

BAL BHARATI PUBLIC SCHOOL, DWARKA
ANNUAL PEDAGOGICAL PLAN
CLASS-X
(2023-24)



ENGLISH

MONTH	NO. OF WORKING DAYS	COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING METHOD
April	17	First Flight- A Letter to God, Dust of Snow, Fire & Ice, Nelson Mandela: A Long Walk to Freedom, Tiger in the Zoo Footprints Without Feet- A Triumph of Surgery Writing- Letter (Application) Grammar- Tenses, Modals	-To enable the students know the difference between human teachers and Robotic Teachers. - Identify and explain the significance of essential elements in poetry. - To be able to use correct grammatical structure in a sentence. -Understanding and appreciation of the works of Robert Frost -Development of comprehension skills. -Understanding of literary devices	Evaluate, analyze, recall, extrapolate, think critically	Guided Discussion Problem solving based learning Peer teaching Self-assessment
May	17	First Flight- Two Stories about Flying i) His First Flight, ii) The Black Aeroplane, How to Tell Wild Animals Footprints Without Feet- The Thief's Story, The Midnight Visitor Writing- Formal Letter (Letter to Editor) Grammar- Reported Speech	-To locate specific information while reading. - To act as a scaffold to understand and empathize with the central character. -To develop the students' critical thinking ability. - To develop the skill to transcribe a text from one form to another. - To develop an understanding of the main idea of the poem. -Understanding and appreciation of the title	Evaluate, Recall, Extrapolate	Listening comprehension, Conversation / Dialogue, Symposium
			- Inculcating sensitivity towards animals - Development of comprehension skills. - Understanding of literary devices		

JULY	21	First Flight- From the Diary of Anne Frank, The Ball Poem, Glimpses of India Footprints Without Feet- A Question of Trust Writing- Formal Letter (Purchase& Inquiry), Analytical Paragraph(Map) Grammar Determiners	To enable the learners to think creatively. Learning about characterization and self analysis. To develop the students' critical thinking ability. To develop the skill to transcribe a text from one form to another. To develop an understanding of the main idea of the poem. Development of the skill to sequence events. Development of comprehension skills Understanding of literary devices.	Conceptualiz-ation Synthesizing Expressing Analytical thinkin g Simulate Collaborative effort and team spirit	Pair Work, Extempore, Written assignments
AUGUST	21	First Flight- Amanda, Mijbil the Otter, Trees Footprints Without Feet- The Making of a Scientist, Footprints Without Feet Writing- Formal Letter	To enable the learners to think imaginatively and write creatively. Learning about characterization. Use correct grammatical structures ,organizing and expressing ideas coherently	Analyze Empathy Visualize perceive	Dictionary, Internet, Newspaper ,Smart Class Module
		(Complaint & Invitation), Analytical Paragraph (Line Graph) Grammar- Subject- Verb Concord	To develop an understanding of the main idea of the poem through the poet's perspective of life. To acquire grammatical accuracy Development of creative writing skills and comprehension skills To plan, organize and present ideas in a coherent manner.		
SEP	19	First Flight- Madam Rides the Bus, The Sermon at Benares, Fog Footprints Without Feet- The Necklace, Bholi Writing- Formal Letter, Analytical Paragraph (Chart) Grammar- Integrated	To enable the learners to think creatively. Learning about characterization and self-analysis. To develop the students' critical thinking ability. To develop the skill to transcribe a text from one form to another.	Logical thinking Observational skills Recognize structure Evaluation	Research Work- Gathering Information Deductive Reasoning Group Work

OCT	20	First Flight- The Proposal, Tale o Custard the Dragon, For Anne Gregory Footprints Without Feet- The book that saved the Earth Grammar- Integrated Grammar Writing: Analytical Paragraph (Report)	To enhance the knowledge about poetic devices To develop the comprehension skills of the students. To enhance the ability to move beyond the text for extrapolation. To develop the writing skills of the students. The learners will be able to identify and explain the significance of essential elements in poetry. Read texts actively	Conceptualization Synthesizing Expressing Analytical thinking Simulate Collaborative effort and team spirit	Guided Discussion Problem solving based learning Peerteaching Self-assessment
			Recognize key passages; raise questions; comprehend the literal and figurative uses of language. Enhancement of the students' inferential skills		
NOV	17	Literature, Grammar & Writing- Revision	To facilitate the understanding of the text and enhance vocabulary. To enhance the ability to move beyond the text for extrapolation. Acquisition of grammatical accuracy. To develop the writing skills of the students. The learners will be able to identify and explain the significance of essential elements in poetry. Read texts actively: recognize key passages; raise questions; comprehend the literal and figurative uses of language. Enhancement of the students' inferential skills	Evaluate, analyze, recall, extrapolate, think critically	Listening comprehension, Conversation / Dialogue, Symposium
DEC	20	Revision	To facilitate the understanding of the text and enhance vocabulary. To enhance the ability to move beyond the text for extrapolation Acquisition of grammatical accuracy To develop the writing skills of the students The learners will be able to identify and explain the significance of essential elements in poetry. Read texts actively: recognize key passages; raise questions;	Evaluate, Recall, Extrapolate	Research Work- Gathering Information Deductive Reasoning Group Work

			comprehend the literal and figurative uses of language. Enhancement of the students inferential skills Teaching Aids /Resources		
JAN	17	Revision	To enable the learners to think creatively. Learning about characterization and self-analysis. To develop the students' critical thinking ability. To develop the skill to transcribe a text from one form to another.	Logical thinking Observational skills Recognize structure Evaluation	Dictionary, Internet, Newspaper, Smart Class Module
FEB & MARCH	21 18	Board Exams	To facilitate the understanding of the text and increase vocabulary. To enhance the ability to move beyond the text for extrapolation Recognize key passages; raise questions; appreciate complexity and ambiguity; comprehend the literal and figurative uses of language. The learners will have a better grasp over the language.	Analyze Empathy Visualize perceive	Pair Work, Extempore, Written assignments
PT 1		LITERATURE- First Flight- A Letter to God, Dust of Snow, Fire & Ice, Nelson Mandela: A Long Walk to Freedom, Tiger in the Zoo Footprints Without Feet- A Triumph of Surgery, The Thief's Story			
MID TERM		LITERATURE- First Flight- A Letter to God, Nelson Mandela: A Long Walk to Freedom, Two Stories about Flying i) His First Flight, ii) The Black Aeroplane, From the Diary of Anne Frank, Glimpses of India			

		Dust of Snow, Fire & Ice, The Ball Poem, Howto tell Wild Animals, Tiger in the Zoo Footprints Without Feet- A Triumph of Surgery, The Thief’s Story, The Midnight Visitor, A Question of Trust Writing- Formal Letter (Application, Letter to Editor, Purchase& Inquiry), Analytical paragraph (Map) GRAMMAR- 1.Editing 2. Tenses 3.Modals Reported Speech Dialogue Writing Determiners Portfolio-Notebook Submission (5 marks) Subject Enrichment- ASL (5marks)- Travellogue on Delhi and Sikkim (A4 Size 5-7 sheets in a file with pics) Multiple Assessment (5 marks)- Nelson Mandela- Book Mark Making Collage PPT Biography			
PT 2		LITERATURE- First Flight- Amanda, Mijbil the Otter, Madam Rides the Bus, Fog Footprints Without Feet- The Making of a Scientist, The Necklace			

		Writing -Formal Letter, (Complaint& Invitation), Analytical Paragraph (Line Graph) Grammar - Integrated			
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PB 1		100% Syllabus Portfolio-Notebook Submission (5 marks) Subject Enrichment- ASL (5marks) Literary Legends (PPT) Multiple Assessment (5 marks) Bholi Book Mark Making Collage PPT Biography			
BOARDS		100% Syllabus			

Prescribed Books:

Published by NCERT, New Delhi

First Flight – Text For Class X

Footprints Without Feet- Text For Class X

Words And Expressions – Workbook For Class X

विषय - हिंदी (Code 085)

शिक्षण उद्देश्य:

1. विद्यार्थियों में स्वतंत्र चिंतन की क्षमता तथा कल्पना शक्ति का विकास करना।
2. गद्य की भिन्न-भिन्न विधाओं के भाषिक प्रयोगों तथा अन्य भाषिक क्रियाओं द्वारा भाषा संबंधी विशेषताओं का विकास करना।
3. भाषा अभिव्यक्ति, संवाद और लेखन में शुद्धता के साथ-साथ प्रभाव और कल्पना शक्ति बढ़ाना।
4. स्वयं के विचारों को आत्मविश्वास व स्पष्टता से प्रस्तुत करना।
5. मानवीय मूल्यों का विकास करना।

पाठ्यपुस्तकें: स्पर्श (भाग-२) - एन० सी० आर० टी०
 संचयन (भाग-२) - एन० सी० आर० टी०
 व्याकरण कुंज - पी. पी. पब्लिकेशन

माह – अप्रैल				
विषय वस्तु	कार्य दिवस संख्या	शिक्षण के उद्देश्य	कौशल	शिक्षण विधि
स्पर्श(भाग-२) • बड़े भाई साहब • पद(मीरा) • साखी(कबीर) व्याकरण मुहावरे, समास (तत्पुरुष, द्विगु) लेखन विज्ञापन लेखन	17	छात्रों को समय के प्रबंधन व व्यवहार कुशलता के प्रति जागरूक करना। सखियों के माध्यम से नैतिक मूल्यों का ज्ञान व जीवन के व्यावहारिक प्रयोग पर बल दिया जाएगा। मीराबाई के अनन्य और एकनिष्ठ प्रेम व समर्पण भाव की भक्ति से अवगत करवाना। मुहावरों का वाक्यों में प्रयोग कर सकेंगे।	कल्पना कौशल, चिंतन कौशल, छात्र समय प्रबंधन, लगन और परिश्रम के महत्व को जानेंगे।	पी पी टी, चर्चा विधि, प्रश्नोत्तर विधि, व्यावहारिक चिंतन
माह – मई				
स्पर्श(भाग-२) डायरी का एक पन्ना व्याकरण -	17	समास के विभिन्न भेदों की जानकारी प्रदान करना। भाषा कौशलों का विकास करना।	अन्वेषण कौशल, लेखन कौशल,	सामूहिक चर्चा, पी पी टी,

- समास (कर्मधारय, बहुव्रीहि, अव्ययीभाव, द्वंद्व समास) लेखन - अनुच्छेद लेखन - विज्ञापन लेखन			शब्द भंडार में वृद्धि	अनुभव वाचन, अभ्यास पत्रक
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माह – जून

माह – जुलाई

स्पर्श (भाग-२) - ततारा वामीरो कथा - पर्वत प्रदेश में पावस - तीसरी कसम के शिल्पकार : शैलेंद्र व्याकरण - * पदबंध, लेखन - सूचना लेखन - अनुच्छेद लेखन - अपठित गद्यांश	21	प्रकृति में उपस्थित विभिन्न प्राकृतिक उपादानों के प्रति प्रेम उत्पन्न करना। विभिन्न संस्कृतियों व उनके रीतिरिवाजों की जानकारी प्रदान करना। व्याकरण के नियमों व सूचना लेखन के नियमों की जानकारी प्रदान करना।	शब्द भंडार में वृद्धि, सृजन कौशल, प्रकृति और मानवता के प्रति प्रेम जागृत होगा।	बुद्धि परीक्षण, पी पी टी, वीडियो, अभ्यास पत्रक, प्रश्नोत्तर विधि
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माह – अगस्त

स्पर्श (भाग-२) - अब कहाँ दूसरे के दुख में दुखी होने वाले संचयन - हरिहर काका लेखन - औपचारिक पत्र - लघुकथा लेखन - ई -मेल लेखन	21	पशु पक्षी व वन्य संरक्षण के प्रति जागरूकता उत्पन्न करना। ग्रामीण जीवन के समाज में व्याप्त जीवन के जटिलता और सामाजिक संवेदनहीनता से अवगत करवाना। औपचारिक पत्र के प्रारूप का ज्ञान और भावाभिव्यक्ति से परिचित करवाना। कहानी लेखन में सक्षम करना।	प्रकृति व जीव जंतुओं के प्रति सहानुभूति रखने हेतु अभिप्रेरित होंगे। पत्र लेखन कौशल को विकसित कर सकेंगे।	सामूहिक चर्चा, अनुभव वाचन, कहानी लेखन, पी पी टी
माह – सितंबर				
स्पर्श (भाग-२) - मनुष्यता ,तोप संचयन - सपनों के से दिन व्याकरण - वाक्य रूपांतरण (रचना के आधार पर)	19	देश प्रेम , मानवमात्र से प्रेम व दूसरों के हित को सर्वोपरि मानने की भावना का संचार करना। अपने प्रतिदिन के अनुभवों को लिखने के लिए प्रेरित करना। व्याकरण के नियमों की जानकारी प्रदान करना।	प्रयोगात्मक कौशल, अन्वेषण कौशल, कल्पना कौशल, चिंतन कौशल।	पी पी टी, सामूहिक चर्चा, अभ्यास पत्रक

