

MATHEMATICS CORE (041)

Month	Unit/Chapter/Topic	PEDAGOGY TOOLS	E-CONTENT	Learning Outcomes
APRIL	SETS	Visual & Diagrammatic Tools, Concrete & Physical Manipulative, Symbolic & Written Tools, Digital & ICT Tools	https://epathshala.nic.in/topic.php?id=11076CH01	Introduction to sets using examples from real life. Definition of different types of sets. Union and intersection of sets. Application of $n(A \cup B) = n(A) + n(B) - n(A \cap B)$. Representation of sets through Venn diagram and properties of the set.
	COMPLEX NUMBER	Geometric & Visual Frameworks, Interactive Digital Tools & Software, Kinesthetic & Peer Learning, Real-World Applications	https://epathshala.nic.in/topic.php?id=11076CH05	Complex number and algebra of complex number, Conjugate of the complex number, additive inverse, multiplicative inverse of complex number. Properties of the conjugate of complex number. Argand plane and modulus of complex number.
MAY	LINEAR INEQUALITIES	Visual & Physical Tools, Graphical Methods, Digital & Interactive Tools	https://epathshala.nic.in/topic.php?id=11076CH06	Identify Inequalities in one variable and Represent them graphically. Applications of linear inequality problems in real life situations
	UNIT 1 EXAMS			
JULY	TRIGONOMETRIC FUNCTIONS	Digital and Interactive Software, Physical and Hands-on Manipulative, Conceptual & Mnemonic Framework.	https://epathshala.nic.in/topic.php?id=11076CH12	Introduction, Angles, Trigonometric Functions, Trigonometric Functions of Sum and Difference of Two Angles
	RELATIONS AND FUNCTIONS	Dynamic Graphing Tools, Arrow/Mapping Diagrams, Formative Quizzing and Sorting Cards	https://epathshala.nic.in/topic.php?id=11076CH02	Introduction, Cartesian Product of Sets, Relations, Functions Domain and range, Definition of different function
	THREE DIMENSIONAL GEOMETRY	Physical manipulative, Dynamic digital software and Conceptual framework.	https://epathshala.nic.in/topic.php?id=11076CH12	Points on axes, plane and octant. Distance formula in 3 d, centroid of triangle and mid point formula
AUGUST	PERMUTATIONS AND COMBINATIONS	Hands-On Manipulatives & The Play-Way Method, Systematic Listing & Tree Diagrams, Problem Reduction & Think-Alouds	https://epathshala.nic.in/topic.php?id=11076CH07	Introduction, Fundamental Principle of Counting, Permutations, Combinations and their daily use in life.
	BINOMIAL THEOREM	Visual tools (Pascal's Triangle) Conceptual Problem Solving	https://epathshala.nic.in/topic.php?id=11076CH08	Introduction, Binomial Theorem for Positive Integral Indices

SEPTEMBER	FIRST TERM EXAMINATION			
OCTOBER	SEQUENCE & SERIES	Computational & Interactive Spreadsheets, Gamified & Collaborative Practice	https://epathshala.nic.in/topic.php?id=11076CH09	Students will be able to recall A.P studied earlier draw inference on the basis of various patterns and develop attitude to think, analyse and articulate logically. Mathematics used in daily life by taking examples from G.P
	STRAIGHT LINE	Physical & Kinaesthetic Manipulative, Step-by-Step Practice & Assessment Platforms	https://epathshala.nic.in/topic.php?id=11076CH10	Students will be able to recall and understand Geometry with algebra. Know the concept of slope of a line , apply the formula to calculate the slope between two points in a plane. Apply the formula to find equation of lines
	CONIC SECTION	Physical Manipulative, Project-Based & Collaborative Learning	https://epathshala.nic.in/topic.php?id=11076CH11	Students will be able to understand Sections of a Cone, Equation of Circle Definition, Focus, Latus rectum and directrix of parabola and Equation of Parabola. Definition, Major axis, minor axis, Focus, Latus rectum and directrix of Ellipse and its equation Definition, Transverse axis, Conjugate axis, Focus, Latus rectum and directrix of Hyperbola
NOVEMBER	LIMITS & DERIVATIVES	Interactive Graphing & Visual Learning, Step-by-Step Algebraic Solvers, Pedagogical Strategies & Frameworks	https://epathshala.nic.in/topic.php?id=11076CH13	Students will be able to understand Algebra of limits, Limits of polynomials and rational functions, Limits of Trigonometric Functions , Limits of Logarithmic and Exponential Functions . Algebra of derivative of functions, Derivative of the functions from first principle and Derivatives of functions
	STATISTICS	Active learning, Simulation and Real Data Application	https://epathshala.nic.in/topic.php?id=11076CH15	Students will be able to understand Measures of Dispersion, Range, Mean Deviation, Variance and Standard Deviation .After learning this chapter students will be able to. Interpretate and analyze the data
	PROBABILITY	Physical Manipulative (The Frequentist Approach), Digital Tools & Simulations, Conceptual & Visual Organizers	https://epathshala.nic.in/topic.php?id=11076CH16	Students will be able to understand Random experiments, Outcomes and sample space , Types of events, Algebra of events, Probability of an event
DECEMBER	REVISION AND UNIT 2			