

MAHARAJA AGRASEN MODEL SCHOOL

Syllabus Plan (Session 2024-25)

Class X

ENGLISH(184)

LANGUAGE AND LITERATURE

Learning Objectives:

At this stage, learners are expected to:

- a) develop an understanding of what they hear in formal and informal settings.
- b) develop the ability to speak fluently and accurately in a variety of situations meaningfully.
- c) understand the verbal and non-verbal cues used by the speaker.
- d) develop an ability to read with comprehension and not merely decode.

Learning Outcomes at the Secondary Stage:

- a) develop an ability to construct meaning by drawing inferences and relating the texts with previous knowledge.
- b) develop the ability to express their thoughts effortlessly, confidently and in an organised manner
- c) write a coherent piece, undergoing various stages and processes of writing.
- d) develop imagination, creativity, aesthetic sensibility, and appreciation.
- e) understand the overarching values embedded in the Indian constitution like equality, social justice, equity, and scientific temper; imbibe values and apply.
- f) respond to contemporary social concerns like violence against women, protection of environment, etc., and think critically about various issues and concerns.
- g) use language as a skill for real life purposes.
- h) attain a level of proficiency in English language to meet the workplace requirements.
- i) recognise and accept diversity in terms of language and culture

- j) be sensitive to people in difficult circumstances, such as children with special needs, elderly people, etc.
- k) realise the uniqueness of Indian culture, heritage and its contribution to world knowledge.
- l) develop a global perspective on various issues through literature, ICT, media, etc.
- m) develop multilingual competence through using multilingualism as a strategy for learning of languages and subjects.
- n) develop grammatical competencies, moving from procedural knowledge (from use or meaning) to declarative knowledge

Objectives of Assessment for Listening Skill

To enable learners :

- a) understand a range of genres and contexts of spoken English, including academic, personal, and social aspects.
- b) understand detailed information for a purpose.
- c) understand and interpret a range of features of the given context.
- d) understand the topic and the main points and also distinguish the main points from the details.

Objectives of Assessment for Speaking Skill

To enable the learners :

- a) express and respond to personal feelings and opinions.
- b) present oral reports or summaries; narrate incidents or events.
- c) present, adopt different strategies to convey ideas according to purpose, topic and audience, and to frame questions so as to elicit desired response.
- d) take part in group discussions, summaries ideas, elicit views of others, express and argue a point of view clearly.
- e) participate in spontaneous spoken courses.

TEXTBOOKS

1) LITERATURE READER - FIRST FLIGHT

<https://ncert.nic.in/textbook.php?jeff1=0-9>

2) SUPPLEMENTARY READER - FOOTPRINTS WITHOUT FEET

<https://ncert.nic.in/textbook.php?jefp1=0-9>

3) WORDS AND EXPRESSIONS - WORKBOOK

<https://ncert.nic.in/textbook.php?jewe2=0-9>

MONTH WISE SYLLABUS BREAKUP

APRIL:

First Flight-A Letter to God.
Footprints without Feet- A Triumph of Surgery
First flight- Dust of Snow (Poem), Fire and Ice
Letter to the Editor
Letter of Complaint(OFFICIAL and BUSINESS)
Tenses (Grammar)
Words and Expressions: Unit 1&2

PERIODIC TEST-1

APRIL 1, 2024 Onwards

First Flight- Nelson Mandela: A long walk to freedom
A Tiger in the Zoo (Poem)
Subject Verb Concord(Grammar)
Formal Letter
-Letter Placing an Order
-Letter of Enquiry
Words and Expressions: Unit 3, 4 & 7

PERIODIC TEST-2 MAY 20, 2024 onwards

JULY

Footprints without Feet-The Midnight Visitor
Footprints without Feet- The Thief's Story
Footprints without Feet-Footprints Without Feet
Modals(Grammar)
First Flight- The Ball Poem(Poem)
First Flight-How to tell Wild Animals(Poem)
First Flight-Two Stories about Flying (First Flight &Black Aeroplane)

Words and Expressions: Unit 8 & 9

AUGUST

PERIODIC TEST-3 AUGUST 27, 2024 onwards

Integrated Grammar

Reported Speech(Grammar)

First Flight- From The Diary of Anne Frank

First Flight-The Trees(Poem)

