represent numbers lower than one unit. In a decimal number, the period or the decimal point is important. In a decimal number, this period distinguishes between the fractional and whole number portions. The value of a digit according to its position in a number is known as its place value.

Decimals Examples

Using the decimal number 0.5694 as an example, we can observe the various place values of each digit:

- The value of the digit at the first place after the decimal point is tenths place value. Tenths can be calculated as 1 unit divided in 10 equal parts i.e 0.1. Therefore, considering this there are 5 tenths in the number 0.5694.
- The value of the digit at the second place after the decimal point is hundredths place value. The number in that place tells you how many hundredths are there. Hundredths can be calculated as 1 unit divided in100 equal parts i.e 0.01. Therefore, considering this there are 6 hundredths in the number 0.5694
- The value of the digit at the third place after the decimal point is thousandths place value. The number in that place tells you how many thousandths are present. Thousandths can be calculated as 1 unit divided in1000 equal parts i.e 0.001. Therefore, considering this there are 9 thousandths in the number 0.5694
- Ten-thousandths
- The value of the digit at the fourth place after the decimal point is ten-thousandths place value. The number in that place tells you how many ten-thousandths are present. Ten-thousandths can be calculated as 1 unit divided into 10000 equal parts i.e 0.0001. Therefore, considering this there are 4 thousandths in the number 0.5694

Introduction to Decimals

There are numerous uses for decimals in daily life.
For instance, when expressing weight, length, and units of currency.
For instance, the book costs Rs. 34.5.

Representing Decimals on a Number Line

Example: Represent 1.3 on the number line.

- 1.3 is more than 1 but less than 2.
- Divide each unit length into 10 equal parts. From 1, take 3 parts to the right and we will get 1.3.

Inter-Conversion of Fractions and Decimals

Fractions as decimals

- 12/5 = 24/10 = (20+4) / 10 = 20/10 + 4/10 = 2+0.4 = 2.4

Decimals as fractions

- 21.2 = 21 + (2/10) = (210/10) + (2/10) = (212/10) = (106/5)

Recurring and Terminating Decimals

A decimal number with a finite number of digits after the decimal is called a terminating decimal.
As an example, 0.35
When a decimal representation becomes periodic or when the same digit sequence repeats endlessly, it is said to be recurrent.
As an example, 31.213333

Decimal 1 vs. Decimal 2

Comparing Decimals

The whole part and decimal parts of any two decimal integers can be compared.
The tenth part can be compared if the entire portion is equal, and so on.

  - **Comparison when whole parts equal**
    Compare 22.3 and 22.5
    Whole parts are equal. Hence we compare tenths part.
    22.3=22 + 3/10
    22.5 = 22 + 5/10
    3/10<5/10
    ∴ 22.3 < 22.5.
- **Comparison whole parts are unequal**

  Compare 1 and 0.97

  $1 = 1 + \frac{0}{10} + \frac{0}{100}$

  $0.97 = 0 + \frac{9}{10} + \frac{7}{100}$

  Whole part of 1 is greater than that of 0.97.

  $\therefore 1 > 0.97$

Let's Give Names to Numbers

Tenths and Hundredths

- 191.8 = 191 + (8/10)
  ⇒ 8 occupies the tenths position.
- Move the tenths place to the right by one unit, the place value decreases further to 1/100th (hundredth) place.

- 191.86 = 191 + 8/10 + 6/100
  ⇒ 6 occupies the hundredths place

Place values

- Place value gives a value of the number depending on its location.
- Place value table of 5.2 is as shown below.

	$Tens(10)$	$Ones(1)$	$Tenths\left(\frac{1}{10}\right)$
5.2	0	5	2

Addition of Decimals

Addition of 1.29 and 0.34

$Ones$	$Tenths$	$Hundredths$
1	2	9
0	3	4
1	6	3

Thus, 1.29 + 0.34 = 1.63

Subtraction of Decimals

Subtraction of 5.25 from 8.28

$Ones$	$Tenths$	$Hundredths$
8	2	8
-5	2	5
3	0	3

Thus, 8.28 – 5.25 = 3.03

Multiplication of Decimals

Multiplication of 2.8 and 7

- 2.8 × 7 (There is only one digit to the right of the decimal point in 2.8)
- 28 × 7 (Ignoring the decimals)
- 28 × 7 = 196
- Now bring the decimal back after one digit from left and thus answer is 19.6

Division of Decimals

Divide 3.4 by 2

- 3.4/2 = Quotient
- Ignore the decimal and divide the numerator by the denominator. Here, quotient = 34/2 = 17
- Since there is only one digit to the right of the decimal, put the decimal after one digit from left in the quotient. Therefore, quotient becomes 1.7

Points on How to Use the Points

Now, let's learn point of shift trick -

Point Shift Trick

Division: Point is shifted to the left by the number of zeroes in the denominator.

- 150/100=1.50 (Shifting decimal by 2 points to the left)
- 1.5/1000=0.0015 (Shifting decimal by 3 points to the left)

Decimals in Length Measurement

- 1m = 100cm
- 1cm = 1/100m = 0.01m (Move decimal to left by 2 units in the numerator as there are two zeroes in the denominator)
- 150cm = 150/100m = 1.5m

Decimals in Weight Measurement

- 1 kg = 1000 g
- 1 g = 1/1000 kg
- 298 g = 298/1000 kg = 0.298 kg (Move the decimal to the left by 3 places in the numerator as there are 3 zeroes in the denominator)

Benefits of CBSE Class 6 Maths Notes Chapter 8

Here are the key benefits of CBSE Class 6 Maths Notes for Chapter 8, "Decimals":

Clear Understanding of Decimals: The notes simplify the concept of decimals, helping students grasp the idea of tenths, hundredths, and thousandths.

Stronger Foundation for Higher Classes: Understanding decimals is crucial for future topics like percentages, ratios, and algebra, making the notes an essential tool for academic progression.

Improves Problem-Solving Skills: The notes provide examples and exercises that improve problem-solving abilities with decimal numbers, enhancing overall mathematical competence.

Real-Life Applications: By learning to handle decimals, students gain practical knowledge for everyday tasks like dealing with money, measuring lengths, and weights.

Time-Saving for Revisions: Well-structured notes allow quick and efficient revision before tests and exams, ensuring that students can review important concepts easily.