



Pt. Nagesh Dutt Public School, Ajhara – Lalganj

Session: 2026–27

Academic Syllabus Class X

Subject : Hindi

Month	Syllabus (पाठ्यपुस्तक + व्याकरण + लेखन कौशल)
अप्रैल – मई	क्षितिज (गद्य) – नेता जी का चश्मा : स्वयं प्रकाश क्षितिज (काव्य) – सूरदास के पद व्याकरण – उपसर्ग, प्रत्यय लेखन – अनुच्छेद लेखन
जुलाई	कृतिका – माता का आंचल : शिवपूजन सहाय क्षितिज (गद्य) – बाल गोविंद भगत : रामवक्ष बेनीपुरी व्याकरण – समास, समास के भेद लेखन – पत्र लेखन (अनौपचारिक)
अगस्त	क्षितिज (गद्य) – लखनवी अंदाज : यशपाल क्षितिज (काव्य) – राम-लक्ष्मण-परशुराम संवाद : तुलसीदास व्याकरण – वाक्य भेद लेखन – संवाद लेखन, निबंध लेखन
सितंबर	क्षितिज (गद्य) – एक कहानी यह भी : मन्नू भंडारी क्षितिज (काव्य) – आत्मकथ्य : जयशंकर प्रसाद व्याकरण : अलंकार, अलंकार के प्रकार लेखन – अनुच्छेद लेखन
अक्टूबर	क्षितिज (गद्य) – नौबत खाने में इबादत : यतीन्द्र मिश्र क्षितिज (काव्य) – उत्साह, अट नहीं रही है : सूर्यकांत त्रिपाठी 'निराला' व्याकरण – अलंकार के प्रकार, समास के भेद लेखन – पत्र लेखन (औपचारिक)(अनौपचारिक)
नवम्बर	कृतिका – साना साना हाथ जोड़ि..... : मधु कंकरिया क्षितिज (काव्य) – यह दंतुरित मुसकान फसल : नागार्जुन व्याकरण – लिपि, लिपि के रूप लेखन – ई-मेल लेखन, सूचना लेखन, विज्ञापन लेखन
दिसम्बर	क्षितिज (काव्य) – संगतकार : मंगलेश डबराल व्याकरण – वाक्य भेद, त्रुटि सुधार, वाक्य निर्माण, शब्द निर्माण लेखन – लघुकथा लेखन, अनुच्छेद लेखन, निबंध लेखन
जनवरी	क्षितिज (गद्य) – संस्कृति : भदंत आनंद कौसल्यायन कृतिका – मैं क्यों लिखता हूँ – अज्ञेय व्याकरण – रूपांतरण : एक विधा से दूसरी विधा, शब्दालंकार लेखन – विज्ञापन लेखन, संदेश लेखन, स्ववृत्त लेखन
फरवरी	बोर्ड

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Academic Conclusion :

This syllabus has been strategically designed to ensure a **strong foundational base**, enabling learners to transition confidently into higher academic levels. It emphasizes **conceptual clarity, skill development, and joyful learning**, thereby nurturing well-rounded individuals equipped for future academic and life challenges.

Approved By :

Ms. Reema Mishra
(Academic Controller)
Pt. Nagesh Dutt Public School



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Academic Syllabus Class X

Subject : Mathematics

Month	Unit / Sub Unit	Topics
April – May	Unit I: Number Systems Real Numbers Unit II: Algebra Polynomials	Fundamental Theorem of Arithmetic (statement, applications), irrational numbers ($\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$), real numbers and their properties, exponents and radical powers, real-life applications Zeros of polynomial, relation between zeros and coefficients, graphical understanding, applications
July	Unit II: Algebra Pair of Linear Equations in two variables	Graphical solution, consistency conditions, algebraic methods (substitution & elimination), real-life problems
August	Unit II: Algebra Quadratic Equations	Standard form, factorization, quadratic formula, discriminant, nature of roots, real-life applications
September	Unit II: Algebra Arithmetic Progressions	Concept of AP, nth term, sum of n terms, pattern recognition, real-life applications
October	Unit III: Coordinate Geometry + Unit IV: Geometry (Triangles)	Distance formula, section formula, similarity of triangles, BPT, converse, similarity criteria, applications
November	Unit IV: Geometry (Circles) + Unit V: Trigonometry (Intro)	Tangents and theorems, trigonometric ratios, values ($30^\circ, 45^\circ, 60^\circ$), relationships between ratios
December	Unit V: Trigonometry + Unit VI: Mensuration	Identities ($\sin^2 A + \cos^2 A = 1$), heights & distances, areas of sectors/segments, surface areas & volumes of solids
January	Unit VII: Statistics & Probability	Mean, median, mode (grouped data), probability (classical definition), real-life applications
February	Board Exam !! All the Best!!	