Amanda-Poem

Footprints without Feet-A Question of Trust Analytical Paragraph (based on outline/chart/cue/map/report)

SEPTEMBER

First Flight -Glimpses of India

First Flight -The Sermon of Benaras

Words and Expressions: Unit 10 & 11

Revision

MID-TERM EXAMINATIONS BEGIN FROM SEPTEMBER 9, 2024 ONWARDS

OCTOBER

First Flight-For Anne Gregory(Poem)

First Flight-Mijbil the Otter

First Flight-Fog

Footprints without Feet-Bholi

Footprints without Feet- The Making of a Scientist

NOVEMBER

First Flight-Madam Rides the Bus

Footprints without Feet-The Necklace

First Flight-Glimpses of India

First Flight -The Proposal

First Flight-The Tale of Custard the Dragon

PRE-BOARD-1 STARTS FROM NOV 18, 2024 ONWARDS

DECEMBER

Footprints without Feet-The Book that saved the Earth

PRE BOARD-2 DECEMBER 23, 2024 ONWARDS

JANUARY

Revision

FEBRUARY:

•**Revision for Annual Examination**

•**Problem Solving Sessions**

MARCH: Annual Examination

SYLLABUS FOR PERIODIC TEST 1

Reading comprehension

First Flight-A Letter to God

First Flight-Dust of Snow

Tenses

SYLLABUS FOR PERIODIC TEST 2

COMPREHENSION PASSAGE

Letter to the Editor

Complaint Letter

Subject Verb Concord

First flight- First Flight- Nelson Mandela: A long walk to freedom

A Tiger in the Zoo (Poem)

Fire and Ice (Poem)

Footprints without feet- A Thief's Story

SYLLABUS FOR PERIODIC TEST -3

COMPREHENSION PASSAGE

Analytical Paragraph

Subject Verb Concord

First Flight- The Ball Poem(Poem)

First Flight-Two Stories about Flying (First Flight &Black Aeroplane)

Footprints without Feet-The Midnight Visitor

MID-TERM EXAMINATIONS BEGIN FROM AUGUST 22,2022

SYLLABUS FOR MID-TERM:

The entire syllabus covered in Term-1 will be tested in Mid Term Exams

PRE BOARD -1

The entire syllabus covered till November will be tested in Pre-board Exams

COMPLETE SYLLABUS will be tested in PRE-BOARD II

हिंदी कोर्स - बी (कोड - 085)

शिक्षण उद्देश्य

- दैनिक जीवन में हिंदी में समझने-बोलने के साथ-साथ लिखने की क्षमता का विकास ।
- औपचारिक विषयों और सन्दर्भों में बातचीत में भाग ले पाने की क्षमता का विकास ।
- संचार के विभिन्न माध्यमों (प्रिंट और इलेक्ट्रॉनिक) में प्रयुक्त हिंदी के विभिन्न रूपों को समझने की योग्यता का विकास ।
- कक्षा में बहुभाषिक, बहुसांस्कृतिक सन्दर्भों के प्रति संवेदनशील सकारात्मक सोच बनाना ।
- अपनी मातृभाषा और परिवेशगत भाषा को साथ रखकर हिंदी की संरचनाओं की समझ बनाना ।
- सामाजिक मुद्दों पर समझ बनाना । (जाति, लिंग तथा आर्थिक विषमता)
- कविता, कहानी तथा घटनाओं को रोचक ढंग से लिखना ।
- मौखिक एवं लिखित अभिव्यक्ति का विकास

पाठ्यपुस्तकें :-

स्पर्श भाग 2 – एन.सी.ई.आर.टी

संचयन भाग 2 – एन.सी.ई.आर.टी

व्याकरण प्रवेशक - कक्षा X (कोर्स बी) - गीता पब्लिकेशन

अभ्यास हेतु अतिरिक्त पुस्तकें :-

1. Together with हिंदी - बी , Class X, Vimal Sharma, Rachna Sagar Pvt. Ltd.

2. U-Like - मॉडल टेस्ट पेपर्स (अभ्यास कार्य प्रपत्र)

स्पर्श भाग 2 – एन.सी.ई.आर.टी: (लिंक: <https://ncert.nic.in/textbook.php?jhsp1=0-17>)

