

Class 11 Maths Syllabus

Unit 1: Sets and Functions

Familiarising the students about the concepts related to sets, relations and trigonometric functions, this unit of class 11 maths syllabus includes the following chapters and the important topics covered underneath them:

Sets

- Sets and their representations
- Finite and infinite sets
- Universal set
- Venn diagrams
- Complement of set and properties of complement

Relations and Functions

- Cartesian product of sets
- Relation (definition, diagram, domain, and range)
- Function (diagram, domain, and range)
- Polynomial, rational, modulus, signum, logarithmic
- Sum, difference, quotient, and product of functions

Trigonometric Functions

- Angles (positive and negative)
- Signs of trigonometric functions
- Domain and range and graphs of trigonometric functions
- Deducing identities
- Identities related to $\sin 2x$, $\sin 3x$, $\cos 2x$, $\cos 3x$, $\tan 2x$, and $\tan 3x$.

Unit 2: Algebra

The following are the chapters under the second unit of the Class 11 maths syllabus that a student should be aware of:

Chapters	Topics Covered
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Principles of Mathematical Induction	<ol style="list-style-type: none"> 1. Process of proof by induction 2. Principles of mathematical induction and simple applications
Complex Numbers and Quadratic Equations	<ol style="list-style-type: none"> 1. Algebraic properties of complex numbers 2. Argand and polar representation of complex numbers 3. The fundamental theorem of algebra 4. Solving quadratic equations in complex numbers 5. Square roots of complex numbers
Linear Inequalities	<ol style="list-style-type: none"> 1. Algebraic solutions and graphical representations of linear inequalities in one variable 2. Graphical methods and solutions of linear inequalities in two variables
Permutation and Combination	<ol style="list-style-type: none"> 1. Fundamental principles of counting factorial (n!) 2. Formula derivation for npr and ncr 3. Simple applications
Binomial Theorem	<ol style="list-style-type: none"> 1. Statement and proof of the binomial theorem in regard to positive indices. 2. Pascal's triangle 3. Middle and general terms in binomial expansion
Sequences and Series	<ol style="list-style-type: none"> 1. Arithmetic Progression (AP) and Arithmetic Mean (AM) 2. Geometric Progression (GP) and Geometric Mean (GM) 3. The relation between AM and GM 4. Infinite GM and its sum

Unit 3: Coordinate Geometry

[Coordinate Geometry](#)

Being the third unit of the class 11 maths syllabus will impart knowledge on the enlisted topics:

Straight Lines

- The slope of line and angles between 2 lines
- Forms of equations of a line
- General equation of a line

- The distance of a point from the line

Conic Sections

- Sections of a cone: parabola, hyperbola, ellipse
- Properties and equations of a parabola, hyperbola, and ellipse
- Standard equations of a circle

Introduction to Three-Dimensional Geometry

- Coordinate axes and planes in 3D
- Distance between 2 points, section formula
- Coordinates of a point

Unit 4: Calculus

This unit of class 11 maths syllabus introduces the students to the broad concepts related to calculus which includes limits and derivatives. The basic formulae and techniques to solve the problems will also be covered.

- Intuitive idea of limits
- Limits of polynomial, rational, trigonometric, exponential and logarithmic functions
- The derivative of the sum, difference, quotient, and product of functions
- Derivatives of polynomial and trigonometric functions

Unit 5: Mathematical Reasoning

Upskilling the mathematical reasoning skills of the students, this unit of the class 11 maths syllabus includes the following notable topics:

- Connecting words
- Understanding of conditions such as “if and only if”, “and/or”, “implies”, “implies by”, “there exists” and their uses
- Validating the statements involving the connecting words
- Difference between contradiction, contrapositive, and converse

Unit 6: Statistics and Probability

This unit of class 11 maths syllabus makes the students understand the important concepts of statistics and probability through the following chapters which can also come handy when perusing courses like [BSc Statistics](#).

Statistics

- Measures of Dispersion (mean deviation, range, variance and standard deviation of grouped and ungrouped data)
- Frequency distributions analysis

Probability

- Random experiments
- Sample spaces
- Events
- Axiomatic probability
- Probability of an event
- Probability of “not”, “and” and “or” events

Class 11 Maths Syllabus: Deleted Portion

The portions mentioned below have been reduced from the class 11 maths syllabus for the year 2020- 2021:

Chapters	Deleted Topics
Sets	- Difference between sets. - Complement of a set. Properties of Complement
Relations & Functions	- (up to RXRXR) - Sum, Difference, product and quotients of functions
Trigonometric Functions	- General Solutions of trigonometric equations of the type $\sin y = \sin a$, $\cos y = \cos a$ and $\tan y = \tan a$.
Principle of Mathematical Induction	Entire Chapter is Deleted
Complex Numbers and Quadratic Equations	- Polar representation of complex numbers. - Square root of a complex number.
Permutations and Combinations	- Derivation of formulae for nPr and nCr
Binomial Theorem	Entire Chapter is Deleted

Sequence and Series	Formulae for the following special sums $\sum k, \sum k^2, \sum k^3$.
Straight Lines	- Shifting of origin. - Equation of family of lines passing through the point of intersection of two lines.
Conic sections	- A point, a straight line and a pair of intersecting lines as a degenerate case of a conic section.
Mathematical Reasoning	Entire Chapter is Deleted
Statistics	- Analysis of frequency distributions with equal means but different variances.
Probability	- Axiomatic (set theoretic) probability, connections with other theories of earlier classes