माह – अक्तूबर

स्पर्श (भाग-२) - पतझर में टूटी पत्तियाँ- गिन्नी का सोना ,झेन की देन - कारतूस लेखन - औपचारिक पत्र - ई -मेल लेखन	20	वर्तमान समय में तनाव मुक्त रहने की कला व जापानियों की जीवन जीने की कला से परिचित करना। इतिहास की महत्वपूर्ण से घटना परिचित करना व देश प्रेम की भावना उत्पन्न करना।	भाषा कौशलों का विकास। सामाजिक परिवेश के प्रति जागरूकता, संवेदनशीलता, सहभागिता की भावना को समझ सकेंगे।	पी पी टी, बुद्धि परीक्षण, वीडियो, प्रश्नोत्तर विधि
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माह – नवम्बर

स्पर्श (भाग-२) - कर चले हम फ़िदा - आत्मत्राण संचयन - टोपी शुक्ला	17	सैनिक के माध्यम से छात्रों को देश की सुरक्षा के लिए अपना बलिदान देने से पीछे न हटने के लिए प्रेरित करना। पारस्परिक निश्छल प्रेम से अवगत करना।	देश की सुरक्षा के प्रति जागरूक व सतर्क होंगे। बाल मनोविज्ञान से परिचित होंगे	वीडियो, कविता वाचन, सामूहिक चर्चा
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माह – दिसंबर से फरवरी

- पाठ्यक्रम पुनरावृत्ति - पूर्व बोर्ड परीक्षा 1 एवं 2		अभ्यास प्रश्न पत्र		
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परीक्षा हेतु पाठ्यक्रम

आवधिक परीक्षा - 1	गद्य पाठ - बड़े भाई साहब पद्य पाठ - कबीर की साखी , मीरा के पद व्याकरण – समास (तत्पुरुष समास) लेखन - विज्ञापन लेखन
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आंतरिक मूल्यांकन - 1	- साहित्य ज्ञानवर्धन संबंधी मूल्यांकन - 5 अंक रेडियो शो - बहु विकल्पीय मूल्यांकन - 5 अंक - दिल्ली और सिक्किम पर यात्रा वृत्तांत (यात्रा विवरणिका) - पोर्टफोलियो - 5 अंक (कक्षा का और घर का काम)
मध्य सत्र परीक्षा	गद्य पाठ - बड़े भाई साहब, डायरी का एक पन्ना, ततारा वामीरो कथा पद्य पाठ - कबीर की साखी, मीरा के पद, पर्वत प्रदेश में पावस संचयन - हरिहर काका व्याकरण – पदबंध, मुहावरे, समास, वाक्य रूपांतरण लेखन - सूचना लेखन, अनुच्छेद लेखन, विज्ञापन लेखन, औपचारिक पत्र लेखन, लघुकथा लेखन, ई -मेल लेखन पठन - अपठित गद्यांश तीसरी कसम के शिल्पकार : शैलेंद्र
आवधिक परीक्षा - 2	गद्य पाठ- अब कहाँ दूसरे के दुख में दुखी होने वाले, सपनों के से दिन पद्य पाठ - मनुष्यता, तोप व्याकरण - समास लेखन - सूचना लेखन
आंतरिक मूल्यांकन - 2	- साहित्य ज्ञानवर्धन संबंधी मूल्यांकन - 5 अंक नुक्कड़ नाटक - बहु विकल्पीय मूल्यांकन - 5 अंक पसंद बोर्ड - साक्षात्कार, कोलाज, पीपीटी - पोर्टफोलियो - 5 अंक (कक्षा का और घर का काम)
पूर्व बोर्ड परीक्षा - 1,2	संपूर्ण पाठ्यक्रम
बोर्ड परीक्षा	संपूर्ण पाठ्यक्रम

MATHEMATICS

UNITS	UNIT NAME	MARKS
I	NUMBER SYSTEM	06
II	ALGEBRA	20
III	COORDINATE GEOMETRY	06
IV	GEOMETRY	15
V	TRIGONOMETRY	12
VI	MENSURATION	10
VII	STATISTICS AND PROBABILITY	11
	TOTAL	80

MONTH (No. of Working Days)	COURSE CONTENT	LEARNING OUTCOME: Students will be able to	SKILL	TEACHING METHOD
APRIL (17)	CHAPTER 1: (REAL NUMBERS) Fundamental theorem of Arithmetic, Revisiting irrational numbers CHAPTER2: POLYNOMIALS Zeroes of Polynomial Relationship between zeroes and coefficients of a quadratic polynomial Chapter 14: PROBABILITY Meaning of word 'Probability' Probability -a theoretical approach Classical Probability Sum of all probabilities , Complement of an event	Explore the properties of real numbers Represent every given composite number as a product of primes and appreciate that every factorization of composite number is unique Prove that $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$ etc. as irrational numbers Recall factor theorem and remainder theorem learnt in earlier classes and its application Relate the zeroes of the quadratic polynomial $ax^2 + bx + c$ with the coefficients a, b, and c Formulate new polynomials as per sum and product of roots Associate probability as a chance Formulate probability of an Event E as $\frac{\text{No. of outcomes favourable to E}}{\text{No. of all possible outcomes of the Experiment}}$ Verify that the sum of all probabilities of all the elementary events of an experiment is 1 Justify that for any E, E' stands for not E and show that $P(E) + P(E') = 1$	Extrapolation, Conceptualization, Critical thinking, Expressing in mathematical language, problem solving Verification, logical deductions Observational skills Interpretation Extrapolation Analytical thinking Verification Synthesis Problem solving Aptitude Conceptualize Sensitise Formulate Calculate Decisionmaking Logical thinking Extrapolation Justification Analytical thinking	Collaborative Learning, - Guided discussion, - Inductive and deductive learning, - Problem solving with examples - Brain storming - Think, pair and share Collaborative learning Guided discussion Independent practice Problem solving with examples. Inductive and deductive learning Think, pair and share, Brainstorming, Guided discussion, Collaborative learning, Problem solving with examples

May(17)	Chapter3: Pair Of Linear Equations In Two Variable Pair of linear equations in two variables Graphical method of solution of pair of linear equations Algebraic method of solving a pair of linear equations in two variables, Simple situational problems CHAPTER 4 : QUADRATIC EQUATIONS Introduction to quadratic equations, Standard form of quadratic equations, Solution of a quadratic equation, Factorization method Nature of roots	Recall and define general form of linear equations in two variables Express linear equations in two variables Plot ordered pairs in the rectangular coordinate system Create graphs of linear equations to solve word problems Analyze graphs to identify x and y intercepts Determine whether ordered pair is a solution of pair of linear equation in two variables Solve a system of linear equation by the method of substitution, elimination method Recall the concept of quadratic polynomials Correlate with linear equation and quadratic equation Represent the equation in general form as $ax^2 + bx + c = 0$ where a, b, c are real numbers $a \neq 0$ Solve the quadratic equation by using different methods Recall factorization method and apply the same to quadratic	Extrapolation, Synthesis, Accuracy Interpretation Appreciate linearity in nature, self-discipline, Application of concept,Problem solving aptitude Interpretand transform	Collaborative learning, Guided discussion, Think pair and share, Brain storming, graphic organiser Brainstorming, Inductive Deductive Reasoning, Inquiry based learning, Think , pair and share, Independent practice
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	CHAPTER 6: TRIANGLES BPT Similar figures Similarity of triangles Criteria for similarity of triangles	equation Calculate discriminant to find nature of roots and apply the same to problem solving. Identify plane figures which have the same shape and their dimensions are in a certain ratio Identify and visualize triangles which have the same shape and their sides bear a certain ratio Apply the basis on which two triangles can be termed as similar like AAA, SAS, SSS and RHS	Conceptual understanding, Recognition of similar figures in nature Observational skills Ability to visualize Interpretation Evaluation Problem solving aptitude	Activity Method, inductive deductive method, Guided discussion, Peer Teaching, independent Problem solving with examples
JULY (21)	Chapter 5: ARITHMETIC PROGRESSION Introduction Arithmetic Progression (A.P.) Identification of A.P. in real life situations First term and common difference Find the nth term of an A.P. Sum of first n terms Application	Recognize the patterns in a given series. Understand the term 'common difference' and its importance in an A.P Identify the situations in daily life where the A.P. is observed and apply it in solving problems Identify the first term and the common difference Apply the formula and calculate the nth term of an AP Apply the formula and calculate the sum upto n terms of an A.P. Apply the formula for calculating nth term and sum upto n terms in real life situations	Deductive reasoning Analytical thinking Observe Calculate Realise value of time and develop self discipline Logical and deductive reasoning	Inductive- Deductive reasoning, Problem Solving, Guided discussion, Independent practice, Brain storming

	Chapter 7: COORDINATE GEOMETRY Plotting of points on coordinate plane Distance Formula Section Formula Mid point Formula	Locate points in 2-dimensional Cartesian coordinate system Apply the formula and calculate distance between two points on a plane Calculate the coordinates of a point which divides the line segment joining the two points internally in the ratio $m:n$ using the formula Find the coordinates of the midpoint of the line segment using the section formula with ratio 1:1	Conceptualise Accuracy Values like importance of teamwork, Selflessness Calculate Verification Problemsolving Environment sensitivity	Think, pair and share, muddiest point discussion, Problemsolving with examples, Peer learning, graphic organiser
AUGUST (21)	Chapter 8: TRIGONOMETRY Trigonometric ratios Trigonometric ratios of some specific angles Trigonometric ratios of complementary angles Trigonometric identities	Develop understanding of trigonometric ratios of an acute angle of a right angled triangle Tabulate and make use of trigonometric ratios of standard angles of 30° , 45° , 60° to right angled triangle	Conceptualise Instinctive aware-ness of the presence and importance of underlying structure Logical thinking Deductive reasoning Problem solving	Think, Pair and share, Inquiry based learning, Inductive and deductive reasoning, Guided discussion, Collaborative learning
SEPTEMBER (19)	Chapter 9: APPLICATIONS OF TRIGONOMETRY Review basics of trigonometry Meaning of angle of elevation and angle of depression CHAPTER 10: CIRCLES	Recall the basic ratios of trigonometry Visualize eye movement while observing an object Locate common point of intersection of a line and a circle in a plane, Define tangent and secant	Extrapolation Problem solving Observational skills Recognize structure Logical thinking Draw, Observe and analyse Accuracy Conceptualise	Think, Pair and share, Inquiry based learning, Inductive and deductive reasoning, Guided discussion, Collaborative learning

	Introduction Tangent to a circle Tangent at any point of a circle is perpendicular to the radius through point of contact Length of tangent from an external Point Chapter 11: AREA RELATED TO CIRCLES Perimeter and area of circle Areas of sector and segment of a circle	State the theorem and reason out the same (by logical reasoning) Show that the length of two tangents drawn to a circle from an external point are equal, theoretically and geometrically Apply the theorems in various problems and solve them Recall the basic ratios of trigonometry, Identify and apply the terms—major/ minor sector, major/minor segment, angle subtended by the arc at the centre , area of sector of given angle, length of an arc of a sector of given angle. Combine the plane figures and calculate the area	Recognise underlying structure Justification Analytical thinking Problem solving Accuracy Estimation Goldenratio present in nature Problem solving aptitude Self-discipline Motor skills	Inquiry based learning, Inductive and Deductive learning, discussion of muddiest point, Think pair and share Brain storming, Graphic organizers, Guided discussion , Collaborative learning, Problem solving
OCTOBER (20)	Chapter 12: Surface area and Volume Surface area of a combination of solids, Volume of a combination of solids,	Combine various solid shapes and identify such shapes in the surroundings Combine two solid shapes and calculate its surface area and volume	Conceptualise Evaluate Problem solving Calculate Formulate Recognize structure Critical thinking Identify, visualize, draw Correlate	Brain storming, inquiry based learning, Inductive and deductive reasoning, muddiest point discussion, guided learning, problem solving

NOVEMBER (17)	CHAPTER 13: STATISTICS Mean of grouped data Mode of grouped data Median of grouped data	Calculate the average from grouped data using different methods i.e. direct, assumed mean and step deviation method Determine the modal class in a group data and calculate mode using the formula Determine the median class in a group data and calculate median using the formula Represent cumulative frequency distribution	Conceptualise Investigate Logical Thinking Extracting information Problem solving Interpretation Analytical skills Presentation	Graphic organizer, Think pair and share, Inductive and deductive reasoning, Brainstorming, inquiry based learning, Guided discussion, collaborative learning, Problem solving with examples
DECEMBER (20)	Preboard 1 (Full Syllabus)	Revision and testing skills		Peer teaching, collaborative learning Guided practice, Problem solving, Collaborative learning, sample papers
	PT-1 CH 1,2,14	Revision and testing skills Sub Enrichment – AIP(Sikkim project under HHW) – 5 marks NOTEBOOKS/PORTFOLIO-5 MARKS MULTIPLE ASSESSMENT-5MARKS		
	Mid term CH 1,2,3,4,5,6,7,14	Lab activities-5MARKS(Activities done in July and August) NOTEBOOKS/PORTFOLIO-5 MARKS MULTIPLE ASSESSMENT-5MARKS		

