

CBSE Syllabus for Class 10 Maths

Time: 3 hrs

Max. Marks: 80

Sl. No.	Unit Name	Marks
I	Number System	6
II	Algebra	20
III	Coordinate Geometry	6
IV	Geometry	15
V	Trigonometry	12
VI	Mensuration	10
VII	Statistics & Probability	11
	TOTAL	80

Unit 1: Number Systems

1. Real Number

Fundamental Theorem of Arithmetic - statements after reviewing work done earlier and after illustrating and motivating through examples. Decimal representation of rational numbers in terms of terminating/non-terminating recurring decimals.

Unit 2: Algebra

1. Polynomials

Zeros of a polynomial. Relationship between zeroes and coefficients of quadratic polynomials only.

2. Pair of Linear Equations in Two Variables

Pair of linear equations in two variables and graphical method of their solution, consistency/inconsistency. Algebraic conditions for a number of solutions. Solution of a pair of linear equations in two variables algebraically - by substitution and by elimination. Simple situational problems. Simple problems on equations are reducible to linear equations.

3. QUADRATIC EQUATIONS

A quadratic equation in standard form is $ax^2 + bx + c = 0$, ($a \neq 0$). Factorization and the quadratic formula are used to solve quadratic equations (only real roots).

The relationship between the discriminant and the nature of the roots. To be included are quadratic equation-based situational situations relating to daily activities.

4. ARITHMETIC PROGRESSIONS

The reason you want to learn about Arithmetic Progression? The n th term and the sum of the first n terms of A.P. are deduced and used to solve difficulties in everyday life.

Unit 3: Coordinate Geometry

1. Coordinate Geometry

Concepts of coordinate geometry and graphs of linear equations are reviewed. The formula for calculating distance. Internal division formula (section formula).

Unit 4: Geometry

1. Triangles

Definitions, examples, and counter examples of similar triangles.

1. (Prove) If a line is drawn parallel to one side of a triangle to intersect the other in distinct points, the other two sides are divided in the same ratio.
2. (Motivate) If a line divides two sides of a triangle in the same ratio, the line is parallel to the third side.
3. (Motivate) If in two triangles, the corresponding angles are equal, their corresponding sides are proportional, and the triangles are similar.

4. (Motivate) If the corresponding sides of two triangles are proportional, their corresponding angles are equal, and the two triangles are similar.
5. (Motivate) If one angle of a triangle is equal to one angle of another triangle and the sides including these angles are proportional, the two triangles are similar.

2. CIRCLES

Tangent to a circle at the point of contact

1. (Prove) The tangent at any point of a circle is perpendicular to the radius through the point of contact.
2. (Prove) The lengths of tangents drawn from an external point to a circle are equal.

Unit 5: Trigonometry

1. Introduction To Trigonometry

Trigonometric ratios of an acute angle of a right-angled triangle. Proof of their existence (well defined). Values of the trigonometric ratios of 30° , 45° and 60° . Relationships between the ratios.

2. Trigonometric Identities

Proof and applications of the identity $\sin^2 A + \cos^2 A = 1$. Only simple identities to be given

3. HEIGHTS AND DISTANCES: Angle of elevation, Angle of Depression.

Simple height and distance problems. There should be no more than two right triangles in a problem. Elevation/depression angles should be no more than 30° , 45° , and 60° .

Unit 6: Mensuration

1. Areas Related To Circles

Motivate the area of a circle, the area of sectors and segments of a circle. Problems based on areas and perimeter/circumference of the above-said plane figures. (In calculating the area of a segment of a circle, problems should be restricted to the central angle of 60° and 90° only.

Plane figures involving triangles, simple quadrilaterals and circles should be taken.)

2. SURFACE AREAS AND VOLUMES

Surface areas and volumes of any two of the following combinations: cubes, cuboids, spheres, hemispheres, and right circular cylinders/cones

Unit 7: Statistics & Probability

1. STATISTICS

Mean, median and mode of grouped data (bimodal situation to be excluded).

2. Probability

The classical definition of probability. Simple problems in finding the probability of an event.

Internal Assessment

(Applicable for both Standard and Basic Mathematics)

Components	Marks
Pen Paper Test and Multiple Assessment (5+5)	10
Portfolio	5
Lab Practical (Lab tasks to be completed from the prescribed books)	5
Total	20

CBSE Class 10 Maths (Standard) Question Paper Design: Overview and Format

Check out the question typology and mark weightage stated in the question paper design below:

Mathematics-Standard QUESTION PAPER DESIGN CLASS – X (2022-23)			
Time: 3 hrs		Max. Marks: 80	
Sl.No	Typology of Questions	Total Marks	Weightage (%)
1	<p>Remembering: Demonstrate recollection of previously studied content by recalling facts, terminology, fundamental ideas, and responses.</p> <p>Understanding: Show that you grasp facts and ideas by organizing, comparing, translating, interpreting, describing, and stating major concepts.</p>	43	54
2	<p>Applying: Solve problems in new settings by applying previously learned information, facts, procedures, and principles in novel ways.</p>	19	24
3	<p>Analysing: Examine and segment information by finding reasons or causes. Make assumptions and look for data to back up generalisations.</p> <p>Evaluating: Using a set of criteria, present and defend beliefs by judging information, the validity of ideas, or the quality of work.</p> <p>Creating: Compile information novelly by integrating parts in a new pattern or suggesting other alternatives.</p>	18	22
	Total	80	100

CBSE Class 10 Maths (Basic) Question Paper Design: Overview and Format

Check out the question typology and mark weightage stated in the question paper design below:

Mathematics-Basic QUESTION PAPER DESIGN CLASS – X (2022-23)			
Time: 3 hrs		Max. Marks: 80	
Sl.No	Typology of Questions	Total Marks	Weightage (%)
1	<p>Remembering: Demonstrate recollection of previously studied content by recalling facts, terminology, fundamental ideas, and responses.</p> <p>Understanding: Show that you grasp facts and ideas by organizing, comparing, translating, interpreting, describing, and stating major concepts.</p>	60	75
2	<p>Applying: Solve problems in new settings by applying previously learned information, facts, procedures, and principles in novel ways.</p>	12	15
3	<p>Analysing: Examine and segment information by finding reasons or causes. Make assumptions and look for data to back up generalisations.</p> <p>Evaluating: Using a set of criteria, present and defend beliefs by judging information, the validity of ideas, or the quality of work.</p>	8	10

	Creating: Compile information novelly by integrating parts in a new pattern or suggesting other alternatives.		
	Total	80	100

CBSE Class 10 Maths Prescribed Books: Recommended Textbooks for Board Exam Preparation

(For both Standard and Basic Mathematics)

Book	Publications
Mathematics - Textbook for class X	NCERT Publication
Guidelines for Mathematics Laboratory in Schools, class X	CBSE Publication
Laboratory Manual - Mathematics, secondary stage	NCERT Publication
Mathematics exemplar problems for class X	NCERT Publication