संचयन भाग 2 – एन.सी.ई.आर.टी (लिंक: <https://ncert.nic.in/textbook.php?jhsy1=0-3>)

सी. बी. एस. ई. पाठ्यक्रम लिंक
(http://cbseacademic.nic.in/web_material/CurriculumMain22/Sec/Hindi_B_Sec_2021-22.pdf)

महीना	पाठ्यपुस्तक	व्याकरण
अप्रैल तथा मई	स्पर्श - गद्य बड़े भाई साहब डायरी का एक पन्ना स्पर्श - पद्य कबीर (साखी) संचयन हरिहर काका	पदबंध, अपठित गद्यांश, औपचारिक पत्र, अनुच्छेद, मुहावरे विज्ञापन लेखन
जुलाई	स्पर्श - गद्य ततारा वामीरो कथा तीसरी कसम के शिल्पकार - शैलेन्द्र स्पर्श - पद्य मीरा के पद मनुष्यता	औपचारिक पत्र, अनुच्छेद, समास, मुहावरे, सूचना लेखन एवं लघु कथा लेखन
अगस्त	स्पर्श - पद्य अब कहाँ दूसरों के दुख में दुखी होने वाले पर्वत प्रदेश में पावस संचयन सपनों के से दिन	मुहावरे, समास, रचना के आधार पर वाक्य रूपान्तरण एवं लघु कथा लेखन
सितम्बर	स्पर्श - गद्य अब कहाँ दूसरों के दुख में दुखी होने वाले स्पर्श - पद्य तोप	मुहावरे, रचना के आधार पर वाक्य रूपान्तरण एवं ई मेल लेखन
अक्टूबर	स्पर्श - पद्य कर चले हम फ़िदा आत्मत्राण स्पर्श - गद्य पतझर में टूटी पत्तियाँ	अभ्यास कार्य - समास, विज्ञापन लेखन, ई - मेल लेखन
नवंबर	संचयन टोपी शुक्ला स्पर्श - गद्य कारतूस	मुहावरे, सूचना लेखन, लघु कथा लेखन, पदबंध अभ्यास
दिसंबर	पुनरावृत्ति - पूर्ण पाठ्यक्रम	

जनवरी - फरवरी	पूर्व परिषद् परीक्षा तथा पुनरावृत्ति
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परीक्षा पाठ्यक्रम

परीक्षा	पाठ्यपुस्तक	व्याकरण
सामयिक परीक्षा - 1	स्पर्श - गद्य बड़े भाई साहब कबीर (साखी)	अपठित गद्यांश पदबंध , विज्ञापन, मुहावरे
सामयिक परीक्षा - 2	स्पर्श - गद्य स्पर्श - पद्य संचयन तताँरा वामीरो कथा मीरा के पद हरिहर काका	अपठित गद्यांश पदबंध, समास, मुहावरे औपचारिक पत्र एवं सूचना लेखन

परीक्षा	पाठ्यपुस्तक		व्याकरण
अर्धवार्षिक परीक्षा	स्पर्श - गद्य	बड़े भाई साहब ततार्रा वामीरो कथा तीसरी कसम के शिल्पकार - शैलेन्द्र	अपठित गद्यांश पदबंध, मुहावरे, समास , वाक्य रूपांतरण
	स्पर्श - पद्य	कबीर (साखी) मीरा के पद मनुष्यता पर्वत प्रदेश मे पावस	औपचारिक पत्र लेखन अनुच्छेद लेखन लघु कथा लेखन विज्ञापन
	संचयन	हरिहर काका सपनों के से दिन	सूचना ई मेल लेखन
सामयिक परीक्षा - 3	स्पर्श - गद्य	अब कहाँ दूसरों के दुख में दुखी होने वाले	अपठित गद्यांश मुहावरे, वाक्य रूपांतरण, अनुच्छेद, सूचना ई मेल लेखन
	स्पर्श - पद्य	पर्वत प्रदेश में पावस एवं तोप	
	संचयन	सपनों के से दिन	
वार्षिक परीक्षा	सम्पूर्ण पाठ्यक्रम		

संस्कृत (119)

पाठ्यक्रम (Monthwise)