	PT- 2 CH – 11,12	SUBJECT ENRICHMENT-5MARKS (Activities done in October)		
		NOTEBOOKS/PORTFOLIO-5 MARKS		
		MULTIPLE ASSESSMENT-5MARKS		
	ANNUAL EXAM CHAPTER 1-14			

SOCIAL SCIENCE

Month	No. of Working days	Topic	Learning Outcome	Skills
April	17	Geography: Resource and Development History: The Rise of Nationalism in Europe Civics: Power sharing Economics: Development	- Enumerates how the resources are interdependent, justify how planning is essential judicious utilization of resources and the need to develop them in India - Infers the rationale for development of resources - Analyse and evaluate data and information related to nonoptimal land, utilization in India. - Examine the impact of the French Revolution on the European countries in the making of the Nation state. - Explore the nature of the diverse social movements of the time. (1830-1848) - Examine the ways by which the idea of nationalism emerged and led to the formation of nation states. - Comprehend how the World War I was triggered by the scramble for colonies in the Balkan states - Examines and comprehends how democracies handle demands and need for power sharing. - Analyse the Challenges faced by countries like Belgium and Sri Lanka ensuring effective power sharing - What Development Promises - Different People, Different Goals - Income and Other Goals - National Development - How to compare different countries or states? - Income and other criteria - Public Facilities - Sustainability of Development	- Understanding - Critical Thinking - Reasoning - Understanding - Critical Thinking - Teamwork - Analysis - Comprehension - Understanding

May	17	Geography: Resource and Development (Continued) History: Age of Industrialization Note: The chapter will be assessed in the periodic assessment only Civics: Federalism Economics: Development (Continued)	- Appraise and infer the need to conserve all resources available in India suggest remedial measures for optimal utilization of underutilized resources - Examine Pre& Post economic, political, social features of Pre and Post Industrialization. - Analyse the impact of Industrialisation in the colonies with specific focus on India. - Comprehend the theory and Practice of Federalism in India. - Analyse the policies and politics that has strengthened federalism in practice.	- Collaboration - Problem Solving - Analysing - Classify - Compare and Contrast - Comprehension - Understanding - Teamwork
July	21	Geography: Forest and Wildlife Resources Water Resources	- Enumerate how conservation of forests and wildlife are interdependent in nature and in maintain the ecology of India. - Analyse and infer how some of the developmental works, grazing wood cutting have impacted on the survival or otherwise of the forests. - Summarizes the reasons for conservation of biodiversity in India under sustainable development. - Enumerate why the water resource of India to be conserved. - Summarize the roles of Multipurpose projects supporting the water requirement of India. - Explore various facets of Nationalistic movements that ushered in the sense of Collective Belonging	- Analysis - Comprehension - Understanding - Teamwork - Critical thinking - communicating - collaborating - Analysis

		History: Nationalism in India Civics: Gender, Religion and Caste Economics: Sectors of the Indian Economy	• Discuss the impact of the first world war on triggering two defining movements (Khilafat & Non-cooperation Movement) in India. • Assess/ appraise the role of Mahatma Gandhi and other leaders in the two movements (NCM & CDM) • Examines the role and differences of Gender, religion and Caste in practicing Democracy in India. • Analyses the different expressions based on these differences are healthy or otherwise in a democracy • Identify major employment generating sectors. • Reason out the government investment in different sectors of economy.	• Tracking cause and affect • Problem solving
August	21	Geography: Agriculture History: Print culture and the Modern World. Economics: Sectors of Indian Economy (Continued)	• Enumerate how agriculture plays a contributory role in Indian economy • Analyses and infers the challenges faced by the farming community in India • Identifies and summarizes various aspects of agriculture, including crop production, types of farming, modern agricultural practices, and the impact of agriculture on the environment • Examine the development of Print from its beginnings in East Asia to its expansion in Europe and India • Analyse the impact of the spread of technology and consider how social life and culture changed with coming of print	• Analysing • Classify • Compare and Contrast • Critical thinking • communicating • collaborating • Analysis

September	19	Geography: Minerals and Energy Resources History : The Making of a Global World. Sub topic1 The pre modern world Sub topic2: 19th century 1815 - 1914 Sub topic3: The inter- war economy Sub topic 4: Rebuilding of world economy: the post war era. Civics: Political Parties Economics :Money & Credit	- Analyses and infers how different types of minerals are formed, where they are found, their uses, importance for human life and the economy - Infers the resource distribution to real-world situations and proposes strategies for sustainable use of natural resources - Differentiates between the conventional and nonconventional sources of energy - Explore various aspects of how the world changed profoundly in the 19th century in terms of Economic, Political, Social, Cultural and technological areas. - Analyse the destructive impact of colonialism on the economy and the livelihoods of colonised people. - Examine the role, purpose and no. of Political Parties in Democracy - Evaluates the contributions made by national and regional political parties in making or otherwise of Indian democracy. Understand money as an economic concept. - Understand the role of financial institutions from the point of view of day-to- day life	- Inter-disciplinary linkages - Creativity - Understanding - Critical Thinking - Teamwork - Understanding - Critical Thinking - Teamwork
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October	20	Geography: Manufacturing Industries Civics: Outcomes of Democracy Economics: Money & Credit (Continued)	- Differentiates between various types of manufacturing industries based on their input materials, processes, and end products, and analyse their significance in the Indian economy. - Enumerates the impact of manufacturing industries on the environment, and develop strategies for sustainable development of the manufacturing sector. - Infers the relation between availability of raw material and location of the industry - Comprehends the expected and actual outcomes of democracy in view of quality of government, economic wellbeing, in equality, social differences, conflict, freedom and dignity. - Analyses the reasons behind gap that occurs in conversion of expected outcomes into actual outcomes of democracy in various respects: quality of government, economic wellbeing, inequality, social differences and conflict and finally freedom and dignity	- Tracking cause and affect - Problem solving - Critical thinking - communicating - collaborating - Analysis
November	17	Geography: Life Lines of National Economy Economics: Globalisation	- Enumerates how the transportation works as a life line of economy. - Analyse and infer the impact of roadways and railways on the national economy - Analyses and infers the challenges faced by the roadways and railway sector in India. - What is Globalisation and its impact.	- Problem solving - Evaluating
December	20	REVISION		
January	17	REVISION		
February	21	REVISION		
PT-1	Geography: Resource and Development History: The Age of Industrialization Civics: Power Sharing Economics: Development			SE 1- PROJECT CONSUMER AWARENESS OR SOCIAL ISSUES OR SUSTAINABLE DEVELOPMENT

		MA1-INTER DISCIPLINARY PROJECT <i>Inter disciplinary Project with chapter 3 of History: Making of Global World chapter 7 of Geography: Life lines of National Economy, and chapter 4 of Economics Globalization and the Indian Economy</i> PORTFOLIO-CLASSWORK,MAP WORK
Mid Term	Geography: Resource and Development Forest and Wildlife Resources Water Resources History: Nationalism in Europe Nationalism in India Civics: Power Sharing Federalism Gender, Religion and Caste Economics:Development & Sectors of Indian Economy	
PT-2	Geography: Agriculture History: Print culture and Modern World Civics – Political Parties Economics:Money and Credit	SE 2- ART INTEGRATED ACTIVITY (PPT ON SIKKIM & DELHI) MA2-Choice Board Activity (Civics) PORTFOLIO-CLASSWORK, WORK DONE (ACTIVITIES / ASSIGNMENTS)
Pre Board 1	Full Syllabus	
Pre Board 2	Full Syllabus	

SCIENCE– PHYSICS

MONTH	NO. OF WORKING DAYS	COURSE CONTENT	LEARNING OUTCOME	SKILL	PEDAGOGICAL STRATEGIES
APRIL	17	CH -11 ELECTRICITY PRACTICALS To study the dependence of current on potential difference of a resistor and find its resistance.	The students will be able to: • Develop meaning of electric current, electric potential, potential difference and their units. • Evolve Ohm's law and express it Mathematically. • Verify Ohm's law experimentally • Develop meaning of resistance using Ohm's law • List the factors which affect resistance. • Explain resistivity, Conductors, resistors & insulators • Experimentally determine the factors affecting resistance • Calculate effective resistance in series and in parallel combination • Experimentally verify the laws of resistances in series and in parallel. • State Joule's law and express it Mathematically. • Recognise application of commercial unit of energy in our daily life.	• Application and Analysis • Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving	• Demonstration cum lecture method • Guided Discussion • Activity based teaching • Problem solving based learning • Peerteaching

MAY	17	CH -12 MAGNETIC EFFECTS OF CURRENT PRACTICALS To study the dependence of current on potential difference of a resistor and find its resistance. (contn..)	The students will be able to: • Conceptualize magnetic field lines and list their properties. • Experimentally trace magnetic lines of force due to bar magnet, current carrying straight wire, current carrying circular wire, current carrying solenoid. • Comprehend and apply right hand thumb rule to find the direction of magnetic field. • Experimentally study the force acting on a current carrying conductor.	• Application and Analysis • Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving	• Demonstration cum lecture method • Guided Discussion • Activity based teaching • Problem solving based learning • Peerteaching
JULY	21	CH -12 MAGNETIC EFFECTS OF CURRENT (contnd..) PRACTICALS To determine equivalent resistance in series and parallel combination of resistors.	• Comprehend and apply Fleming's Left hand rule for finding direction of force on a current carrying conductor and apply it to working of motor. • To study domestic electric circuit, short circuiting and overloading.	• Environmental awareness • decision making • Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving	• Guided Discussion • Activity based teaching • Problem solving based learning • Peerteaching
AUGUST	21		The students will be able to:	• Understanding	• Guided Discussion

		CH -9 LIGHT-REFLECTION AND REFRACTION. PRACTICALS To determine focal length of concave mirror and convex lens.	• Conceptualize the term reflection of light and laws of reflection. • Analyse image formation in plane mirror. • Distinguish between real & virtual image. • Comprehend the term spherical mirrors, identify their types and define the terms—pole, aperture, focus principal axis, center of curvature, radius of curvature focal length. • Discover rules for obtaining image formed by spherical mirrors. • Draw ray diagrams to show formation of image by concave and convex mirror • Study the formation of image by a concave mirror and a convex mirror for different positions of objects and identify their application • Experimentally find focal length of a concave mirror by focusing the image of a distant object. • Comprehend mirror formula and magnification formula. • Solve numerical problems using above relations.	• Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving	• Activity based teaching • Problem solving based learning • Peerteaching
SEP	19	CH -9 LIGHT-REFLECTION AND REFRACTION (contnd..)	The students will be able to: • Comprehend definition of refraction of light and represent it	• Understanding • Evaluate and inference	• Guided Discussion • Activity based teaching

		PRACTICALS To trace the path of ray of light through a glass slab for different angles of incidence.	diagrammatically. • Classify optical medium as a rarer or a denser medium. • Evolve laws of refraction of light, verify them experimentally. • Interpret the meaning of the term refractive index and its relation to the velocity of light. • Sketch ray diagrams to locate image in convex and concave lenses. • Analyse the reason behind everyday phenomena using knowledge of refraction of light. • Develop meaning of power of lens, state and define its unit • Identify combination of lens. • Investigate the uses of lenses in our day-to-day life. • Solve numerical problems using Formula for power of lens.	• Collaborating Learning • Critical thinking • Problem solving	• Problem solving based learning • Peerteaching
OCTOBER	20	CH -10 HUMAN EYE AND COLOURFUL WORLD PRACTICALS To trace the path of ray of light through a glass prism. (contnd..)	The students will be able to: • Sketch various parts of the eye and understand their functions and correlate it to everyday situations. • Develop the meaning of the term Accommodation.	• Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving	• Guided Discussion • Activity based teaching • Problem solving based learning • Peerteaching

			• Explain the terms – far point, nearpoint, least distance of distinct vision. • Develop the meaning of Myopia, myopic eye, cause of myopia, and infer its correction using concave lens. • Comprehend Hypermetropia, hypermetropic eye, cause of hypermetropia and infer its correction by convex lens. • Calculate the power of lens for correction of eye-defects. • Trace the path of a ray of light through a glass prism and develop meaning of angle of deviation.		
NOVEMBER	17	CH -10 HUMAN EYE AND COLOURFUL WORLD (contnd..) PRACTICALS a) To trace the path of ray of light through a glass prism. (contnd..) b) To draw the images of an object formed by a convex lens when placed at various positions.	The students will be able to: • Comprehend the term dispersion of light and deduce the cause of dispersion. • Illustrate that white light is composed of seven colours • Develop the meaning of atmospheric refraction. • Deduce the reason for apparent position of star, advanced sunrise and sunset • Develop concept of scattering of light and Tyndall Effect. • Infer that the color of scattered light depends on the size of particles. • Reason out the blue colour of the sky & red colour of sun at sunrise.	• Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving	• Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching

			• Observe the scattering of blue light by colloidal solution.		
DECEMBER	20	REVISION	The students will be able to: •Recapitulate their learning. •Produce their learning in the form of written and oral assessment. • Reflect upon their interpretation skills. • Reflect upon their writing and learning skills.	• Reflective thinking. •Collaborating Learning •Critical thinking •Problem solving	• GuidedDiscussion. • Problem solving based learning • Peerteaching
JANUARY	17	REVISION			
FEBRUARY	21	REVISION			
MARCH	18	FINAL EXAMS			
PT 1		CH - 11 – Electricity Pen and paper -1 (5 marks) Multiple Assessment-1 (5 marks) Notebook -1 (5 marks) Subject Enrichment-1 (5 marks)			
MID TERM		Midterm exam for 80 marks (including physics, chemistry and biology) - 50% of syllabus Chapters 11,12, 13			
PT 2		CH 11, 12 Pen and paper -2 (5 marks) Multiple Assessment-2 (5 marks) Notebook -2 (5 marks) Subject Enrichment-2 (5 marks)			
PRE- BOARD 1		100% syllabus for 80 marks.			
PT 3		Chapters-9 and 10 Pen and paper -3 (5 marks) Multiple Assessment-3 (5 marks) Notebook -3 (5 marks)			

	Subject Enrichment-3 (5 marks)
PRE- BOARD 2	100% syllabus for 80 marks.

