CLASS 12 MATHEMATICS — LO's Aligned Monthly Split-up Syllabus (April 2026–March 2027) + Portion Boundaries + Exams + Weightage + Question Paper Design + Blueprint
(For CM SoE & Non-CM SoE)
Developed by:- Jharkhand Council Of Educational Research & Training (Curriculum Division)

Month	Teaching Days (Available)	NCERT Chapter Titles	Sub-topics / Portion Boundary	LOs (*LO Mapping - IDs) (NCERT Secondary Stage LO-2017)	Practicals / Activities (Minimum)	Assessment / Exams
Apr 2026	23	MATHS: Chapter 1 Relations and Functions (Complete); MATHS: Chapter 2 Inverse Trigonometric Functions (2.1–2.2)	Chapter 1: 1.1 Introduction; 1.2 Types of Relations; 1.3 Types of Functions; 1.4 Composition of Functions and Invertible Function. Chapter 2: 2.1 Introduction; 2.2 Basic Concepts.	LO1, LO2, LO3	Activity (Math Lab): mapping relations/functions using arrow diagrams & mapping diagrams; Practice: NCERT examples + exercises (Chapter 1).	Project RAIL (April portion): 04-05-2026
May 2026	14	MATHS: Chapter 2 Inverse Trigonometric Functions (Complete); MATHS: Chapter 3 Matrices (3.1–3.4)	Chapter 2: 2.3 Properties of Inverse Trigonometric Functions. Chapter 3: 3.1 Introduction; 3.2 Matrix; 3.3 Types of Matrices; 3.4 Operations on Matrices.	LO14, LO15, LO16	Activity (Math Lab): verification of identities / properties using calculator/graphing; Practice: NCERT examples + exercises (Chapter 2).	Project RAIL (May portion): 15-06-2026
Jun 2026	12	MATHS: Chapter 3 Matrices (3.5–3.7); MATHS: Chapter 4 Determinants (4.1–4.4)	Chapter 3: 3.5 Transpose of a Matrix; 3.6 Symmetric and Skew Symmetric Matrices; 3.7 Invertible Matrices. Chapter 4: 4.1 Introduction; 4.2 Determinant; 4.3 Area of a Triangle; 4.4 Minors and Cofactors.	LO2, LO3, LO4, LO5, LO6	Activity (Math Lab): applications of matrices in solving simple systems; Worksheet practice (Matrices + Determinants basics).	Project RAIL (June portion): 06-07-2026
Jul 2026	23	MATHS: Chapter 4 Determinants (4.5–4.6); MATHS: Chapter 5 Continuity and Differentiability (Complete); MATHS: Chapter 6 Application of Derivatives (6.1–6.2)	Chapter 4: 4.5 Adjoint and Inverse of a Matrix; 4.6 Applications of Determinants and Matrices. Chapter 5: 5.1 Introduction; 5.2 Continuity; 5.3 Differentiability; 5.4 Exponential and Logarithmic Functions; 5.5 Logarithmic Differentiation; 5.6 Derivatives of Functions in Parametric Forms; 5.7 Second Order Derivative. Chapter 6: 6.1 Introduction; 6.2 Rate of Change of Quantities.	LO5, LO6, LO7, LO8, LO9, LO10, LO11	Activity (Math Lab): determinant inverse verification; continuity and differentiability concept drill; rate-of-change graph interpretation; NCERT examples and worksheet practice.	Project RAIL (July portion): 03-08-2026
Aug 2026	22	MATHS: Chapter 6 Application of Derivatives (6.3–6.4); MATHS: Chapter 7 Integrals (7.1–7.6)	Chapter 6: 6.3 Increasing and Decreasing Functions; 6.4 Maxima and Minima. Chapter 7: 7.1 Introduction; 7.2 Integration as an Inverse Process of Differentiation; 7.3 Methods of Integration; 7.4 Integrals of Some Particular Functions; 7.5 Integration by Partial Fractions; 7.6 Integration by Parts.	LO8, LO9, LO10, LO11, LO12, LO13, LO14, LO15, LO16, LO17, LO18	Activity (Math Lab): optimisation / maxima-minima in real-life contexts; standard integrals and methods practice; mixed practice (Ch 1–7) for Half Yearly.	Half Yearly Examination: 07-09-2026 to 12-09-2026 (covers Apr–Aug taught portion)
Sep 2026	14	MATHS: Chapter 7 Integrals (7.7–7.10); MATHS: Chapter 8 Application of Integrals (Complete); MATHS: Chapter 9 Differential Equations (9.1–9.2)	Chapter 7: 7.7 Definite Integral; 7.8 Fundamental Theorem of Calculus; 7.9 Evaluation of Definite Integrals by Substitution; 7.10 Some Properties of Definite Integrals. Chapter 8: 8.1 Introduction; 8.2 Area under Simple Curves. Chapter 9: 9.1 Introduction; 9.2 Basic Concepts.	LO19, LO20, LO21, LO22, LO23, LO24	Activity (Math Lab): definite integral properties; graph-based area problems; formation and basic concepts of differential equations; post-Half-Yearly remedial worksheet.	Project RAIL (September portion): 05-10-2026
Oct 2026	21	MATHS: Chapter 9 Differential Equations (9.3–9.4); MATHS: Chapter 10 Vector Algebra (Complete); MATHS: Chapter 11 Three Dimensional Geometry (Complete)	Chapter 9: 9.3 General and Particular Solutions of a Differential Equation; 9.4 Methods of Solving First Order, First Degree Differential Equations. Chapter 10: 10.1 Introduction; 10.2 Some Basic Concepts; 10.3 Types of Vectors; 10.4 Addition of Vectors; 10.5 Multiplication of a Vector by a Scalar; 10.6 Product of Two Vectors. Chapter 11: 11.1 Introduction; 11.2 Direction Cosines and Direction Ratios of a Line; 11.3 Equation of a Line in Space; 11.4 Angle between Two Lines; 11.5 Shortest Distance between Two Lines.	LO19, LO20, LO21, LO22, LO23, LO24, LO25	Activity (Math Lab): differential-equation solving drills; vector visualisation and operations; 3D line orientation / shortest distance worksheets; board-pattern mixed practice.	Project RAIL (October portion): 02-11-2026

