CBSE Class 6 Maths Notes Chapter 2: CBSE Class 6 Maths Notes Chapter 2 Whole Numbers introduces students to the concept of whole numbers. Whole numbers include all natural numbers (1, 2, 3, etc.) along with zero. The chapter covers topics such as the number line, where whole numbers can be represented and basic arithmetic operations like addition and subtraction are performed.

It also explains the properties of whole numbers, such as the commutative, associative, and distributive properties. The chapter emphasizes the importance of zero and one in operations and introduces students to the concept of predecessor and successor.

CBSE Class 6 Maths Notes Chapter 2 Overview

CBSE Class 6 Maths Notes Chapter 2 Whole Numbers introduces students to the concept of whole numbers, which include all natural numbers and zero. The chapter begins by distinguishing between natural numbers and whole numbers, emphasizing that the set of whole numbers starts from 0, whereas natural numbers start from 1.

Key properties of whole numbers are discussed, such as closure, commutativity, and associativity under addition and multiplication. The chapter also covers the role of zero and one in addition and multiplication. It highlights the importance of the number line to represent whole numbers visually and explains how to perform addition and subtraction on the number line. Concepts of predecessor and successor for whole numbers are introduced as well.

CBSE Class 6 Maths Notes Chapter 2 Whole Numbers explains the distributive property of multiplication over addition and subtraction. These concepts lay the foundation for more advanced topics in arithmetic, helping students to understand basic operations and properties involving whole numbers.

CBSE Class 6 Maths Notes Chapter 2 Whole Numbers

Below we have provided CBSE Class 6 Maths Notes Chapter 2 Whole Numbers -

The natural numbers from 1 to 10 have been taught to us. The set of natural numbers, including zero, are called whole numbers. The smallest whole number is zero. There are whole numbers: 0, 1, 2, 3,... Whole numbers are all-natural numbers, although not all whole numbers are natural numbers.

Properties of Whole Numbers

Addition and multiplication of any 2 whole numbers give a whole number.

Subtraction and division of any 2 whole numbers may or may not give a whole number.

What Is a Number line?

An image of a graduated straight, horizontal line with numbers printed on it is called a number line. A number is higher when it is written on the right side of the number line and less when it is written on the left. Let's examine a few examples of solved challenges.

Find 12 × 35 using distributivity.

12 × 35 = 12 × (30 + 5)

= 12 × 30 +12 × 5

= 360 + 60 = 420.

Calculate – (2 + 3) + 4 = ? = 5+ 4 = 9.

Evolution of Numbers

Natural Numbers

- Numbers that are used for counting and ordering are called natural numbers.
- 1,2,3,4,5,6… are natural numbers

Whole Numbers

- Natural numbers, along with zero, form the collection of whole numbers.
- **0**,1,2,3,4,5… are called whole numbers.

Predecessors and Successors

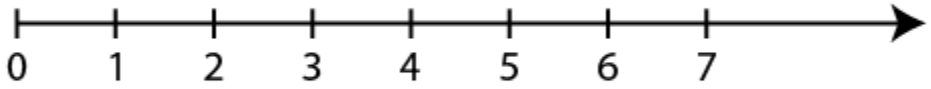
Predecessor and Successor

Any number that comes after it when one is added is called its successor.
Any number's predecessor is its preceding number, which is found by deducting 1.
For instance, the numbers 12 – 1 and 12 + 1, or 11 and 13, are the antecedent and successor of the number 12.

Where Do Whole Numbers Live?

Number Line

It is the line that goes on forever and contains every whole number.
Any two consecutive whole numbers on the line have the same distance between them starting at zero.

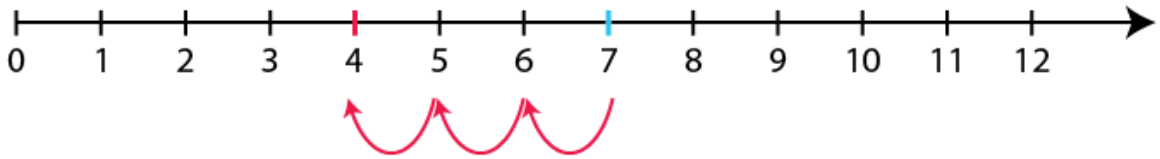


Describing Number Line

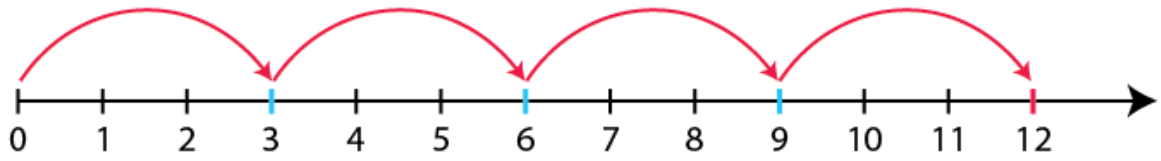
Operations on a Number Line

Numerical line addition. Take the combination of 1 and 5 as an example (1 + 5 = 6). Find 1 on the number line first. Next, five locations to the right will result in six.