SCIENCE (CHEMISTRY)

MONTH	NO. OF WORKING DAYS	COURSE CONTENT	LEARNING OUTCOME	SKILL	PEDAGOGICAL STRATEGIES
APRIL	17	CH -1 CHEMICAL REACTIONS AND EQUATIONS PRACTICALS: To perform and identify types of Chemical Reactions	The students will be able to: • Demonstrate & verify chemical changes • Relate chemical changes to a daily life situations • Convert chemical change into word equation • Substitute it by symbols and formula • Correlate law of conservation to balancing chemical equations • Observe the changes to determine a chemical reaction • Demonstrate types of chemical reactions • Compare the different types of reactions • Classify the reactions as oxidation or reduction • Compare the reactions • Apply oxidation in daily life	• Application and Analysis • Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving • Interpersonal skills	• Demonstration cum lecture method • Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching
MAY	17	CH -2 ACIDS, BASES AND SALTS	The students will be able to: • Demonstrate the properties of acids and bases • Identify the substances as acids or bases. • List the properties of acids and bases after performing the activities • Compare the properties of acids and bases • Correlate the pH to acidic, basic or neutral substances. • Test the pH values of solutions	• Application and Analysis • Understanding • Evaluate and inference • Collaborating Learning • Critical thinking	• Demonstration cum lecture method • Guided Discussion • Activity based teaching • Problem solving based learning

		PRACTICALS To study the properties of acid and bases	• Classify the substances into acids & bases by noting the color of pH Paper • Discuss the importance of pH in everyday life • Associate formation of salts to various reactions • Substitute the names of salts by their formulae • Identify the parent acid and base from which the salt is formed • Tabulate the salts into their families • Predict and check the pH of few common salts • Justify the various uses of salts in daily life and industry	• Problem solving • Interpersonal skills • Environmental awareness	• Peer teaching
JULY	21	CH -2 ACIDS, BASES AND SALTS (contnd..) CH -3 METALS AND NON METALS PRACTICALS: To determine the pH of different samples.	Metals and Non metals: The students will be able to: • Demonstrate properties of metals and non-metals • Compare properties of both metals and non-metals • Identify metals and non-metals from the given samples • Tabulate the reactivity series of metals • Arrange metals into ascending and descending order of reactivity • Predict the occurrence of various reactions • Perform experiments on various reactions • Illustrate electronic configuration of elements • Correlate valency and type of bond formed • Draw schematic diagrams for ionic compounds • Demonstrate properties of ionic compounds • Compile the metals and soluble salts from earth's crust and sea water • Compare minerals and ores • Identify various steps in the extraction of metals • Choose different separating	• decision making • Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving • Application and analysis	• Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching • Demonstration cum lecture method

			techniques for the ores •Apply conceptual and experimental knowledge of metals in daily life •Demonstrate the activity performed to show corrosion •Identify the factors responsible for corrosion •Relate the metal to the coating Formed i.e corrosion. •Propose various methods to prevent corrosion • Develop and define the various Methods		
AUGUST	21	CH -3 METALS AND NON METALS (contnd..) CH -4 CARBON AND ITS COMPOUNDS. PRACTICALS: To Observe the action of Zn, Fe, Cu and Al metals on the corresponding salt solutions and arrange them in increasing order of reactivity.	Carbon and its compounds- The students will be able to: • Compile the various substances that are used in daily life which contain carbon • Illustrate carbon with 4 valence electrons forming only covalent bonds • Correlate the bonds formed as single, double or triple to the number of pairs of electrons shared between them • Connect electronic dot structure of atoms for the formation of covalent bonds • Classify the homologous series and its characters • Apply the general formula of homologous series • Identify the name of the homologous series • Select the compound and identify the functional group • List the properties of alcohols and carboxylic acids • Compare the properties of alcohols and carboxylic acids • Realize the effect of alcohols on living beings • Understand the cleansing action of soap • Draw the structure of micelle • Compare hard and soft water	• Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving • Interpersonal skill • Artistic Skill • Environmental awareness	• Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching • Demonstration cum lecture method

			• Realize the excessive use of soaps and detergents leads to water pollution • Demonstrate activities for the preparation of soap and for identifying the salts which cause hardness in water		
SEPTEMBER	19	CH -4 CARBON AND ITS COMPOUNDS. (contnd..) PRACTICALS: To study the characteristic properties of acetic acid.	The students will be able to: • Identify the name of the homologous series • Select the compound and identify the functional group • List the properties of alcohols and carboxylic acids • Compare the properties of alcohols and carboxylic acids • Realize the effect of alcohols on living beings	• Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving	• Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching • Demonstration cum lecture method
OCTOBER	20	CH -4 CARBON AND ITS COMPOUNDS. (contnd..) PRACTICALS: a) To study characteristic properties of Acetic acid. (contnd..) b) Study of comparative cleansing capacity of sample of soap in hard and soft water.	The students will be able to: • Understand the cleansing action of soap • Draw the structure of micelle • Compare hard and soft water • Realize the excessive use of soaps and detergents leads to water pollution	• decision making • Understanding • Evaluate and inference • Collaborating Learning • Critical thinking • Problem solving • Application and analysis	• Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching • Demonstration cum lecture method
NOVEMBER	17		The students will be able to:	• decision making	• Guided Discussion

		CH -4 (Contd) PRACTICALS: Study of comparative cleansing capacity of sample of soap in hard and soft water. (contnd..)	Demonstrate activities for the preparation of soap and for identifying the salts which cause hardness in water	• Understanding •Evaluate and inference •Collaborating Learning •Critical thinking •Problem solving •Application and analysis	• Activity based teaching • Problem solving based learning • Peerteaching • Demonstration cum lecture method
DECEMBER	20	REVISION	The students will be able to: •Recapitulate their learning.	• Reflective thinking. •Collaborating Learning •Critical thinking •Problem solving	• GuidedDiscussion. • Problem solving based learning • Peerteaching
JANUARY	17	REVISION	•Produce their learning in the form of written and oral assessment. • Reflect upon their interpretation skills. • Reflect upon their writing and learning skills.		
FEBRUARY	21	REVISION			
MARCH	18	FINAL EXAMS			
PT 1		Chapter 1 – Chemical Equations and Reactions Pen and paper -1 (5 marks) Multiple Assessment-1 (5 marks) Notebook -1 (5 marks) Subject Enrichment-1 (5 marks)			
MID TERM		Midterm exam for 80 marks (including physics, chemistry and biology) - 50% of syllabus Chapters 1,2, 3			
PT 2		Chapter 2 and 3 Pen and paper -2 (5 marks) Multiple Assessment-2 (5 marks) Notebook -2 (5 marks) Subject Enrichment-2 (5 marks)			

PRE- BOARD 1	100% syllabus for 80 marks.
PT 3	Chapters-4 Pen and paper -3 (5 marks) Multiple Assessment-3 (5 marks) Notebook -3 (5 marks) Subject Enrichment-3 (5 marks)
PRE- BOARD 2	100% syllabus for 80 marks.

SCIENCE (BIOLOGY)

MONTH	NO. OF WORKING DAYS	COURSE CONTENT	LEARNING OUTCOME	SKILL	PEDAGOGICAL STRATEGIES
APRIL	17	CH - 15 OUR ENVIRONMENT	The students will be able to: • develop the definition of ecosystem & study the components • classify ecosystem in to various types on the basis of their nature and size • correlate the importance of biotic and abiotic components in all ecosystem • develop the definition of food chain and trophic level • construct the food chain with different trophic levels • establish nutritional relationships among organisms • determine features of food chain • calculate the amount of energy transferred among various trophic levels in a food chain • construct food web formed by interlinking of food chain	• Understanding, Synthesis • Analysis, Comprehension • Application, Understanding • Understanding Synthesis • Synthesis, Analysis • Analysis, Comprehension • Comprehension • Problem solving, Application	• Demonstration cum lecture method • Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching

		PRACTICAL: To prepare a temporary mount of leaf peel to show its stomata	• compare biodegradable and nonbiodegradable wastes • analyze and discover the reason of ozone layer depletion and measures to avoid this • interpret the harmful effects of ozone depletion • justify and circulate awareness amongst themselves & society for protection of ozone layer • sensitize for planting of more trees which provides huge amount of oxygen in the atmosphere	• Synthesis, Analysis appreciate interdependence in nature • Comprehension, Analysis • Analysis, problem solving, Decision making, critical thinking, Evaluation	• Demonstration cum lecture method • Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching
MAY	17	CH – 6 LIFE PROCESSES PRACTICAL: To experimentally show that carbon dioxide is given out during respiration.	TOPIC: NUTRITION The students will be able to: • develop the concept of life processes • arrive at the meaning of autotrophic nutrition (photosynthesis) • compare and contrast the steps of opening and closing of stomata • identify the type of heterotrophic nutrition in living organisms on the basis of their features • evolve the meaning & function of enzyme • arrange/sequentially all the steps of digestion of food in human • draw labelled diagram of human digestive system TOPIC: RESPIRATION	• Understanding Synthesis • Analysis • Comprehension, Application, Problem solving • Application Analysis • Comprehension Analysis • Comprehension Analysis, Synthesis • Application	• Demonstration cum lecture method • Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching

			• interpret the significance of various pathways of glucose catabolism. • Unify the concept of glucose catabolism – • investigate about the gas released during exhalation • draw and identify the parts of respiratory system	• Artistic skills creative thinking • Application, Analysis • Synthesis, Application • Application, problem solving • Artistic Skill, Application	
JULY	21	CH – 6 LIFE PROCESSES (contd..)	TOPIC: TRANSPORTATION The students will be able to: • identify the components of transport system in humans • mark the direction of blood flow in human heart • conceptualize the path of circulation through flow chart • compare and contrast structure and function of vein and artery • draw and identify the parts of human heart • emphasize on the importance of lymphatic system • discover the mechanism of transport of water in plants. TOPIC: EXCRETION The students will be able to: • identify various waste products • understand the importance of filtration and removal of liquid waste (urine) through kidney • draw the detailed structure of nephron • find out the waste products of plants & mechanism of their removal • discover the impact of less intake of water on excretory system	• Comprehension, Understanding • Analysis, Application • Knowledge, Synthesis • Comprehension, Application • Drawing skill, Comprehension • Analysis • Application, Analysis • Comprehension • Comprehension, understanding Health awareness • Application, Artistic Skills	• Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching • Demonstration cum lecture method

		PRACTICAL: To experimentally show that carbon dioxide is given out during respiration.(contd.)	• evaluate the coordination and cooperation of different life processes for survival of organisms • discover the interdependence between plants & animals in the biosphere	• Evaluation, coordination • Creative thinking • Critical thinking • Environmental awareness	
AUGUST	21	CH – 7 CONTROL AND COORDINATION	The students will be able to: • develop the meaning of stimulus and its corresponding response and sensory receptors • Identify nerve cell and its functions • construct the sequential mechanism of transmitting nerve impulses from one part of the body to another • draw and label the structure of a nerve cell • investigate and list impact of stimulus that creates reflex action • construct a reflex arc in response to a stimulus • tabulate the structure & function of each part of human brain • analyse the diagram of human brain and relate the different parts of brain with their functions • identify the structure of spinal cord & explain its function • compare the spinal nerve and cranial nerve on the basis of origin and function • interpret the need of chemical coordination • locate the position of endocrine glands in human body • correlate the functions of different hormones as means of information transmission in human body • interpret the significance of feedback mechanism • discover the effect of stimuli on plant growth and movement • differentiate between Nastic movement and tropic movement • develop the concept of phytohormones	• Understanding, Synthesis • Application, Comprehension • Synthesis, Application • Application, Artistic Skill • Analysis, Comprehension • Synthesis, Application • Application, Synthesis • Analysis, Application, Critical Thinking • Application, Comprehension • Comprehension, Analysis • Application, Analysis • Knowledge, Application	• Guided Discussion • Activity based teaching • Problem solving based learning • Peer teaching • Demonstration cum lecture method