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Nov 2026	16	MATHS: Chapter 12 Linear Programming (Complete); MATHS: Chapter 13 Probability (Complete); Appendix 1: Proofs in Mathematics; Appendix 2: Mathematical Modelling; Full syllabus consolidation	Chapter 12: 12.1 Introduction; 12.2 Linear Programming Problem and its Mathematical Formulation. Chapter 13: 13.1 Introduction; 13.2 Conditional Probability; 13.3 Multiplication Theorem on Probability; 13.4 Independent Events; 13.5 Bayes' Theorem. Appendix 1: A.1.1 Introduction; A.1.2 What is a Proof? Appendix 2: A.2.1 Introduction; A.2.2 Why Mathematical Modelling?; A.2.3 Principles of Mathematical Modelling. Consolidation: full-syllabus worksheet sets and doubt clearance.	LO14, LO15, LO16, LO26, LO27	Activity (Math Lab): graphical solution of LPP; probability experiments and tree diagrams; proof/model-building discussion; portfolio/project file completion and full-syllabus practice.	Syllabus completion target for Class 12: Nov 2026
Dec 2026	15	Full Syllabus Practice + Pre-Board Examination	Full syllabus revision (Ch 1–13) + sample papers + previous year questions (as applicable).	LO1, LO2, LO3, LO14, LO15, LO16, LO17, LO18, LO19, LO20, LO21, LO22, LO23, LO24, LO25, LO26, LO27	Pre-Board oriented practice (full syllabus) + error log + targeted remediation.	Pre-Board + Remedial + Practice: 07-12-2026 to 12-12-2026 (Full syllabus)
Jan 2027	17	Revision + Sample Papers + Previous Year Questions + Pre-Board-II / Mock Test (Full syllabus)	Complete syllabus revision through chapter/unit-wise recap and mixed board-pattern practice; focus on weak areas identified in Pre-Board, answer presentation, time management and concept retention.	LO1, LO2, LO3, LO14, LO15, LO16, LO17, LO18, LO19, LO20, LO21, LO22, LO23, LO24, LO25, LO26, LO27	Weekly timed mock tests + item-wise analysis + doubt clearance + targeted remediation.	Pre-Board-II / Mock Test (Full syllabus): as per Board/school schedule
Feb 2027	18	Board Examination Preparation / Board Examination	Final revision and examination readiness; mixed practice of important terms, diagrams / numericals / source-based / case-based / application questions as applicable to the subject.	LO1, LO2, LO3, LO14, LO15, LO16, LO17, LO18, LO19, LO20, LO21, LO22, LO23, LO24, LO25, LO26, LO27	Rapid revision sheets + oral viva / practical / project support (where relevant) + teacher feedback.	Board Examination (as per Board schedule)
Mar 2027	20	Board Examination (continued, if applicable) / Post-exam Academic Support	Board examination continuation / light post-exam academic engagement, bridge work, reading / enrichment / record completion as applicable.	LO1, LO2, LO3, LO14, LO15, LO16, LO17, LO18, LO19, LO20, LO21, LO22, LO23, LO24, LO25, LO26, LO27	Bridge activities / portfolio / reading enrichment / feedback.	Board Examination / Post-exam school support (as applicable)

