

**CBSE Class 6 Maths Notes Chapter 3:** CBSE Class 6 Maths Notes Chapter 3 Playing with Numbers, covers the fundamental ideas of factors and multiples. It presents divisibility laws for numbers from 2 to 10 as well as prime and composite numbers. The chapter explains to students how to find the least common multiple (LCM) and highest common factor (HCF) of a given integer.

The idea of prime factorisation is also covered. The tasks provide a solid basis for algebra and arithmetic in upper grades by encouraging logical thinking through puzzles on number patterns, odd and even numbers, and factorisation techniques.

## **CBSE Class 6 Maths Notes Chapter 3 Overview**

Factors and multiples are among the key ideas in numbers that are introduced to pupils in Chapter 3 of CBSE Class 6 Maths, "Playing with Numbers." It starts by defining prime and composite numbers and outlining how to distinguish between them. Divisibility rules for integers between 2 and 10 are taught to students, which helps them solve issues more quickly.

Along with covering odd and even integers, common factors, and common multiples, this chapter also calculates the least common multiple (LCM) and highest common factor (HCF). Another important subject is prime factorisation, which teaches pupils how to express integers as products of prime factors. Students gain problem-solving abilities, the ability to recognise number patterns and apply logical thinking in arithmetic, and a solid foundation for mathematics by working through interesting tasks.

## **CBSE Class 6 Maths Notes Chapter 3 Playing With Numbers**

Below we have provided CBSE Class 6 Maths Notes Chapter 3 PDF -

An arithmetical value represented by a word, symbol, or figure is called a number. In the generalised form, these numbers can be written in one, two, or three digits.

### **Types of Numbers**

A number system is a system of writing for expressing numbers. According to the number system, the different types of a number includes:

- Prime numbers
- Even numbers
- Odd numbers

- Whole numbers
- Natural numbers
- Composite numbers

### **Write all the factors of 65**

65 is a composite number.

$$65 = 1 \times 65$$

$$5 \times 13 = 65$$

Factors of 65: 1, 5, 13, 65.

### **Find the common factors of 850 and 680**

The common factors of 850 and 680 are 2, 5 and 17.

## **Facts about Factors and Multiples**

### **Factors**

Factors are numbers that divide another number exactly, without leaving a remainder. In other words, if a number  $a$  divides another number  $b$  perfectly (without remainder), then  $a$  is a factor of  $b$ .

Example: 1, 2, 3, and 6 are the factors of 6.

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### **Properties of Factors**

**Properties of factors** of a number:

- 1 is a factor of every number.
- Every number is a factor of itself.
- Every factor of a number is an exact divisor of that number.
- Every factor is less than or equal to the given number.
- Number of factors of a given number are finite.

### **Perfect Numbers**

A number that equals the total of its appropriate divisors—that is, factors other than itself—is called a perfect number.

Example: Factors of 28 are 1, 2, 4, 7, 14 and 28.

$$\text{Here, } 1 + 2 + 4 + 7 + 14 + 28 = 56 = 2 \times 28$$

Therefore, the sum of factors of 28 is equal to twice the number 28.

## **Multiples**

The numbers we obtain when we multiply a number by any integer are called multiples of that number.

Example: Multiples of 3 are 6, 9, 12, 15, 18 etc.

## **Properties of Multiples**

**Properties of multiples** of a number:

A number is bigger than or equal to every multiple of that number.

There are an endless amount of multiples of any given number.

All numbers are multiples of one another.

## **Ones with the One and the Others**

### **Prime Numbers**

Prime numbers are any numbers other than 1 whose only factors are 1 and the number itself.

Example: 2, 3, 5, 7 etc.

### **Composite Numbers**

Composite numbers are those that consist of more than two elements.

Example: 4, 6, 8 etc.

## **Divisible by 2 or 5 or Both**

### **Divisibility Tests**

By looking at the integer's digits, a divisibility rule can tell you if it can be divided by a fixed divisor without the need for division.