			- analyze the effect of concentration of different plant hormones on growth of root / shoot, flowering, ageing etc. - investigate the importance of coordination of different endocrine glands and their secretion in performing various functions related to growth, metabolism & movements.	- Application, Comprehension, Analysis - Application, Comprehension - Application, Analysis, Critical thinking - Analysis, Comprehension - Application, coordination, Co-operative learning	Guided Discussion - Activity based teaching - Problem solving based learning - Peer teaching - Demonstration cum lecture method
SEPTEMBER	19	CH – 8 HOW DO ORGANISMS REPRODUCE? PRACTICAL: To study binary fission in Amoeba and budding in yeast with the help of permanent slides.	The students will be able to: - explore the formation and passage of DNA to progeny from parent cells - explain the significance of variation in the survival of species - conceptualize the various modes of reproduction used by unicellular organisms - observe the formation of two daughter cells from a single parent cell (through slide) - observe & relate the small outgrowths developing from yeast cell with the mode of reproduction - observe the bryophyllum leaves, sprouting seeds & explore the parts of plant which propagate vegetatively - draw and describe different types of asexual reproduction	- Analysis, Comprehension, Creative thinking - Comprehension, Application - Comprehension - Comprehension, Analysis - Analysis, Understanding - Application, Analysis, decision making. - Application, Artistic Skill	Guided Discussion - Activity based teaching - Problem solving based learning - Peer teaching - Demonstration cum lecture method

OCTOBER	20	CH – 8 HOW DO ORGANISMS REPRODUCE? (contd..) PRACTICAL: To identify the different parts of an embryo of a dicot seed.	The students will be able to: • develop the concept of sexual reproduction • correlate the labelled diagram to show the parts of a flower with the functions of each part • draw labelled diagram of male and female reproductive system • synthesise the various steps of reproduction in order • analyse the need of reproductive health • identify the contraceptive measures and its need • justify the need of reproduction for the perpetuation & continuity of life • justify that sex ratio needs to be maintained to balance the reproductive process and to spread awareness against female foeticide for a healthy society.	• Knowledge, Synthesis • Application, Analysis • Application, Artistic skill • Synthesis, Comprehension, Application • Analytical ability, Evaluation, Self awareness • Comprehension • Evaluation, Gender equality, Critical thinking	• Guided Discussion • Activity based teaching • Problem solving based learning • Peerteaching • Demonstration cum lecture method
NOVEMBER	17	CH – 9 HEREDITY AND EVOLUTION PRACTICAL: To identify the different parts of an embryo of a dicot seed.	The students will be able to: • Understand the concept of heredity • identify common traits in humans & classify them in different categories • appreciate the efforts of Mendel for studying contrasting traits located on different chromosomes in pea plant • construct a monohybrid & dihybrid cross and calculate the ratio of offsprings (Punnet square) • co-relate the link between genes present and the traits expressed • analyze the importance of knowledge of gender/sex determination in present situation in India • construct a cross to show possibility of male or female child being born in human • create awareness of the fact that scientifically the male is responsible for the sex of the child, not female through the knowledge gained in the class – which will enlighten the society not to do female foeticide.	• Understanding • Analysis, Application Problem Solving • Critical thinking • Synthesis, Problem solving • Application, Problem solving • Evaluation, Analysis Critical thinking • Synthesis, Analysis Application • Gender sensitization, Critical Thinking	• Guided Discussion • Activity based teaching • Problem solving based learning • Peerteaching • Demonstration cum lecture method

DECEMBER	20	REVISION	The students will be able to: •Recapitulate their learning. •Produce their learning in the form of written and oral assessment. • Reflect upon their interpretation skills. • Reflect upon their writing and learning skills.	• Reflective thinking. •Collaborating Learning •Critical thinking •Problem solving	• GuidedDiscussion. • Problem solving based learning • Peerteaching
JANUARY	17	REVISION			
FEBRUARY	21	REVISION			
MARCH	18	FINAL EXAMS			
PT 1		Chapter 6 – (40 marks) Pen and paper -1 (5 marks) Multiple Assessment-1 (5 marks) Notebook -1 (5 marks) Subject Enrichment-1 (5 marks)			
MID TERM		Midterm exam for 80 marks (including physics, chemistry and biology) - 50% of syllabus Chapters 6,7,15			
PT 2		Chapter 7 and 8 Pen and paper -2 (5 marks) Multiple Assessment-2 (5 marks) Notebook -2 (5 marks) Subject Enrichment-2 (5 marks)			
PRE- BOARD 1		100% syllabus for 80 marks.			
PT 3		Post term exam for 40 marks- Chapters- 8, 9 Pen and paper -3 (5 marks) Multiple Assessment-3 (5 marks) Notebook -3 (5 marks) Subject Enrichment-3 (5 marks) (These marks include physics, chemistry and biology)			
PRE- BOARD 2		100% syllabus for 80 marks.			

संस्कृतम् (सम्प्रेषणात्मकम्)

अधिगम-उद्देश्य

1. संस्कृत के माध्यम से छात्रों को भारतीय संस्कृति की सम्यक जानकारी प्राप्त करने योग्य बनाना।
2. संस्कृत भाषा के शुद्ध उच्चारण पर बल देना।
3. नैतिक मूल्यों एवं अनुशासन आदि भावों का विकास करना।
4. विद्यार्थियों में संस्कृत लिखने, पढ़ने व समझने के लिए रूचि उत्पन्न करना।

पाठ्यपुस्तकानि

1. 'मणिका' - द्वितीयो भागः
2. 'मणिका' - अभ्यासपुस्तकम् -2

मासाः	कार्य- दिवसाः	विषय-वस्तुः	शिक्षणोद्देश्यः	कौशल	शिक्षण-युक्तियाँ
अप्रैल	१८	पाठ-१ वाङ्मयं तपः पाठ-२ नास्ति त्यागसमं सुखम् व्याकरण – > अपठित-अवबोधनम् > चित्रवर्णनम् > सम्वादपूर्तिः / कथापूर्तिः > अनुच्छेदः, > संधिकार्यम् – ➤ स्वरसन्धिः (वृद्धि, यण, अयादि, पूर्वरूपम्) ➤ व्यञ्जन सन्धिः (परसवर्णः (अनुस्वारस्थाने पञ्चमवर्णस्य प्रयोगः), तुगागमः, वर्गीयप्रथमवर्णस्य तृतीयवर्णे परिवर्तनम्) ➤ विसर्ग सन्धिः :- (विसर्गस्य उत्त्वम्, रत्वम्, विसर्गलोपः, विसर्गस्य स्थाने स्, श्, ष्)	> नीतिपरक श्लोकों का वाचन करना एवं उनमें निहित ज्ञान को आत्मसात् करना। > छात्रों में त्याग की भावना को विकसित करना एवं प्राचीन भारतीय मूल्यों से परिचय करवाना। > छात्रों को बौद्धिक बल के महत्व से परिचित करवाना एवं बुद्धिबल से सफलता प्राप्त करना > छात्रों को सन्धि-प्रयोग में निपुण बनाना	> कल्पनाशीलता > विश्लेषणात्मकता > आत्मचिंतन > भावात्मकता	> उदाहरण विधि > सामान्य ज्ञान से विशेष ज्ञान की ओर > दृश्य-श्रव्य सामग्री द्वारा शिक्षण

मई	१४	व्याकरण – ➤ पत्रलेखनम् (अनौपचारिकम्) ➤ समासः - वाक्येषु समस्तपदानां विग्रहः विग्रहपदानां च समासः > तत्पुरुषः-विभक्तिः, नञ्, उपपदः > अव्ययीभावः(अनु,उप,सह,निर,प्रति,यथा) , > द्वन्द्वः > सम्वादापूर्तिः / कथापूर्तिः	> छात्रों के वाचन एवं पठन कौशल का विकास होगा > छात्रों को समास के प्रयोग में निपुण बनाना	> सृजनात्मकता > काठिन्य-निवारण > कल्पनाशीलता	> प्रत्यक्ष विधि > व्याख्यान विधि > आगमन एवं निगमन विधि > दृश्य-श्रव्य सामग्री द्वारा शिक्षण
जुलाई	२३	पाठ-३ रमणीया हि सृष्टिः एषा पाठ-४ अज्ञा गुरुणां हि अविचारणीया व्याकरण – > अपठित-अवबोधनम्, > अनुच्छेदः रचनात्मक कार्यम्- > चित्रवर्णनम्, > सम्वादापूर्तिः / कथापूर्तिः > पत्र-लेखनम् (औपचारिकम्) > प्रत्ययाः - ➤ तद्धिताः (मतुप्, ठक्, त्व, तल्) ➤ स्त्रीप्रत्ययौ (टाप्, डीप्) > वाच्यपरिवर्तनम् - (केवलं लट् लकारे) – कर्तृ-कर्म-क्रिया	> छात्रों को अवगत कराना कि प्रकृति सभी प्राणियों के लिए समान रूप से है अतः सभी को परस्पर सौहार्दपूर्ण होकर प्रकृति में सन्तुलन स्थापित करना चाहिए। > छात्रों को गुरु-आज्ञा का महत्व समझाना एवं गुरुओं के प्रति आदर-सत्कार के भाव को विकसित करना। > छात्र पाठ में निहित मौलिक ज्ञान को अपने जीवन में उतार पाएँगे साथ ही ज्येष्ठ एवं गुरुओं के महत्व को समझेंगे।	> सृजनात्मकता > विश्लेषणात्मकता > भावात्मकता > काठिन्य-निवारण	> प्रत्यक्ष विधि > व्याख्यान विधि > समस्या समाधान विधि > प्रदर्शन विधि > दृश्य-श्रव्य सामग्री द्वारा शिक्षण
अगस्त	२३	पाठ – ५ अभ्यासवशातः मनः > अशुद्धि संशोधनम् (वचन-लिङ्ग-लकार-पुरुष-दृष्ट्या संशोधनम्) > समयः- अंकानां स्थाने शब्देषु समयलेखनम् (सामान्य-सपाद-सार्ध-पदोन,) > सम्वादापूर्तिः / कथापूर्तिः	> छात्रों को मानव-जीवन में कठोर परिश्रम, गुणों, श्रेष्ठों की संगति एवं सत्य के आचरण का महत्व समझाना > जीवन के सुख-दुःख को बराबर समझाना > निरन्तर अभ्यास के महत्व एवं उसके परिणामों से अवगत कराना।	> रचनात्मकता > कल्पनाशीलता > विश्लेषणात्मकता > काठिन्य निवारण	> समूह चर्चा > आगमन एवं निगमन विधि > उदाहरण विधि > व्याख्यान विधि