Class X – Mathematics Lab Activities

Month	Unit	Lab Activity Title	Objective / Concept
April – May	Number Systems	Verification of Fundamental Theorem of Arithmetic using factor tree method	To verify that every composite number can be uniquely expressed as a product of primes
July	Polynomials	Graph of a quadratic polynomial and verification of number of zeroes	To understand relationship between graph and number of roots
August	Pair of Linear Equations	Graphical solution of two linear equations using graph paper	To determine consistency and number of solutions
September	Quadratic Equations	Finding roots of quadratic equation using paper folding / graphical method	To visualize roots of quadratic equations
October	Arithmetic Progression	Verification of nth term and sum of AP using pattern method	To understand sequence formation and summation
November	Coordinate Geometry + Triangles	Verification of distance formula using coordinate plane	To apply distance formula geometrically
November (2nd Activity)	Triangles	Verification of Basic Proportionality Theorem (BPT) using paper cutting	To verify proportional division of sides
December	Circles	Verification that tangent at any point is perpendicular to radius	To understand tangent property
December (2nd Activity)	Trigonometry	Verification of trigonometric ratios using triangle model	To establish ratio relationships
January	Trigonometry	Verification of identity $\sin^2 A + \cos^2 A = 1$ using paper model	To prove trigonometric identity
January (2nd Activity)	Mensuration	Finding surface area and volume using models of solids	To calculate area and volume practically
February	Statistics	Calculation of mean, median, and mode using real data set	To analyze grouped data
February (2nd Activity)	Probability	Probability experiment using coins/dice	To understand probability through experiments

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Academic Syllabus Class X

Subject : English Literature

Month	Literature (First Flight + Footprints)	Grammar (CBSE)	Writing Skills (CBSE)
April – May	Prose: A Letter to God Nelson Mandela Poem: Dust of Snow, Fire and Ice Footprints: A Triumph of Surgery	Determiners	Case-based factual passage (with visual input- statistical data/chart etc.) of 200-250 words Comprehension, Paragraph Writing
July	Prose: Stories About Flying From the Diary of Anne Frank Poem: A Tiger in the Zoo	Tenses	Formal Letter , Diary Writing
August	Prose: Glimpses of India Poem: How to Tell Wild Animals, The Ball Poem Footprints: The Thief's Story	Modals	Analytical Paragraph Writing, Picture Based Writing
September	Prose: Mijbil the Otter Poem: Amanda! Footprints: The Midnight Visitor	Subject–Verb Concord	Analytical Paragraph (Charts/Graphs) Writing Story Writing
October	Prose: Madam Rides the Bus Poem: The Trees, Fog Footprints: A Question of Trust	Reported Speech (Statements)	Formal Letter, Article Writing, Biography Writing
November	Prose: The Sermon at Benares Poem: The Tale of Custard the Dragon Footprints: Footprints Without Feet	Reported Speech (Questions)	Analytical Paragraph, Report Writing, Advertisement Writing
December	Drama: The Proposal Poem: For Anne Gregory Footprints: The Making of a Scientist	Reported Speech (Commands & Requests)	Dialogue Writing, Speech Writing
January	Footprints: The Necklace, Bholi Footprints: The Book That Saved the Earth	Full Grammar Revision + Application	Report Writing
February	Board Exam		

Academic Conclusion :

The English syllabus has been systematically distributed to ensure continuous skill development across reading, writing, grammar, and literature, aligning with CBSE competency-based education and promoting real-life communication skills.