संस्कृत भाषा शिक्षण के उद्देश्य

- भाषा कौशल का विकास
- नैतिक मूल्यों का विकास
- संस्कृत भाषा तथा उसके साहित्य का संरक्षण करना
- संस्कृत भाषा को पढ़ने के लिए प्रोत्साहित करना तथा उसका विकास करना

पाठ्यपुस्तक - मणिका- २ (NCERT)

अभ्यासवान् पुस्तकम् २ (NCERT)

अभ्यास हेतु अतिरिक्त पुस्तकें

1. Together with Sanskrit (Rachna Sagar)
2. U-Like - मॉडल टेस्ट पेपर्स (अभ्यास कार्य प्रपत्र)
3. Full Marks Sanskrit (Full Circle Education)

<https://ncert.nic.in/textbook.php>

http://www.cbseacademic.nic.in/Revisedcurriculum_2021.html

अप्रैल

मणिका भाग-२

- पाठ -१ वाडंमयं तपः
- पाठ -२ आज्ञा गुरुणाम् हि अविचारणीया

अभ्यास पुस्तकम् २

- चित्रवर्णन
- संधि
- प्रत्यय

मई

मणिका भाग-२

- पाठ ३ -
- पाठ -४ -

अभ्यासवान् भव-२

- प्रत्यय

- वाच्य
- समास

जुलाई

मणिका भाग-२

- पाठ -५ जननी तुल्यवत्सला
- पाठ-६ सुभाषितानि

अभ्यासवान् भव-२

- समास
- प्रत्यय
- पत्रलेखनम्
- चित्रवर्णनम्

अगस्त

- पाठ-५,६ पुनरावृत्ति
- प्रत्यय, समास, वाच्य, अव्यय, समय(पुनरावृत्ति)
- पत्रलेखनम्, अशुद्धि संशोधनम्, अनुवाद
- पाठ -७ सौहार्द प्रकृतेःशोभा

सितंबर

- पाठ -८- विचित्र साक्षी
- समास
- अशुद्धि संशोधनम्, अनुवाद, चित्रवर्णनम्

अक्टूबर

- पाठ- 9 सूक्तयः
- समास, संधिः
- अनुवाद, अपठित गद्यांश

नवंबर

- चित्रवर्णनम्, पत्रलेखनम्, अशुद्धि संशोधनम्, अनुवाद
- प्रत्यय, समास, वाच्य, अव्यय, समय, संधिः