सितम्बर	२१	पाठ ६ राष्ट्रं संक्षयमेव हि पाठ ७ साधुवृत्तिं समाचरेत् पठित-अवबोधनम् (गद्यांश, पद्यांश, नाट्यांश, श्लोकान्वयः, > प्रश्नानां निर्माणम्-(एकपदेन, बहुविकल्पात्मकाः)) > अव्यय-पदानि (इव, उच्चैः, एव, नूनम्, इतस्ततः, विना, सहसा, वृथा, शनैः, इति, मा, यत्, सम्प्रति, इदानीम्, अधुना, यावत्, बहिः, कदापि, च, अपि, पुरा, अत्र-तत्र, यथा-तथा, कदा, श्वः, ह्यः, किमर्थम्, कुत्र) > सम्वादपूर्तिः / कथापूर्तिः	> छात्रों में राष्ट्रभक्ति की भावना को विकसित करना। > छात्रों को अपने जीवन में अच्छे आचरण को धारण करने के लिए प्रेरित करना। > छात्र पाठ को पढ़ सकेंगे एवं संस्कृत के नवीन शब्दों से परिचित होकर वाक्य निर्माण कर सकेंगे	> आत्म-चिंतन > पर्यावरण के प्रति सचेतना > विश्लेषणात्मकता	> प्रत्यक्ष विधि > समूह चर्चा > आगमन एवं निगमन विधि > उदाहरण विधि
अक्टूबर	२१	पाठ- ८ तिरक्कुरल्-सूक्ति-सौरभम् (गद्यांश, पद्यांश, नाट्यांश, श्लोकान्वयः, प्रश्नानां निर्माणम्- (एकपदेन, बहुविकल्पात्मकाः)) > अपठित-अवबोधनम्, > अनुच्छेदः रचनात्मक कार्यम्- > चित्रवर्णनम् > पत्र-लेखनम् > सम्वादपूर्तिः / कथापूर्तिः	> तमिल भाषा के महाकवि संत तिरुवल्लुवर की महान शिक्षाओं से छात्रों को परिचित कराना एवं छात्रों को जीवन में उत्तम आचरण अपनाने की शिक्षा देना > छात्रों का रचनात्मक विकास होगा	> रचनात्मकता > कल्पनाशीलता > विश्लेषणात्मकता > काठिन्य निवारण > आत्मचिंतन	> समूह चर्चा > आगमन एवं निगमन विधि > उदाहरण विधि > व्याख्यान विधि > समस्या समाधान विधि > दृश्य-श्रव्य सामग्री द्वारा शिक्षण
नवम्बर	१९	पाठ-९ सुस्वागतं भो ! अरुणाचलेऽस्मिन् मूल्याङ्कनाय) > अपठित-अवबोधनम्, > अनुच्छेदः रचनात्मक कार्यम्-	> छात्रों को पूर्वोत्तर-राज्य अरुणाचल की भाषा-संस्कृति, खान-पान, रहन-सहन एवं प्राकृतिक सौन्दर्य से परिचित करवाना। > छात्र आरोह – अवरोहपूर्वक पाठ सस्वर पढ़ने में सक्षम होंगे। > छात्रों का रचनात्मक विकास होगा	> वाचन कौशल > विश्लेषणात्मकता > भावात्मकता > काठिन्य-निवारण	> समूह चर्चा > आगमन एवं निगमन विधि > उदाहरण विधि > व्याख्यान विधि
दिसम्बर	२२	पाठ- १० कालोऽहम् (केवलम् आन्तरिक-मूल्याङ्कनाय) पाठ- ११ किं किम् उपादेयम् (केवलम् आन्तरिक	> छात्रों को समय का महत्त्व बताते हुए सभी कार्यों को यथासमय करने के लिए प्रेरित करना। श्रीमदादिशङ्कराचार्य विरचित प्रश्नोत्तरमालिका ग्रन्थ से परिचित करवाना एवं उसमें वर्णित प्रश्नों के माध्यम से जानना कि जीवन में क्या-क्या ग्रहण करने योग्य है अथवा क्या नहीं है।	> विश्लेषणात्मकता > काठिन्य-निवारण	> प्रत्यक्ष विधि > समूह चर्चा > उदाहरण विधि

जनवरी	१५	पुनरावृत्ति:	छात्र पठित पाठों की पुनरावृत्ति करेंगे एवं तत्संबंधित कठिनाईओं का निराकरण करेंगे	> श्रवण-वाचन कौशल > सृजनात्मकता > विश्लेषणात्मकता	> प्रत्यक्ष विधि > समूह चर्चा > उदाहरण विधि
फरवरी	२३	पुनरावृत्ति:	छात्र पठित पाठों की पुनरावृत्ति करेंगे एवं तत्संबंधित कठिनाईओं का निराकरण करेंगे	> विश्लेषणात्मकता > काठिन्य-निवारण	> समूह चर्चा
पूर्वमध्य-सत्र (पी.टी.-१)	‘मणिका’-द्वितीयो भागः - पाठ -१,२ व्याकरणम्- > अपठित-अवबोधनम् > सम्वादपूर्ति: / कथापूर्ति: > चित्रवर्णनम् > संधिकार्यम् – ➤ स्वरसन्धि: (वृद्धि, यण , अयादि , पूर्वरूपम्) ➤ व्यञ्जन सन्धि: (परसवर्णः (अनुस्वारस्थाने पञ्चमवर्णस्य प्रयोगः) , तुगागमः , वर्गीयप्रथमवर्णस्य तृतीयवर्णे परिवर्तनम्) ➤ विसर्ग सन्धि :- (विसर्गस्य उत्त्वम्, रत्वम्, विसर्गलोपः , विसर्गस्य स्थाने स्, श्, ष्) > पत्रलेखनम् (अनौपचारिकम्) > समासः - वाक्येषु समस्तपदानां विग्रहः विग्रहपदानां च समासः ➤ तत्पुरुषः-विभक्तिः, नञ्, उपपदः ➤ अव्ययीभावः(अनु, उप, सह, निर , प्रति, यथा) ➤ द्वन्द्वः				
मध्य-सत्र	‘मणिका’-द्वितीयो भागः - पाठ-१,२,३,४,५ > अपठित-अवबोधनम् > सम्वादपूर्ति: / कथापूर्ति: > चित्रवर्णनम् / अनुच्छेदलेखनम् > संधिकार्यम् – ➤ स्वरसन्धि: (वृद्धि, यण , अयादि , पूर्वरूपम्) ➤ व्यञ्जन सन्धि: (परसवर्णः (अनुस्वारस्थाने पञ्चमवर्णस्य प्रयोगः) , तुगागमः , वर्गीयप्रथमवर्णस्य तृतीयवर्णे परिवर्तनम्) ➤ विसर्ग सन्धि :- (विसर्गस्य उत्त्वम्, रत्वम्, विसर्गलोपः , विसर्गस्य स्थाने स्, श्, ष्) > पत्रलेखनम् (औपचारिकम्/अनौपचारिकम्)				

	> समासः - वाक्येषु समस्तपदानां विग्रहः विग्रहपदानां च समासः ➤ तत्पुरुषः-विभक्तिः, नञ्, उपपदः ➤ अव्ययीभावः(अनु,उप,सह,निर,प्रति,यथा) , ➤ द्वन्द्वः > प्रत्ययाः - ➤ तद्धिताः (मतुप्,ठक्,,त्व,तल्) ➤ स्त्रीप्रत्ययौ (टाप्, डीप्) > वाच्यपरिवर्तनम् - (केवलं लट् लकारे) – कर्तृ-कर्म-क्रिया > अनुवादः
	आंतरिक-मूल्यांकनम् 1. बहुविध-मूल्यांकनम् (छात्राः स्वेच्छया 'विकल्प-फलकेन' कमपि गतिविधिमाध्यमं विचित्य प्रकृतेः सौन्दर्यवर्णनं करिष्यन्ति ।) 2. भाषासम्बर्धन-गतिविधिः (छात्राः दूरदर्शने प्रतिसप्ताहं प्रसार्यमाणं वार्तावली इत्याख्यं संस्कृत-कार्यक्रमं दृष्ट्वा तदाधारितं संस्कृत-कार्यक्रमं कक्षायां प्रस्तौष्यन्ति ।) 3. निवेशसूचिका (Portfolio)/गतिविधिः (छात्राः चित्राणां माध्यमेन वाङ्मयं तपः पाठस्य श्लोकानां वर्णनं करिष्यन्ति ।)
उत्तरमध्य-सत्र (पी.टी.-२)	‘मणिका’-द्वितीयो भागः - पाठ- ६,७,८ व्याकरणम् – > अपठित-अवबोधनम् > सम्वादपूर्तिः / कथापूर्तिः > चित्रवर्णनम् /अनुच्छेदलेखनम् > पत्रलेखनम् (औपचारिकम्/अनौपचारिकम्) > अशुद्धि संशोधनम् (वचन-लिङ्ग-लकार-पुरुष-दृष्ट्या संशोधनम्) > समयः- अंकानां स्थाने शब्देषु समयलेखनम् (सामान्य-सपाद-सार्ध-पदोन,) > अव्यय-पदानि (इव, उच्चै, एव, नूनम्, इतस्ततः, विना, सहसा, वृथा, शनैः, इति, मा, यत्, सम्प्रति, इदानीम्, अधुना, यावत्, बहिः, कदापि, च, अपि, पुरा, अत्र-तत्र, यथा-तथा, कदा, श्वः, ह्यः, किमर्थम्, कुत्र)
	‘मणिका’-द्वितीयो भागः- पाठ- १,२,३,४,५,६,७,८,९
वार्षिक-परीक्षा	> अपठित-अवबोधनम्

> सम्वादपूर्ति: / कथापूर्ति:
 > चित्रवर्णनम् / अनुच्छेदलेखनम्
 > संधिकार्यम् –
 ➤ **स्वरसन्धि:** (वृद्धि, यण, अयादि, पूर्वरूपम्)
 ➤ **व्यञ्जन सन्धि:** (परसवर्णः (अनुस्वारस्थाने पञ्चमवर्णस्य प्रयोगः), तुगागमः, वर्गीयप्रथमवर्णस्य तृतीयवर्णे परिवर्तनम्)
 ➤ **विसर्ग सन्धि :-** (विसर्गस्य उत्त्वम्, रत्वम्, विसर्गलोपः, विसर्गस्य स्थाने स्, श्, ष्)
 > पत्रलेखनम् (औपचारिकम्/अनौपचारिकम्)
 > समासः - वाक्येषु समस्तपदानां विग्रहः विग्रहपदानां च समासः
 ➤ तत्पुरुषः-विभक्तिः, नञ्, उपपदः
 ➤ अव्ययीभावः(अनु, उप, सह, निर, प्रति, यथा) ,
 ➤ द्वन्द्वः
 > प्रत्ययाः -
 ➤ तद्धिताः (मतुप्, ठक्, त्व, तल्)
 ➤ स्त्रीप्रत्ययौ (टाप्, डीप्)
 > वाच्यपरिवर्तनम् - (केवलं लट् लकारे) – कर्तृ-कर्म-क्रिया
 > अशुद्धि संशोधनम् (वचन-लिङ्ग-लकार-पुरुष-दृष्ट्या संशोधनम्)
 > समयः- अंकानां स्थाने शब्देषु समयलेखनम् (सामान्य-सपाद-सार्ध-पदोन),
 > अव्यय-पदानि (इव, उच्चै, एव, नूनम्, इतस्ततः, विना, सहसा, वृथा, शनैः, इति, मा, यत्, सम्प्रति, इदानीम्, अधुना, यावत्, बहिः, कदापि, च, अपि, पुरा, अत्र-तत्र, यथा-तथा, कदा, श्वः, ह्यः, किमर्थम्, कुत्र)

आंतरिक-मूल्यांकनम्

1. बहुविध-मूल्यांकनम् (छात्राः स्वेच्छया 'विकल्पफलकेन' कमपि गतिविधिमाध्यमं विचित्य 'महाकवि-संत-तिरुवल्लुवरस्य जीवनविषये तेन रचितानां ग्रन्थानां च विषये प्रतिपादयिष्यन्ति।)
2. विषयसम्बर्धन-गतिविधिः
(छात्राः 'अरूणाचलप्रदेशस्य प्रकृतिकसौन्दर्यवर्णनम्' इति विषयमधिकृत्य प्रतिरूपनिर्माणं(Model) विधाय संस्कृतभाषायां तस्य वर्णनं विधास्यन्ति।)
3. निवेशसूचिः(Portfolio)/गतिविधयः
(छात्राः श्रीमदादिशङ्कराचार्यविरचितायाः प्रश्नोत्तरमालिकायाः श्लोकान् चित्राणां माध्यमेन वर्णयिष्यन्ति)

ARTIFICIAL INTELLIGENCE

Learning Objective

- Helping learners understand the world of Artificial Intelligence and its applications through games, activities to become AI-Ready.
- Introducing the learners to three domains of AI in an age appropriate manner.
- Allowing the learners to construct meaning of AI through interactive participation and engaging hands-on activities.
- Introducing the learners to AI Project Cycle.
- Introducing the learners to programming skills - Basic python coding language.

Learning Outcomes

Students will be able to

1. Identify and appreciate Artificial Intelligence and describe its applications in daily life.
2. Relate, apply and reflect on the Human-Machine Interactions to identify and interact with the three domains of AI: Data, Computer Vision and Natural Language Processing and Undergo assessment for analysing their progress towards acquired AI-Readiness skills.
3. Imagine, examine and reflect on the skills required for futuristic job opportunities.
4. Unleash their imagination towards smart homes and build an interactive story around it.
5. Understand the impact of Artificial Intelligence on Sustainable Development Goals to develop responsible citizenship.
6. Research and develop awareness of skills required for jobs of the future.
7. Gain awareness about AI bias and AI access and describe the potential ethical considerations of AI.
8. Get familiar and motivated towards Artificial Intelligence and Identify the AI Project Cycle framework.
9. Learn problem scoping and ways to set goals for an AI project and understand the iterative nature of problem scoping in the AI project cycle.
10. Brainstorm on the ethical issues involved around the problem selected.
11. Foresee the kind of data required and the kind of analysis to be done, identify data requirements and find reliable sources to obtain relevant data.
12. Use various types of graphs to visualise acquired data.
13. Understand, create and implement the concept of Decision Trees.
14. Understand and visualise computer's ability to identify alphabets and handwritings.
15. Understand and appreciate the concept of Neural Network through gamification and learn basic programming skills through gamified platforms.