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Academic Syllabus Class X

Subject : Science

Month	Unit	Chapter / Topics
April – May	Unit I: Chemical Substances – Nature and Behaviour	Chemical Reactions and Equations Chemical reactions, equations, balancing, types of reactions, exothermic/endothermic, oxidation & reduction Acids, Bases and Salts Definitions, indicators, properties, pH scale, importance, preparation & uses (NaOH, POP, etc.)
July	Unit I: Chemical Substances – Nature and Behaviour	Metals and Non-metals Properties, reactivity series, ionic compounds, metallurgy, corrosion Carbon and its Compounds Covalent bonding, hydrocarbons, homologous series, nomenclature, reactions, ethanol, ethanoic acid, soaps
August	Unit II: World of Living	Life Processes Nutrition, respiration, transport, excretion Control & Coordination : Tropic movements in plants; Introduction of plant hormones; Control and co-ordination in animals: Nervous system; Voluntary, involuntary and reflex action; Chemical co-ordination: animal hormones.
September	Unit II: World of Living	Reproduction : Reproduction in animals and plants (asexual and sexual) reproductive health - need and methods of family planning. Safe sex vs HIV/AIDS. Child bearing and women's health.
October	Unit II: World of Living Unit V: Natural Resources	Heredity & Evolution Sexual reproduction, health, Mendel, inheritance, evolution Our environment: Eco-system, Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances.
November	Unit III: Natural Phenomena	Reflection of light by curved surfaces; Images formed by spherical mirrors, centre of curvature, principal axis, principal focus, focal length, mirror formula (Derivation required), magnification. Refraction; Laws of refraction, refractive index.
December	Unit III: Natural Phenomena	Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula (Derivation required); Magnification. Power of a lens. Functioning of a lens in human eye, defects of vision and their corrections, applications of spherical mirrors and lenses. Refraction of light through a prism, dispersion of light, scattering of light, applications in daily life (excluding colour of the sun at sunrise and sunset).
January	Unit IV : Effects of Current	Effects of Current : Electric current, potential difference and electric current. Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, Interrelation between P, V, I and R. Magnetic effects of current : Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying 10 conductor, Fleming's Left Hand Rule, Direct current. Alternating current: frequency of AC. Advantage of AC over DC. Domestic electric circuits.
February	BOARD EXAM PREPARATION	Full syllabus revision, PYQs, numericals, diagrams, case-based questions

Note : Class X – Science Practical Plan and Case Study Attached with syllabus.

Month	Unit Link	Practical Activities	Concept Alignment
April – May	Unit I: Chemical Reactions	1. Classification of chemical reactions (Combination, Decomposition, Displacement, Double Displacement) 2. Action of water on quicklime, heating ferrous sulphate, CuSO ₄ reactions	Types of reactions, oxidation-reduction
July	Unit I: Acids, Bases & Salts	1. pH determination using pH paper (HCl, NaOH, lemon, etc.) 2. Properties of acids & bases (litmus, Zn, Na ₂ CO ₃)	pH scale, acid-base behavior
August	Unit I: Metals & Non-metals	1. Reactivity series experiment (Zn, Fe, Cu, Al) 2. Study of acetic acid properties	Reactivity, chemical properties
September	Unit I: Carbon Compounds	1. Cleaning capacity of soap in soft & hard water	Soaps vs detergents
October	Unit II: Life Processes	1. Temporary mount of leaf peel (stomata) 2. CO ₂ release during respiration	Plant physiology, respiration
November	Unit II: Control & Reproduction	1. Study of binary fission (Amoeba) 2. Budding in yeast & Hydra	Reproduction
December	Unit II + Unit III	1. Identification of dicot seed embryo 2. Focal length of concave mirror & convex lens	Biology + Light (Optics intro)
January (Part 1)	Unit III: Light	1. Refraction through glass slab 2. Refraction through prism	Laws of refraction
January (Part 2)	Unit IV: Electricity	1. Ohm's Law experiment 2. Equivalent resistance (series & parallel)	Electricity concepts

CASE STUDY 1: INDUSTRIAL CHEMISTRY, pH & CORROSION (Unit I)

Situation:

A chemical plant manufactures washing soda ($\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$). During production, CO_2 gas is passed through ammoniated brine to form sodium hydrogen carbonate, which is later heated to obtain sodium carbonate. The plant discharges wastewater with a pH of 3 into a nearby canal. Local farmers report poor crop yield and rusting of iron irrigation pipes. Simultaneously, the plant stores iron machinery exposed to moist air, leading to gradual deterioration.