दिसंबर

पुनरावृत्ति-

- पत्रलेखनम्
- चित्रवर्णनम्
- अनुवाद, अपठित गद्यांश
- अशुद्धि संशोधनम्

जनवरी

पूर्व परिषद् परीक्षा-

फरवरी

पाठ्यक्रम पुनरावृत्ति

सोमवार परीक्षा 1 -

मणिका भाग-२

- पाठ -१ शुचिपर्यावरणम्
- पाठ -२ बुद्धिर्बलवती सदा

अभ्यासवान् भव-२

- प्रत्यय
- वाच्य
- समास
- समयः
- अव्यय

पत्रलेखनम् , अपठित गद्यांश

सोमवार परीक्षा- 2

मणिका भाग-२

- पाठ -५ जननी तुल्यवत्सला
- पाठ-६ सुभाषितानि

अभ्यासवान् भव-२

- प्रत्यय
- वाच्य
- समास
- समयः
- अव्यय

पत्रलेखनम् , अपठित गद्यांश

सोमवार परीक्षा- 3

मणिका भाग-२

- पाठ -7 सौहार्द प्रकृतेःशोभा
- पाठ -8- विचित्र साक्षी

अभ्यासपुस्तकम् २

- प्रत्यय
- वाच्य
- समास
- समयः
- अव्यय
- संधि, अपठित गद्यांश , चित्रवर्णनम्

वार्षिकं मूल्यांकनम्

क खंडः

1 अपठित-अवबोधनम्-10 अंकाः

ख खंडः

रचनात्मकं कार्यम्-15 अंकाः

2 पत्र लेखनम्-5

3 चित्र वर्णन-5

4 संवादपूर्ति -5

ग खंड:-

अनुप्रयुक्तव्याकरणम्-25 अंकाः

5 संधि कार्यम्-4अंकाः

6-समासः -4अंकाः

7 -प्रत्ययाः--4अंकाः

8 -वाच्यपरिवर्तनम् -3अंकाः

9 -समयः --4- अंकाः

10-अव्ययपदानि--3अंकाः

11-संशोधनकार्यम्- -3अंकाः

घ खंडः

पठितअवबोधनम्- 30 अंकाः

12-गद्यांशः- 5अंकाः

13- पद्यांशः- 5अंकाः

14- नाट्यांशः- 5अंकाः

15- प्रश्ननिर्माणम्- -4अंकाः

16- अन्वयः- -4अंकाः

17-घटनाक्रमानुसारं वाक्यलेखनम्- -4अंकाः

18- पर्यायपदानां विलोमपदानां वा मेलनम्- -3अंकाः

सम्पूर्णभारः 80

MATHEMATICS (041,241)

OBJECTIVES:

The broad objectives of teaching of Mathematics at secondary stage are to help the learners:

- Consolidate the Mathematical knowledge and skills acquired at the upper primary stage.
- Acquire knowledge and understanding, particularly by way of motivation and visualization of basic concepts ,terms, principles and symbols and underlying processes and skills.
- Develop mastery of basic algebraic skills.
- Develop drawing skills.
- Feel the flow of reason while proving and solving a problem
- Apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.
- Develop a positive ability to think ,analyze and articulate logically.
- Develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of gender biases.
- Develop necessary skills to work with modern technological devices such as calculators, computers, etc.
- Develop interest in mathematics as a problem-solving tool in various fields for its beautiful structures and patterns, etc.
- Develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.
- Develop interest in the subject by participating in related competitions.
- Acquaint students with different aspects of Mathematics used in daily life.
- Develop an interest in students to study Mathematics as a discipline.

TEXTBOOK:

NCERT Mathematics Textbook for Class X
<https://ncert.nic.in/textbook/pdf/jemh1cc.jpg>

REFERENCE BOOKS:

NCERT MATHEMATICS EXEMPLAR PROBLEMS CLASS X

E-REFERENCE :

1. http://www.cbseacademic.nic.in/curriculum_2022.html#collapse2
2. <https://ncert.nic.in/textbook.php>
3. Diksha app resource

APRIL

CHAPTER-3.Pair of Linear Equations in Two Variables

- Introduction of a pair of Linear Equations In two Variables
- Graphical Method of Solution of a Pair of Linear Equations
- Algebraic methods of Solving a Pair of Linear Equations.
- Summary

LEARNING OUTCOMES:

The student will be able to

- Solve the pair of linear equations by graphical and algebraic methods.
- Apply the concept of solving linear equations to solve real life situations.

Lab Activity 1

APRIL

CHAPTER -2 Polynomials

- Introduction
- Geometrical Meaning of the Zeroes of a Polynomial.
- Relationship between Zeroes and Coefficients of a Quadratic Polynomial.
- Summary

LEARNING OUTCOMES:

The students will be able to Find the zeroes of a given polynomial graphically and algebraically.

- Establish the relationship between the zeros of a quadratic polynomial and its coefficients.

MAY

CHAPTER 4-Quadratic Equations

- Introduction
- Quadratic Equations
- Solution of Quadratic Equation by Factorisation
- Solution of Quadratic Equation by quadratic formula.
- Simple problems based on equations reducible to quadratic form.
- Summary

LEARNING OUTCOMES:

The student will be able to solve the quadratic equation by different methods and apply in varied situations.

CHAPTER 1-Real Numbers

- Introduction
- The fundamental Theorem Of Arithmetic
- Revisiting Irrational Numbers
- Proofs of $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$
- Summary

LEARNING OUTCOMES:

The students will be able to

- Calculate HCF. & LCM using prime factorization.
- Use a contradiction method for proving a statement.
- Solve problems on division algorithms.
- Apply the H.C.F. & L.C.M. in real life situations.

Lab Activity 2

JULY

CHAPTER 6-Triangles

- Introduction
- Similar Figures
- Similarity Of Triangles
- Criteria for Similarity of Triangles
- Summary

LEARNING OUTCOMES:

The student will be able to

- Recall similar figures and identify them.
- Recognize various rules to show two triangles similar.

Lab Activity 3,4

CHAPTER 15-Probability

- Introduction
- Probability-A Theoretical Approach
- Summary

LEARNING OUTCOMES:

The student will be able to understand the concept of theoretical probability of different events.