16. Acquire introductory Python programming skills in a very user-friendly format.

Links To Download Study Material From CBSE Website

AI CURRICULUM:-

MAIN LINK:-<http://cbseacademic.nic.in/skill-education-books.html>

PART A:EMPLOYABILITY SKILLS:--http://cbseacademic.nic.in/web_material/Curriculum21/publication/secondary/emp-X.pdf

PART B- SUBJECT SPECIFIC SKILLS:

AI HANDBOOK:-http://cbseacademic.nic.in/web_material/Curriculum21/publication/secondary/Class10_Facilitator_Handbook.pdf

AI PYTHON CONTENT MANUAL:-http://cbseacademic.nic.in/web_material/Curriculum21/publication/secondary/Python_Content_Manual.pdf

SYLLABUS AT A GLANCE

PART A:- EMPLOYABILITY SKILLS (10 Marks)

Unit 1 : Communication Skills-II *

Unit 2 : Self-Management Skills-II

Unit 3 : ICT Skills-II

Unit 4 : Entrepreneurial Skills-II

Unit 5 : Green Skills-II *

Note: * marked units are to be assessed through Internal Assessment/ Student Activities. They are not to be assessed in Theory Exams

PART B:- SUBJECT SPECIFIC SKILLS (40 Marks)

Unit 1:Introduction to Artificial Intelligence (AI)

Unit 2: AI Project Cycle

Unit 3: Advance Python* (*To be assessed in Practicals only)

Unit 4: Data Science* (*To be assessed in Practicals only)

Unit 5: Computer Vision* (*To be assessed in Practicals only)

Unit 6: Natural Language Processing

Unit 7: Evaluation

Note:- Unit 3, 4 and 5 to be assessed in Practicals only. No Theory Exam will be conducted for them

PART C: PRACTICAL WORK (35 Marks)

Unit 3: Advance Python* (*To be assessed in Practicals only)

Unit 4: Data Science

Unit 5: Computer Vision

PART D:- PROJECT WORK (15 Marks)

Practical File/ Student Portfolio

Viva voce

Month	No. Of Working Days	Course Content	Learning Outcomes	<u>Pedagogical Strategies</u> Session / Activity / Practical/ Assessment	Skills
April	17	PART B-SUBJECT SPECIFIC SKILLS UNIT 1: INTRODUCTION TO AI Sub Unit Excite	To identify and appreciate Artificial Intelligence and describe its applications in daily life.	Session: Introduction to AI and setting up the context of the curriculum Activity: Dream Smart Home idea Learners to design a rough layout of floor plan of their dream smarthome.	- Understanding - Designing - Critical thinking - Problem solving
			To relate, apply and reflect on the Human-Machine Interactions. To identify and interact with the three domains of AI: Data, Computer Vision and Natural Language Processing.	Activity: The AI Game - Learners to participate in three games based on different AI domains. - Game 1: Rock, Paper and Scissors (based on data) - Game 2: Mystery Animal (based on Natural Language Processing -NLP) - Game 3: Emoji Scavenger Hunt (based on Computer Vision -CV)	- Understanding - Analysing - Critical thinking - Reflective thinking
			To undergo an assessment for analysing progress towards acquired AI-Readiness skills.	Activity: AI Quiz (Paper Pen/Online Quiz)	
			To imagine, examine and reflect on the skills required for futuristic job opportunities.	Activity: To write a letter Writing a Letter to one's future self. Students will write a letter to self-keeping the future in context. They will describe what they have learnt so far or what they would like to learn someday	- Understanding - Critical thinking - Reflective thinking

		Relate	Students will relate to application of Artificial Intelligence in their daily lives.	Video Session: To watch videos on Smart cities and Smart Homes	• Understanding • Analysing • Critical thinking • Problem Solving
			To unleash their imagination towards smart homes and smart cities. To relate, apply and reflect on the Human-Machine Interactions.		
		Purpose	To understand the impact of Artificial Intelligence on Sustainable Development Goals to develop responsible citizenship.	Session: • Introduction to UN Sustainable Development Goals	• Understanding • Analysing • Critical thinking • Problem Solving
				Activity: Set of pictures will be shown to the students and students will identify the Sustainable Goal. Students to answer questions on Sustainable Development Goals	
		Possibilities	• To research and develop awareness of skills required for jobs of the future. • To imagine, examine and reflect on the skills required for the futuristic opportunities. • To develop effective communication and collaborative work skills.	Session: Theme-based research and Case Studies • Students will listen to various case-studies of inspiring start-ups, companies or communities where AI has been involved in real-life. • Students will be allotted a theme around which they need to search for present AI trends and have to visualise the future of AI in and around their respective theme.	• Understanding • Analysing • Critical thinking • Problem Solving
				Activity: Job Ad Creating activity • Students will figure out how AI is going to transform the nature of jobs in future	
May	17	AI Ethics	To understand and reflect on the ethical issues around AI.	Video Session: Discussing about AI Ethics Activity: Ethics Awareness • Various case studies will be discussed in the class and students will write their point of view about AI Ethics	• Understanding • Analysing • Critical thinking • Problem Solving
			To gain awareness around AI bias and AI access.	Session: AI Bias and AI Access • Discussing about the possible bias in data collection • Discussing about the implications of AI technology	• Understanding • Analysing • Critical thinking • Problem Solving
		PART B-SUBJECT SPECIFIC SKILLS Unit 4 Python Basics	Acquire introductory Python programming skills in a very user-friendly format.	Session: • Introduction to Python language • Introducing python programming and its applications	• Understanding • Computational Thinking • Identifying
				Practical: Python Basics	

		UNIT 3: ADVANCED PYTHON		Students go through lessons on PythonBasics(Variables, Arithmetic Operators, Expressions, Data Types - integer, float, strings, using print() and input()) Students will try some simple problem solving exercises on PythonCompiler.	Critical Thinking Problem Solving
				Practical: Python Lists Students go through lessons on Python lists Students will try some basic problem solving exercises using lists on Python Compiler.	
				Assessment/ Class Test- Online Quiz	
July	21	PART B- SUBJECT SPECIFIC SKILLS Unit 4 Advanced Python UNIT 3: ADVANCED PYTHON	Learning the concepts of loops- for loop and while loop	Session with the help of Power-point presentation: - Revision of Python Lists - For loop, while loop, nested loops	Understanding Computational Thinking Identifying Critical Thinking
				Practical: Python loops with the help of Google colab- Python notebook - Students will learn the concept of python loops. - Students will learn for loop with the help of range() and in operator - Nested loop programs while loop programs	
				Assessment/ Class Test- Online quiz	
AUGUST	21	PART B- SUBJECT SPECIFIC SKILLS Unit 2: AI Project Cycle	Identify the AI Project Cycle framework.	Tool Used:- Power point Presentation Session: Introduction to AI Project Cycle - Problem Scoping - DataAcquisition - DataExploration - Modelling - Evaluation	Understanding Problem Solving Identifying Critical Thinking

		SUB UNIT Problem Scoping	Learn problem scoping and ways to set goals for an AI project.	Activity: Brainstorm around the theme provided and set a goal for the AI project. • Discuss various topics within the given theme and select one. e.g. Restaurant Buffet problem • List down/ Draw a mind map of problems related to the selected topic and choose one problem to be the goal for the project.	• Understanding • Problem Solving • Identifying • Critical Thinking
			Identify stakeholders involved in the problem scoped. Brainstorm on the ethical issues involved around the problem selected.	Activity: To set actions around the goal. • List down the stakeholders involved in the problem. • Search on the current actions taken to solve this problem. • Think around the ethics involved in the goal of your project.	• Understanding • Problem Solving • Identifying • Critical Thinking
			Understand the iterative nature of problem scoping for in the AI project cycle. Foresee the kind of data required and the kind of analysis to be done.	Activity: Data and Analysis • What are the data features needed? • Where can you get the data? • How frequent do you have to collect the data? • What happens if you don't have enough data?	
			Share what the students have discussed so far.	Presentation: Presenting the goal, actions and data.	
		Data Acquisition	Identify data requirements and find reliable sources to obtain relevant data.	Activity: Introduction to data and its types. Students work around the scenarios given to them and think of ways to acquire data.	
		Data Exploration	To understand the purpose of Data Visualisation	Session: Data Visualisation • Need of visualising data • Ways to visualise data using various types of graphical tools.	
			Use various types of graphs to visualise acquired data.	Activity: Let's use Graphical Tools • To decide what kind of data is required for a given scenario and acquire the same. • To select an appropriate graphical format to represent the data acquired. • Presenting the graph sketched.	

		Modelling	Understand, create and implement the concept of Decision Trees.	Session: Decision Tree To introduce basic structure of Decision Trees to students.	
				Activity: Decision Tree To design a Decision Tree based on the data given.	
			Understand and visualise computer's ability to identify alphabets and handwritings.	Activity: Pixel It - To create an "AI Model" to classify handwritten letters. - Students develop a model to classify handwritten letters by dividing the alphabets into pixels. - Pixels are then joined together to analyse a pattern amongst same alphabets and to differentiate the different ones.	
AUGUST	21	PART B- SUBJECT SPECIFIC SKILLS UNIT4- DATA SCIENCES SUB UNIT- Introduction	- Students will be able to revise the concept of AI Domain- data, and the game Rock-paper scissor based on this domain - Student will be able to understand the applications of Data science in day to day	Session: Introduction to Data Science	Understanding Problem Solving Identifying Critical Thinking
				Session: Applications of Data Science	
				Session: Revisiting AI Project Cycle	
		UNIT4- DATA SCIENCES SUB UNIT Concepts of Data Sciences	- Students will learn three types of data- CSV, Spreadsheet, SQL - Students will be able to learn about the python packages NumPy, Pandas, Matplotlib - Students will be able to learn about drawing various types of charts with the help of Matplotlib	Session: Python for Data Sciences	Understanding Problem Solving Computational Thinking Critical Thinking
				Session: Statistical Learning & Data Visualisation	
		UNIT4- DATA SCIENCES SUB UNIT K-nearest neighbour model	Students will be able to learn K-nearest neighbour model to solve classification and regression problems	Activity: Personality Prediction Session: Understanding K-nearest neighbour model	Understanding Problem Solving Identifying Critical Thinking
SEPTEMBER	19	PART B- SUBJECT SPECIFIC SKILLS Unit 5: Computer Vision	Students will be able learn the applications of Computer vision in day to day life	Session: Introduction to Computer Vision	Understanding Analysing
				Session: Applications of CV	

		PART B- SUBJECT SPECIFIC SKILLS Unit 5: Computer Vision Sub Unit:- Concepts of Computer Vision	Students will be able to understand the concept of pixels, grayscale image, RGB images	Session & Activity: Understanding CV Concepts • Pixels • How do computers see images? • Image Features Activity:- Go to the link www.piskelapp.com and create your own pixel art. Try and make a GIF using the online app for your own pixel art	• Problem Solving • Identifying • Critical Thinking
			Students will learn Python Library OpenCV	Session: Introduction to OpenCV Practical :- Google Colab Hands-on: Image Processing	
			Student will be able to understand that An (image) convolution is simply an element-wise multiplication of image arrays and another array called the kernel followed by sum	Session: Understanding Convolution operator Activity: Convolution Operator	
			Students will be able to understand that a Convolutional Neural Network (CNN) is a Deep Learning algorithm which can take in an input image, assign importance (learnable weights and biases) to various aspects/objects in the image and be able to differentiate one from the other.	Session: Introduction to CNN Session: Understanding CNN • Kernel, Layers of CNN Activity: Testing CNN Student will open this link http://scs.ryerson.ca/~aharley/vis/conv/flat.html and classify different numbers, and analyse the different layers	
SEPTEMBER 19		PART B- SUBJECT SPECIFIC SKILLS Unit 6: NLP Sub Unit:- Introduction	Students will revise the concepts of NLP with the help of Mystery Animal Game and will learn the applications of NLP in day to day life	Session: Introduction to Natural Language Processing	• Understanding • Analysing • Problem Solving • Identifying • Critical Thinking
				Session: NLP Applications	
				Session: Revisiting AI Project Cycle	
		Unit 6: NLP Sub Unit:- Chatbots	Students will be able to understand that how chatbots works	Activity: Introduction to Chatbots Students will explore different chatbots e.g. Mitsuku Bot*, Ochatbot*, Rose, Haptik* etc.	
		Unit 6: NLP Sub Unit:- Language Differences	Students will be able to understand that What are the possible difficulties a machine would face in processing natural language	Session: Human Language VS Computer Language	
		Unit 6: NLP Sub Unit:-	Student will understand the Text Normalisation	Hands-on: Text processing • Data Processing	