LOs (*LO Mapping - IDs) (NCERT Secondary Stage LO-2017)

LO ID	NCERT Learning Outcome
LO1	applies logical reasoning in classifying real numbers, proving their properties and using them in different situations.
LO2	identifies/classifies polynomials among algebraic expressions and factorises them by applying appropriate algebraic identities.
LO3	relates the algebraic and graphical representations of a linear equation in one or two variables and applies the concept to daily life situations.
LO4	identifies similarities and differences among different geometrical shapes.
LO5	derives proofs of mathematical statements particularly related to geometrical concepts, like parallel lines, triangles, quadrilaterals, circles, etc., by applying axiomatic approach and solves problems using them.
LO6	finds areas of all types of triangles by using appropriate formulae and apply them in real life situations.

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LO7	constructs different geometrical shapes like bisectors of line segments, angles and triangles under given conditions and provides reasons for the processes of such constructions.					
LO8	develops strategies to locate points in a Cartesian plane.					
LO9	identifies and classifies the daily life situations in which mean, median and mode can be used.					
LO10	analyses data by representing it in different forms like, tabular form (grouped or ungrouped), bar graph, histogram (with equal and varying width and length), and frequency polygon.					
LO11	calculates empirical probability through experiments and describes its use in words.					
LO12	derives formulae for surface areas and volumes of different solid objects like, cubes, cuboids, right circular cylinders/ cones, spheres and hemispheres and applies them to objects found in the surroundings.					
LO13	solves problems that are not in the familiar context of the child using above learning. These problems should include the situations to which the child is not exposed earlier.					
LO14	generalises properties of numbers and relations among them studied earlier to evolve results, such as, Euclid's division algorithm, Fundamental Theorem of Arithmetic and applies them to solve problems related to real life contexts.					
LO15	develops a relationship between algebraic and graphical methods of finding the zeroes of a polynomial.					
LO16	finds solutions of pairs of linear equations in two variables using graphical and different algebraic methods.					
LO17	demonstrates strategies of finding roots and determining the nature of roots of a quadratic equation.					
LO18	develops strategies to apply the concept of A.P. to daily life situations.					
LO19	works out ways to differentiate between congruent and similar figures.					
LO20	establishes properties for similarity of two triangles logically using different geometric criteria established earlier such as, Basic Proportionality Theorem, etc.					
LO21	derives formulae to establish relations for geometrical shapes in the context of a coordinate plane, such as, finding the distance between two given points, to determine the coordinates of a point between any two given points, to find the area of a triangle, etc.					
LO22	determines all trigonometric ratios with respect to a given acute angle (of a right triangle) and uses them in solving problems in daily life contexts like finding heights of different structures or distance from them.					
LO23	derives proofs of theorems related to the tangents of circles					
LO24	examines the steps of geometrical constructions and reason out each step					
LO25	finds surface areas and volumes of objects in the surroundings by visualising them as a combination of different solids like cylinder and a cone, cylinder and a hemisphere, combination of different cubes, etc.					
LO26	calculates mean, median and mode for different sets of data related with real life contexts.					
LO27	determines the probability of an event and applies the concept in solving daily life problems.					

A. THEORY BLUEPRINT

S.No.	Unit / Block	Marks	Details / Scope
1	Unit I — Relations and Functions	8	
2	Unit II — Algebra	10	
3	Unit III — Calculus	35	
4	Unit IV — Vectors and Three-Dimensional Geometry	14	

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5	Unit V — Linear Programming			5		
6	Unit VI — Probability			8		
	TOTAL			80	One Theory Paper	

B. QUESTION PAPER DESIGN / BLUEPRINT

Competency / Domain	Marks	Weightage
Remembering and Understanding	44	55%
Applying	20	25%
Analysing, Evaluating and Creating	16	20%
TOTAL	80	100%

C. TYPOLOGY OF QUESTIONS

Item	Details
Paper Design Note	No chapter-wise weightage. Care is to be taken to cover all chapters.
Internal Choice	There will be no overall choice in the question paper; however, 33% internal choices are given in all sections.

D. INTERNAL ASSESSMENT BLUEPRINT — 20 MARKS

S.No.	Component	Marks	Details
1	Periodic Tests (Best 2 out of 3 tests)	10	
2	Mathematics Activities	10	
	TOTAL INTERNAL ASSESSMENT	20	