For the numbers 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11, we have divisibility rules.

### **Divisibility Tests for 2**

If one's digit of a number is 0,2,4,6 or 8, then the number is divisible by 2.

Example: 12, 34, 56 and 78.

### **Divisibility Tests for 4**

A number with 3 or more digits is divisible by 4 if the number formed by its last two digits (i.e. ones and tens) is divisible by 4.

Example: 1396 is divisible by 4 since its last two digits, i.e., 36 is divisible by 4.

### **Divisibility Tests for 3**

A number is divisible by 3, if the sum of its digits is divisible by 3.

Example: Take 27.

Sum of its digits =  $2+7=9$ , which is divisible by 3.

Therefore, 27 is divisible by 3.

### **Divisibility Tests for 5**

If the one's digit of a number is either 5 or 0, then it is divisible by 5.

Example: 75, 90, 100 and 125.

### **Divisibility Tests for 8**

A number with 4 or more digits is divisible by 8, if the number formed by its last three digits is divisible by 8.

Example: 73512 is divisible by 8 since its last three digits, i.e., 512 is divisible by 8.

### **Divisibility Tests for 6**

If a number is divisible by 2 and 3 both, then it is divisible by 6 also.

Example: 120 is divisible by 2 and 3. Therefore, it is divisible by 6 also.

### **Divisibility Tests for 7**

Double the last digit and subtract it from the remaining leading cut number. If result is divisible by 7, then the original number is divisible by 7. Example: 826 is divisible by 7 since,  $82 - (6 \times 2) = 82 - 12 = 70$ , which is divisible by 7.

### **Divisibility Tests for 9**

A number is divisible by 9 if sum of its digits is divisible by 9.

Example: Consider 126.

Sum of its digits =  $1+2+6=9$ , which is divisible by 9.

Therefore, 126 is divisible by 9.

### **Divisibility Tests for 11**

Find difference between sum of digits at odd places (from the right) and sum of digits at even places (from the right) of a number. If the difference is either 0 or divisible by 11, then the

number is divisible by 11.

Example: 1234321 is divisible by 11 since,  $(1+3+3+1) - (2+4+2) = 8 - 8 = 0$ , which is divisible by 11.

## Divisibility Tests for 10

If one's digit of a number is 0, then the number is divisible by 10.

Example: 10, 20, 30 and 40.

## Common Factors

The factors of 4 are 1, 2 and 4.

The factors of 18 are 1, 2, 3, 6, 9 and 18.

The numbers 1 and 2 are **common factors** of both 4 and 18.

## Common multiples

Multiples of 3 are 3, 6, 9, 12, 15, 18,....

Multiples of 5 are 5, 10, 15, 20, 25, 30,...

Multiples of 6 are 6, 12, 18, 24, 30, 36,...

Therefore, **common multiples** of 3, 5 and 6 are 30, 60,....

## The Prime Factor

### Prime Factorisation

Prime factorisation is the process of factoring a number expressed as a product of prime numbers.

Example: Prime factorisation of 36 is  $2 \times 2 \times 3 \times 3$ .

# Benefits of CBSE Class 6 Maths Notes Chapter 3

The benefits of studying CBSE Class 6 Maths Notes Chapter 3 Playing With Numbers are numerous:

**Strong Foundation in Arithmetic:** The chapter introduces key concepts like factors, multiples, prime and composite numbers, which are essential for understanding higher-level mathematics.

**Enhances Problem-Solving Skills:** By practicing divisibility rules, students improve their ability to solve problems quickly and accurately.

**Logical Thinking and Reasoning:** The chapter encourages the application of logic through number patterns and relationships, helping develop critical thinking skills.

**Understanding HCF and LCM:** Learning how to find the highest common factor (HCF) and least common multiple (LCM) is important for solving real-life problems, such as simplifying fractions.

**Builds Confidence:** Regular practice of the concepts from this chapter boosts confidence, especially for competitive exams like Olympiads.