		Concepts of Natural Language Processing	Sentence Segmentation Tokenisation Removing Stopwords, Special Characters and Numbers	● Bag of Words ● TFIDF ● NLTK	
		Part A:- Employability Skills Self Management Skills	Apply stress management techniques Demonstrate the ability to work independently	• Guided Discussion • Power point presentation Notes, Assignments and Pen and Paper Test Preparing a write-up on an essay on experiences during a holiday trip	Understanding Analysing Identifying
OCTOBER	20	PART B SUBJECT SPECIFIC SKILLS - UNIT 7:- EVALUATION: SUB-UNIT Introduction	Students will be able to learn about what is evaluation and model evaluation techniques.	Session: Introduction to Model Evaluation	● Understanding ● Analysing ● Problem Solving ● Identifying ● Critical Thinking
		UNIT 7:- EVALUATION: SUB-UNIT Confusion Matrix	Students will be able to understand that Confusion Matrix is where the result of comparison between the prediction and reality can be recorded	Session & Activity: Confusion Matrix	
		UNIT 7:- SUB-UNIT Evaluation Score Calculation	Students will be able to learn the evaluation methods like accuracy, Precision and recall	Session: Understanding Accuracy, Precision, Recall & F1 Score Activity: Practice Evaluation	
		PART A- Unit 4: Entrepreneurial Skills-II	List the characteristics of successful entrepreneur	● Powerpoint presentations ● Notes & Assignment ● Pen and Paper Test ● Online Quiz ACTIVITIES 1. Writing a note on entrepreneurship as a career option 2. Collecting success stories of first generation and local entrepreneurs 3. Listing the entrepreneurial qualities analysis of strength and weaknesses 4. Group discussion of self-qualities that students feel are needed to become successful entrepreneur	● Understanding ● Analysing ● Problem Solving ● Identifying ● Critical Thinking
OCTOBER	20	PART A- Unit 5: Green Skills-	Demonstrate the knowledge of importance, problems and solutions related to sustainable development	● Power-point presentations ● Notes & Assignment ● Pen and Paper Test & Online Quiz	● Understanding ● Analysing

		II		ACTIVITIES 1. Identify the problem related to sustainable development in the community 2. Group discussion on the importance of respecting and conserving indigenous knowledge and cultural heritage	• Problem Solving • Identifying • Critical Thinking
NOVEMBER	17	PART A- Unit 1: Communication Skills- II Unit 2: Self Management Skills-II	• Demonstrate knowledge of various methods of communication • Provide descriptive and specific feedback • Apply measures to overcome barriers in communication • Apply principles of communication • Demonstrate basic writing skills	• Powerpoint presentations • Notes & Assignment • Pen and Paper Test & Online Quiz	• Understanding • Analysing • Problem Solving • Identifying • Critical Thinking
		PART A- Unit 3: Basic ICT Skills- II	Distinguish between different operating systems Apply basic skills for care and maintenance of computer	• Powerpoint presentations • Demonstration • Notes • Assignment • Pen and Paper Test • Online Quiz	• Understanding • Analysing • Problem Solving • Identifying • Critical Thinking
DECEMBER	20	REVISION	The students will be able to: • Recapitulate their learning. • Produce their learning in the form of written and oral assessment. • Reflect upon their interpretation skills. • Reflect upon their writing and learning skills.	• Guided Discussion. • Problem solving based learning • Peer teaching	• Reflective thinking. • Collaborating Learning • Critical thinking • Problem solving
JANUARY	17	REVISION			
FEBRUARY	21	REVISION			

PT 1	PT1 exam for Chapter Part B-Unit 1 (Introduction to Artificial Intelligence (AI), Unit 3 (Advance Python) Pen and paper -1 Multiple Assessment-1 Port Folio -1
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	Subject Enrichment-1
MID TERM	Theory:-Midterm exam for 50 marks Chapters :- Part B- Unit 1 (Introduction to Artificial Intelligence (AI), Unit 2 (AI Project Cycle) Practical:-Midterm exam for 50 marks (Practical)Chapters :- Part B- Unit 3 (Advance Python)
PT 2	Theory- Chapters:- Part B- Unit 2 Pen and paper -2 Multiple Assessment-2 Port Folio -2 Subject Enrichment-2
PRE- BOARD 1	100% syllabus for 50 marks.
PRE- BOARD 2	100% syllabus for 50 marks.

Portfolio: A-3 File consist of 20 Composition with water/poster colour

PORTFOLIO ASSESSMENT FOR FINE ARTS MAY BE DONE ON THE BASIS OF FOLLOWING CRITERIA

Creativity, Innovation, Technique, Experimentation, Progressive Work, Skills,

Logical organization and collection of creations.

Critical evaluation and aesthetic judgment applied.

Painting (049)

MONTH	NO. OF DAYS	COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING METHOD
April	17	UNIT- I: Fundamentals of Visual Arts (The Elements & Principal of Arts)	To enable the students to • encounter with history of human's civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self--expression, and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation, and applications kills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment
May	17	UNIT- I: Fundamentals of Visual Arts (The Elements & Principal of Arts)	To enable the students to • encounter with history of human's civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self--expression, and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation, and applications kills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment

July	21	UNIT-II: Methods and Materials of Painting Understanding and appropriate use of: Tools,	To enable the students to - encounter with history of human's civilization' growth through Art and culture. - the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self--expression, and visual awareness through painting. - Feel confident with the chosen medium as a means of communicating and generating ideas. - Develop observation, recording, manipulation, and applications kills. - Experiment with a range of media and techniques. - Relate their work to other artists work and understand the historical context of this work. - Understand the basic principles of colour. - Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment
August	21	UNIT-II: Methods and Materials of Painting Understanding and appropriate use of: Painting Materials - Poster Colours, Water Colours, Oil Pastels and Pencils	To enable the students to - encounter with history of human's civilization' growth through Art and culture. - the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self--expression, and visual awareness through painting. - Feel confident with the chosen medium as a means of communicating and generating ideas. - Develop observation, recording, manipulation, and applications kills. - Experiment with a range of media and techniques. - Relate their work to other artists work and understand the historical context of this work. - Understand the basic principles of colour. - Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment
September	19	UNIT-III: Story of Indian Art Appreciation of Indian Art covering selected paintings, sculptures and architectural glimpses: Paintings: (i) Wizard's Dance (Bhimbetka)	To enable the students to - encounter with history of human's civilization' growth through Art and culture. - the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self--expression, and visual awareness through painting. - Feel confident with the chosen medium as a means of communicating and generating ideas. - Develop observation, recording, manipulation, and applications kills. - Experiment with a range of media and techniques. - Relate their work to other artists work and understand the historical context of this work. - Understand the basic principles of colour. - Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment

October	20	Sculptures: (ii) Yaksha – Yakshi (by Ramkinker Vaij) Architecture: (i) Sun Temple (Konark, Odisha)	To enable the students to • encounter with history of human’s civilization’ growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self-- expression, and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation, and applications kills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment
November	17	(iii) Indian Folk Art – Paintings (Floor decoration) Alpana, Rangoli and Mandala	To enable the students to • encounter with history of human’s civilization’ growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self-- expression, and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation, and applications kills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment
December	20	Pre-Board	To enable the students to • encounter with history of human’s civilization’ growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self-- expression, and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation, and applications kills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment

January	17	Pre-Board	To enable the students to • encounter with history of human's civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self--expression, and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation, and applications kills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment
February	21	Revision: Unit 1.2.3	To enable the students to • encounter with history of human's civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	Discover their potential for creativity, self--expression, and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation, and applications kills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peer teaching. Self-assessment
PRE-MID TERM	Theory: - "Element of Art & Principal of Art" Notebook (5marks), Subject enrich (5 marks), Multiple Assessment (5 marks) (20 marks)				
MID TERM	Theory: - "UNIT -1 & UNIT -2" Practical (30 marks)				
POST MID TERM	Theory: - "UNIT 3" Notebook (5marks), Subject enrich (5 marks), Multiple Assessment (5 marks) (20 marks)				
Pre-Board Syllabus	Practical Theory: - UNIT 1: "Element of Art & Principal of Art" UNIT 2: "Tools and Medium of Art" UNIT 3: "Indian Artists & Architecture" (70 marks) (30 marks)				

ART

Class X

LEARNING OBJECTIVES: To enrich students with various aspects of modern as well as traditional art.

VALUES TO BE INCULCATED: To foster the spirit of peace and harmony, celebrate festivals through art, develop love for animals and birds through art and craft.

Month	No. of Working Days	Course Content
April	17	Composition based on nature such as landscapes, seascapes, compositions to show seasons, moods of nature etc. from life or from imagination, Canvas Painting
May	17	Still life with Poster/Water Colours, Canvas Painting
July	21	Figurative and abstract compositions from imagination, Canvas Painting
August	21	Landscape with mixed media and water/poster Colours, Canvas Painting
September	19	Learn from Masters, Canvas Painting
October	20	Canvas Painting
November	17	Composition on Indian festivals, Compositions based on folk painting style of India.
December	20	Portraits and Canvas Painting
January	17	Poster design on social theme, Canvas Painting
February	21	Folk on National Integration
March	18	Composition
Mid-Term		Assessment: Art File and Canvas
Annual Examination		Assessment: Art File and Canvas

Computer Science
Class X

LEARNING OBJECTIVES:

- a) To develop basic computational thinking
- b) To appreciate the notion of algorithm
- c) To learn Python Programming Language and make real life application based project

Month	No. of Working Days	Course Content
April	17	Introduction to Problem-solving: Steps for Problem-solving (Analyzing the problem, developing an algorithm, representation of algorithms using flowchart. Introduction to Python, Features of Python, History of Python
May	17	Familiarization with the basics of Python programming: executing a simple “hello world” program, execution modes: interactive mode and script mode, Variables in Python, input (), eval(), int() and float()
July	21	Operators: arithmetic operators
August	21	Python data type- Lists Introduction- initialization and input list using eval() List indexing (positive and negative), list operations (concatenation +, repetition*)
September	19	Built-in functions/methods –len (), min(), max(), sum(), sort(), count()
October	20	Data Visualization using matplotlib - Line chart
November	17	Data Visualization using matplotlib -bar chart
December	20	Revision of python lists
January	17	Revision of data visualization
February	21	Board Exams
Assessment		Assessment will be on the basis of programs and project assigned.

Music

Class X

LEARNING OBJECTIVES: To enrich students with various aspects of modern as well as traditional music.

VALUES TO BE INCULCATED: To foster the spirit of peace and harmony, celebrate festivals through music, develop love for every one and for our society especially through real music.

Month	No. of Working Days	Course Content
April	17	Satrarambh song, prayers,songs& National Anthem
May	17	Community songs, Tagore song, National Song&Prayers
July	21	Patriotic songs, Prayers, National Anthem,etc.
August	21	Independence day song,Prayers, National anthem,etc.
September	19	Janmashtami song,Gandhi jayanti song, Prayers & Anthem.
October	20	Community songs, patriotic songs, prayers & Anthem.
November	17	Annual day, patriotic songs, prayers & Anthem.
December	20	Christmas song,community songs, prayers & Anthem,
January	17	Basant panchami song,Community songs, patriotic songs, prayers & Anthem
February	21	Community songs, patriotic songs, prayers &Anthem
Mid-Term	18	Assessment: Participation in various school functions.
Annual Examination		Assessment: Participation in school events

General Knowledge

- GK paper will be held only during Midterm and Final exams.
- The maximum marks for this paper will be of 50 marks and duration 60 minutes.
- The question paper of GK should **not** be in the form of a worksheet.
- It should have the following break-up:

SECTION	A	B	C	D	E
CONTENT	General Awareness	Current Affairs	Mental Aptitude	Safety Norms	Comprehension
No. of Questions	10	10	10	10	10
Marks	10	10	10	10	10

- Current Affairs will be covered from the 2 months prior to the GK exam. Midterm (August) and for Final (February).

DANCE

Month	No. of Working Days	Course content
April	18	Shiva Gaurishloka chanting. Body oriented exercise. Revision of classical and folk steps.
May	14	Some contemporary steps. Holiday homework (theory)
July	23	Checking of holiday homework (theory). Some more contemporary steps.
August	23	A contemporary dance.
September	21	Dance complete. Selection of annual day.
October	21	Annual day preparation going on.
November	19	(a) Practice of annual day. (b) Theory about annual day.
December	22	(a) A folk dance. (b) Show some dance video
January	15	(a) Folk dance complete. (b) Taal putting on hand.
February	23	(a) Revision of all. (b) Theory about dance.
Syllabus	Mid Term	Grading to be done on the basis of attendance in class performance, participation in school events in Term 1.
	Annual Exam	Grading to be done on the basis of attendance in class performance, participation in school events in Term 2.

INSTRUMENTAL MUSIC

LEARNING OBJECTIVES:-

1. To create proper sense of swarasandlayas through talabadhalankars.
2. Tuning and playing musical instruments: Sitar, Sarod, Violin, Flute, Tabla, Guitar, Harmonium, Tanpura.

Month	No. of Working Days	Course content
April	18	1. Description of basic Indian raga - YAMAN - BHUPALI / Hansdhwani
May	14	1. Description of basic taal/few kayda a on Tabla - Teen tal Thika and its variation - Jhaptal
July	23	Bandish and some taans on raga yaman on teen taal.
August	23	One orchestra composition.
September	21	Structure of orchestra and application of different instruments in an orchestra. raga 'kirwani
October	21	One project on Indian classical music and viva test. Selection of orchestra composition for annual day and starting practice on that composition.
November	19	Practice for annual day orchestra.
December	22	One raga based bhajhan (Raghu pati raghav or vaishnavjanato). fusion composition.
January	15	One patriotic song on different instruments (national anthem or sarejhanha se achha).