Questions:

1. Write the sequence of reactions involved in the preparation of washing soda starting from sodium hydrogen carbonate.
2. Explain why wastewater with pH 3 affects soil fertility and crop growth.
3. Suggest a suitable chemical treatment to neutralize the wastewater and justify your choice.
4. Explain the process of rusting of iron in terms of oxidation and reduction.
5. How does moisture accelerate corrosion? Explain electrochemically.
6. Compare the cleaning action of washing soda and soap in hard water.
7. Predict the effect on soil if alkaline effluent ($\text{pH} > 9$) is released instead.
8. Identify two environmental hazards associated with improper industrial discharge.

CASE STUDY 2: ELECTRICITY, POWER DISTRIBUTION & SAFETY (Unit IV)

Situation:

A residential building has 10 flats. Each flat uses appliances such as geysers (2000 W), air conditioners (1500 W), and LED lights (200 W total). All flats are connected to a common supply of 220 V. During peak hours, frequent tripping occurs. An electrician observes that the wiring is overheating and suggests upgrading the system.

Questions:

1. Calculate the total current drawn by one flat when all appliances are ON.
2. Determine the total current drawn by the building.
3. Explain why parallel connection is preferred in domestic wiring.
4. State Ohm's law and apply it to explain heating of wires.
5. Derive the expression for electric power and explain its significance in this case.
6. Why do thicker wires reduce overheating? Explain using resistance concept.
7. What is the role of a fuse in this circuit? Why does it melt frequently?
8. Compare AC and DC supply in terms of transmission efficiency.
9. Suggest two safety measures to prevent electrical hazards.

CASE STUDY 3: OPTICS, HUMAN EYE & ATMOSPHERIC PHENOMENA (Unit III)

Situation:

During a physics experiment, a student observes that a ray of light passing through a glass prism splits into a spectrum. At the same time, his grandfather complains of blurred vision for distant objects and is prescribed corrective lenses. On a foggy morning, the student also notices reduced visibility and scattering of light.

Questions:

1. Explain the phenomenon of dispersion of light through a prism.
2. Why does violet light deviate more than red light?
3. Define refractive index and explain its role in dispersion.
4. Identify the eye defect mentioned and explain its cause.
5. Describe how the prescribed lens corrects the defect with ray diagram logic.
6. Explain scattering of light and its dependence on wavelength.
7. Why is visibility reduced in foggy conditions?
8. Differentiate between real and virtual images formed by lenses.
9. Calculate the power of a lens required if focal length is given (numerical extension).

CASE STUDY 4: BIOLOGY – LIFE PROCESSES, HEREDITY & EVOLUTION (Unit II)

Situation:

In a rural health survey, it is observed that many individuals suffer from respiratory issues due to poor air quality. At the same time, a genetic study reveals that certain traits appear in alternating generations. In agricultural fields, insects have gradually developed resistance to pesticides over several years.

Questions:

1. Explain the process of respiration and how poor air quality affects it.
2. Describe the transport of oxygen and carbon dioxide in the human body.
3. State Mendel's laws and identify which law explains skipping of traits.
4. Explain genotype and phenotype with examples from the case.
5. How does natural selection lead to pesticide resistance in insects?
6. Differentiate between inherited and acquired traits with examples.
7. Explain how variation contributes to evolution.
8. Discuss the importance of reproductive health in population control.
9. Predict long-term ecological effects of pesticide resistance.

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Academic Syllabus Class X

Subject : Social Science

Month	Syllabus Coverage
April – May	Geography: Resources and Development Political Science: Power Sharing Economics: Development
July	History: Rise of Nationalism in Europe Geography: Forest and Wildlife Resources Political Science: Federalism Economics: Sectors of Indian Economy
August	History: Nationalism in India Geography: Water Resources Political Science: Gender, Religion and Caste Economics: Money and Credit
September	Geography: Agriculture Political Science: Political Parties Economics: Globalisation and Indian Economy
October	History: Making of a Global World Geography: Minerals and Energy Resources
November	Geography: Manufacturing Industries Political Science: Outcomes of Democracy Economics: Consumer Rights, Globalisation(Application + Case Study)
December	History: Age of Industrialisation Geography: Lifelines of National Economy
January	History: Print Culture and the Modern World Map Work : Geography: Lifelines of National Economy
February	BOARD EXAM PREPARATION ONLY

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Academic Syllabus Class X

Subject : Information Technology (402)