Lab Activity 10

AUGUST

CHAPTER 8-Introduction to Trigonometry

- Introduction
- Trigonometric Ratios
- Trigonometric Ratios of Some Specific Angles
- Proofs of Trigonometric ratios at 0,30,45,60 and 90 degrees.
- Trigonometric Identities
- Summary

LEARNING OUTCOMES:

The student will be able to

- Appreciate the relationship between acute angle and ratio of sides of a right triangle.
- Acquainted with the concept of Trigonometric ratios & its Identities.

CHAPTER 12-Areas Related to Circles

- Introduction
- Perimeter and Area of Circle-A Review
- Areas of Sector and Segment of a Circle
- Areas of Combination of Plane Figures
- Summary

LEARNING OUTCOMES:

The student will be able to use the concept of area & perimeter of plane figures in given problems.

Lab Manual Activity 5

SEPTEMBER

Revision for Mid-Term Examination.

OCTOBER

CHAPTER 9-Some Applications of Trigonometry

- Introduction
- Heights and Distances
- Summary

LEARNING OUTCOMES:

The student will be able to

- Use the concept of trigonometric ratios & its identities to solve given problems.
- Apply the concept of trigonometry in finding heights & distances in day to day life

CHAPTER 5-Arithmetic Progressions

- Introduction of Arithmetic Progressions
- nth term of an AP
- Sum of n terms of an AP
- Summary

LEARNING OUTCOMES:

The student will be able to

- Understand the concept of sequence/patterns and A.P. as a special sequence.
- Use the concept of the nth term of an A.P. in solving problems.
- Find sum of n terms of an A.P. and apply in varied situations.

Lab Manual Activity 6

NOVEMBER

CHAPTER 7-Coordinate Geometry

- Introduction
- Distance Formula
- Section Formula.
- Summary

LEARNING OUTCOMES:

The student will be able to

- Familiarize themselves with the coordinate plane.
- Find the distance between two points.
- Find coordinates of a point given two points in a plane in a given ratio.
- Use the concepts in day to day life situations.

CHAPTER 14-STATISTICS

- Mean of Grouped Data
- Mode of Grouped Data

- Median of Grouped Data
- Empirical Relationship
- Summary

LEARNING OUTCOMES:

The student will be able to:

- Organize, represent & interpret the data by using mean and mode.
- Make graphical representation of data such as Ogive interpret median from it.
- Interpret and analyze given data by using Mean and Mode.

Lab Manual Activity 7

CHAPTER 10-Circles

- Introduction
- Tangent to a Circle
- Number of Tangents from a Point on a Circle
- Summary

LEARNING OUTCOMES:

The student will be able to use the concept of tangent to circles in solving given problems

Lab activity 8

DECEMBER

CHAPTER 13-Surface Area and Volumes

- Introduction
- Surface Area of a Combination of Solids
- Volume of a Combination of Solids
- Summary

LEARNING OUTCOMES:

The student will be able to

- Find the surface area & volume of a combination of solid figures.
- Apply the concept of volume of solid figures in new situations.

Lab Activity 9

JANUARY

Revision of whole syllabus

FEBRUARY

PRE BOARDS

EXAMWISE SYLLABUS BREAK UP:

PERIODIC TEST I:(APRIL)

1. CHAPTER-3 (Pair of Linear Equations in two variables)

PERIODIC TEST II:(July)

1. CHAPTER-2 (Polynomials)
2. CHAPTER-4 (Quadratic Equations)

MID TERM EXAMINATION:(SEPTEMBER)

1. CHAPTER-1 (Real Numbers)
2. CHAPTER-2 (Polynomials)
3. CHAPTER-3 (Pair of Linear Equations)
4. CHAPTER-8 (Introduction to Trigonometry)
5. CHAPTER-6 (Triangles)
6. CHAPTER-15(Probability)
7. CHAPTER- 13(Areas related to circles)
8. CHAPTER 4-Quadratic Equations

PERIODIC TEST III: (October)

1. CHAPTER-8 (Introduction to Trigonometry)

2. CHAPTER-6 (Triangles)

PRE-BOARD 1 EXAMINATION : (DECEMBER, 2024 onwards)