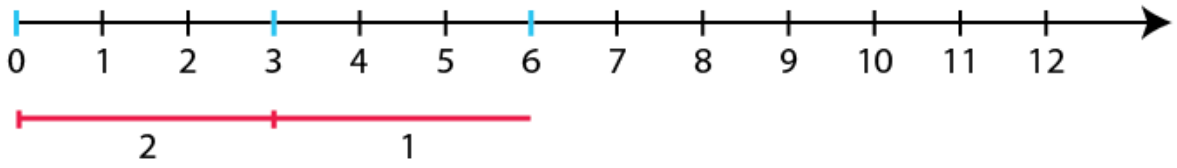
Taking a number line subtraction. Take the subtraction of 3 from 7 as an example (7 – 3 = 4). Find 7 on the number line first. Next, take three steps to the left to get four.



addition using a number line. Take the product of 3 and 4 (3 × 4 equals 12), for instance. Start at 0 and move four times, three spaces to the right.



dividing a numerical line. As an instance, 6 ÷ 3 equals 2. Subtract 3 from 6 a number of times until 0 is attained. The quotient is obtained by subtracting 3 from the number of times.



Properties of Operators: Commutative Associative and Distributive

Division by Zero

Division of any whole number by 0 is **not** defined.

Mathematical operations are simplified due to certain properties that every number follows. They are:

Commutative Property

For whole numbers, addition and multiplication are commutative, meaning that they can be added or multiplied in any sequence.

For e.g: 2 + 3 = 5 = 3 + 3 × 4 = 12 = 4 × 3

Associative Property

Associativity of addition and multiplication

For eg: (5 +6) + 4 = 15 = 5 + (6 + 4)

(2 × 3) × 4 = 24 =2 × (3 × 4)

Distributive Property

With distributivity property, 4 × (5 + 3) can be written as (4 × 5) + (4 × 3)

Here, 4 × (5 + 3) = 4 × 13 = 52

Also, (4 × 5) + (4 × 3) = 20 + 32 = 52

There are integers that, when used in mathematical operations such as addition and multiplication, don't modify the operation's value. We refer to these numbers as identities.

Additive Identity

Additive identity gives the same whole number when added to another whole number.

Zero is the additive identity as a + 0 = a, (a is any whole number).

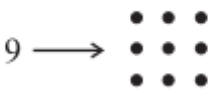
Multiplicative Identity

When one whole number is multiplied by another, multiplicative identity returns the same whole number.

Since a × 1 = a, 1 is the multiplicative identity (where a can be any whole number).

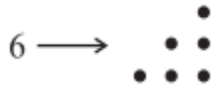
Let’s Play With Whole Numbers

Patterns

- Every number can be arranged as a line.
    - E.g : 5 = •••••
- Some whole numbers can be expressed as squares.
    - E.g : 

- Some whole numbers can be expressed as rectangles.
    - E.g : 6 can be shown as 3 × 2

- Some numbers can also be arranged as triangles.



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Numbers between Square Numbers

There are 2n non-square integers in between every 2 consecutive square numbers. There exist numbers that are not squares between n^2 and $(n + 1)^2$. This is a whole number.
For instance, there are 10, 11, 12, 13, 14, and 15, which is $6 = 2 \times 3$ numbers, between 9 $(3)^2$ and 16 $(4)^2$.

Adding Odd Numbers

- Sum of the first n natural odd numbers gives n^2, which is a perfect square.
- For example : Sum of first 5 natural odd numbers $\Rightarrow 1 + 3 + 5 + 7 + 9 = 25 = 5^2$

Properties of Operators: Closure Properties

Closure Property

Whole numbers are closed under addition and also under multiplication.

3	+	1	=	4, a whole number
5	+	3	=	8, a whole number
4	×	4	=	16, a whole number
9	×	2	=	18, a whole number

Whole numbers are **not** closed under subtraction and division.

8	–	5	=	3, a whole number
5	–	8	=	-3, not a whole number
12	÷	4	=	3, a whole number
9	÷	2	=	9/2, not a whole number

Benefits of CBSE Class 6 Maths Notes Chapter 2 Whole Numbers

The benefits of studying CBSE Class 6 Maths Chapter 2 "Whole Numbers" notes include:

Clear Concept Understanding: The notes simplify complex concepts like whole numbers, number line operations, and properties of operations, helping students grasp the basics easily.

Strong Mathematical Foundation: By focusing on properties like closure, commutativity, and associativity, students build a solid foundation for more advanced mathematical topics.

Improves Calculation Skills: Understanding properties such as the role of zero, one, and the distributive property enhances students' ability to solve arithmetic problems efficiently.

Visual Learning through Number Line: The use of a number line in the notes aids visual learners in understanding addition and subtraction more effectively.

Easy Revision: Well-organized notes provide a quick reference for revision, ensuring students can review key points before exams.

Boosts Confidence: Mastering basic operations and properties of whole numbers builds students' confidence in handling more complex math problems later on.