Month	Syllabus
April – May	Unit 1: Digital Documentation (Advanced) Chapter 1: Introduction To Styles: Introduction to Libre Office Writer, Styles/ categories in Writer (Page, Paragraph, Character, Frame, List, Table), Styles and Formatting, Fill Format, Creating a new style (From Selection method, Drag and Drop method), Updating a new style, Load style from template or document, Applying styles.
July	Unit 1: Digital Documentation (Advanced) Chapter 2: Working with Images: Inserting an Image in a Document (Insert Image Option, Drag and Drop option, Copy and Paste method, Inserting an image by linking), Options to modify image using image toolbar, resize, crop and delete an image, Drawing Objects, Creating drawing objects, Setting or changing its properties, Resizing and grouping drawing objects, Positioning image in the text, Arrangement, Anchoring, Alignment, Text Wrapping.
August	Unit 1: Digital Documentation (Advanced) Chapter 3: Advanced Features of Writer: Table of contents, Hierarchy of headings, Creating a Table of Content (ToC), Customization of Table of Contents (ToC), Maintaining a Table of Contents (ToC), Updating ToC, Deleting ToC, Using templates, Creating a Template, Using In-built/Saved Templates, Using Online Templates, Importing a Template, Editing a Template, Moving a Template, Exporting a Template, Applying Templates to a Blank Document, Track Changes Feature, Preparing a Document for Review, Recording Changes, Accepting and Rejecting Changes, Adding Comments, Deleting Comments, Comparing Documents.
September	Unit 2: Electronic Spreadsheet (Advanced) Chapter 4: Analyse data using scenarios and goal seek: Consolidating Data, Groups and Subtotals, What-if Scenarios, What-if Analysis Tool, Goal Seek.
October	Unit 2: Electronic Spreadsheet (Advanced) Chapter 5: Using Macros in Spreadsheet: Recording a Macro, Running a Macro, Creating and Organising a Simple Macro, Macro as a Function. Chapter 6: Linking Spreadsheet Data: Setting up multiple sheets, Creating reference to other sheets by using keyboard and mouse, Creating reference to another document by using keyboard and mouse, Hyperlinks to the Sheet, Relative and Absolute Hyperlinks, Creating Hyperlinks, Editing a Hyperlink, Linking to External Data, Linking to Registered Data Sources.
November	Chapter 7: Share and Review a Spreadsheet: Sharing Spreadsheet, Opening and saving a shared spreadsheet, Recording changes, Add, Edit and Format the comments, Reviewing Changes – View, Accept or Reject Changes, Merging and comparing. Chapter 8: Introduction to Database Management System: Data and Information, Databases and DBMS, Advantages of database, Data Models (Hierarchical Data Model, Network Data Model, Relational Data Model), Relational database Model, RDBMS Terminology, Objects of an RDBMS.
December	Chapter 9: Starting with LibreOffice Base: Introduction to LibreOffice Base, Data types, Starting with LibreOffice, User Interface Of LibreOffice Base, Opening a Database, Creating a Table (Using a Wizard, Using design view), Setting primary key, Saving a Table, Entering data into table, Navigating through the table, Editing Data, Deleting Records from Table, Sorting Data in the Table. Chapter 10: Working with Multiple Tables: Editing and Deleting tables, Relationships between tables, Types of Relationships – one to one, one to many, many to many, Advantages of Relating Tables in a Database, Creating Relationships between Tables, Referential Integrity.
January	Chapter 11: Queries in Base: Queries, Query creation using wizard, Creation of query using design view, Editing a query, Working with Numerical Data. Chapter 12: Forms and Reports: Forms in BASE, Creating form using wizard, Modifying a Form, Form Controls Toolbar, Report in Base, Inserting other controls in report, Inserting Titles & Headings, Inserting Date & Time. Unit 4: Maintain Healthy, Safe and Secure Working Environment Chapter 13, 14, 15: Introduction to Health, Safety and Security at Workplace, Policies and Procedures, Workplace Hazards (Physical, Electrical, Fire, Health), Ergonomics, Stress, Safety Guidelines, Air and Water Quality, Cleanliness, Musculoskeletal Problems, Computer Health Tips, Accidents and Emergencies, First Aid, Electrical Safety, Evacuation, Fire Prevention, Rescue Techniques.
February	Board Exam Preparation Only (No New Syllabus)

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