1. CHAPTER-1 (Real Numbers)
2. CHAPTER-2 (Polynomials)
3. CHAPTER-3 (Pair of Linear Equations)
4. CHAPTER-4 (Quadratic Equations)
5. CHAPTER-5 (Arithmetic Progression)
6. CHAPTER-6 (Triangles)
7. CHAPTER-7 (Coordinate Geometry)
8. CHAPTER-8 (Introduction to Trigonometry)
9. CHAPTER-9 (Application of Trigonometry)
10. CHAPTER-14(Statistics)
11. CHAPTER-15(Probability)
12. CHAPTER-10(Circles)
13. CHAPTER-12 Areas Related To Circles

PRE BOARD 2 EXAMINATION : (JANUARY, 2025 onwards)

THE ENTIRE SYLLABUS

BOARD EXAMINATION: (MARCH 2025, onwards)

THE ENTIRE SYLLABUS

SCIENCE (Code No. 086)

COURSE BOOK :

1. Science - Textbook for class X - NCERT Publication

NCERT

<https://ncert.nic.in/textbook.php?jesc1=0-13>

REFERENCE BOOKS

1. Xam Idea (Science)

Published by: VK Global Publications

2. Lakhmir Singh

By: Lakhmir Singh and Manjit Kaur

3. NCERT Exemplar

<https://ncert.nic.in/exemplar-problems.php?ln=en>

Science is a body of knowledge based on experiment, observation and inference, which is judgment based on evidence. Through science teaching, children are required to develop certain scientific ways of thinking as they work. The subject of science plays an important role in developing well-defined abilities in cognitive, affective and psychomotor domains in children. It augments the spirit of enquiry, creativity, objectivity and aesthetic sensibility

OBJECTIVES

Science teaching aims to realize the following general objectives. It enables the learners to

- know the facts and principles of science and its applications, consistent with the stage of cognitive development.
- acquire the skills and understand the methods and processes that lead to generation and validation of scientific knowledge.
- develop intellectual and practical scientific skills.
- motivate to apply basic scientific principles in all sciences.
- acquire knowledge about health, environment and safety practices and behave accordingly.

Learning Outcomes

The learner—

- differentiates materials, objects, organisms, phenomena, and processes, based on properties and characteristics.

- classifies materials, objects, organisms, phenomena, and processes, based on properties and characteristics.
- plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, or to seek answers.
- relates processes and phenomena with causes and effects, such as, hormones with their functions, tooth decay with pH of saliva, growth of plants with pH of the soil, survival of aquatic life with pH of water, blue colour of sky with scattering of light, deflection of compass needle due to magnetic effect of electric current, etc.
- explains processes and phenomena, such as, nutrition in human beings and plants, transportation in plants
- draws labeled diagrams, flow charts, concept maps, and graphs, such as, digestive, respiratory, circulatory, excretory, and reproductive system.

electrolysis of water, electron dot structure of atoms and molecules, flow chart for extraction of metals from ores, ray diagrams, magnetic field lines, etc.

- analysis and interprets data, graphs, and figures, such as, melting and boiling points of substances to differentiate between covalent and ionic compounds, pH of solutions to predict the nature of substances, V-I graphs, ray diagrams, etc.
- calculates using the data given, such as, number of atoms in reactants and products to balance a chemical equation, resistance of a system of resistors, power of a lens, electric power, etc.
- uses scientific conventions to represent units of various quantities, symbols, formulae, and equations, such as, balanced chemical equation by using symbols and physical states of substances, sign convention in optics, SI units, etc.
- handles tools and laboratory apparatus properly; measures physical quantities using appropriate apparatus, instruments,

and devices, such as, pH of substances using pH paper, electric current and potential difference using ammeter

- applies learning to hypothetical situations.
- applies scientific concepts in daily life and solving problems.
- derives formulae, equations, and laws, such as, equivalent resistance of resistors in series and parallel, etc.
- draws conclusion, such as, traits or features are inherited through genes present on chromosomes.
- exhibits values of honesty, objectivity, rational thinking, and freedom from myth and superstitious beliefs while taking decisions, respect for life, etc.
- communicates the findings and conclusions effectively, such as, those derived from experiments, activities, and projects orally and in written form using appropriate figures, tables, graphs, and digital forms, etc.
- makes efforts to conserve the environment.

UNIT-WISE DISTRIBUTION OF MARKS

COURSE STRUCTURE
CLASS X
(Annual Examination)

Marks: 80

Unit No.	Unit	Marks
I	Chemical Substances-Nature and Behaviour	25
II	World of Living	25
III	Natural Phenomena	12
IV	Effects of Current	13
V	Natural Resources	05
	Total	80
	Internal assessment	20
	Grand Total	100

MONTHWISE SYLLABUS BREAKUP

APRIL

PHYSICS

Chapter 11: Electricity

Electric current, potential difference, Electric current, Ohm's law, Resistance, Resistivity. Factors on which the resistance of a conductor depends.

CHEMISTRY

Chapter 1 : Chemical Reactions and Equations

Chemical reactions: Chemical equation, Balanced chemical equation, implications

of a balanced chemical equation, types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, neutralization, oxidation and reduction.

Practical

1. Performing and observing the following reactions and classifying them into: Combination reaction B. Decomposition reaction C. Displacement reaction D. Double displacement reaction (i) Action of water on quicklime (ii) Action of heat on ferrous sulphate crystals (iii) Iron nails kept in copper sulphate solution (iv) Reaction between sodium sulphate and barium chloride solutions

BIOLOGY

CHAPTER 5: LIFE PROCESSES

Life processes: 'Living Being'. Basic concept of nutrition in plants, Life processes: 'Living Being'. Basic concept of nutrition in animals, and respiration in plants and animals.

Practical

1. Preparing a temporary mount of a leaf peel to show stomata.

PHYSICS

Chapter 10 : Light - Reflection of Light and Refraction

Reflection of light at curved surfaces, Images formed by spherical mirrors, centre of curvature.

MAY

PHYSICS

Chapter 10 : Light - Reflection of Light and Refraction (Contd...)

Principal axis, principal focus, focal length. Mirror Formula (Derivation not required), Magnification. Reflection of light at curved surfaces, Images formed by spherical mirrors.

CHEMISTRY

Chapter 2 : Acids, Bases and Salts

Definitions of acids and bases in terms of furnishing of H^+ and OH^- ions, General properties, examples and uses, concept of pH scale (Definition relating to logarithm not required), importance of pH in everyday life; preparation and uses of Sodium Hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris.

Practical

1. Performing and observing the following reactions and classifying them into: Combination reaction B. Decomposition reaction C. Displacement reaction D. Double displacement reaction (i) Action of water on quicklime (ii) Action of heat on ferrous sulphate crystals (iii) Iron nails kept in copper sulphate solution (iv) Reaction between sodium sulphate and barium chloride solutions

BIOLOGY

CHAPTER 5 LIFE PROCESSES (contd...)

Life processes: 'Living Being'. Basic concept of transportation in plants and animals, Basic concept of excretion in plants and animals.

Practical

1. Preparing a temporary mount of a leaf peel to show stomata.

PHYSICS

Chapter 10 : Light - Reflection of Light and Refraction (Contd...)

Laws of refraction , refractive index. Refraction of light by spherical lens; Image formed by spherical lenses;

JULY

CHEMISTRY

Chapter 2 : Acids, Bases and Salts

(Contd..)

Chapter 3: Metals and Non-Metals

Properties of metals and non-metals; Reactivity series; Formation and properties of ionic compounds; Basic metallurgical processes; Corrosion and its prevention.

Practical

1. A. Finding the pH of the following samples by using pH paper/universal indicator: (i) Dilute Hydrochloric Acid (ii) Dilute NaOH solution (iii) Dilute Ethanoic Acid solution (iv) Lemon juice (v) Water (vi) Dilute Hydrogen Carbonate solution

B. Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with: a) Litmus solution (Blue/Red) b) Zinc metal c) Solid sodium carbonate

PHYSICS

Chapter 10 : Light - Reflection of Light and Refraction(contd.)

Lens formula (Derivation not required); Magnification.Power of a lens

BIOLOGY

CHAPTER 5 LIFE PROCESSES (contd...)

Life processes: 'Living Being'. Basic concept of excretion in plants and animals.

CHAPTER 6 CONTROL AND COORDINATION

Control and co-ordination in animals and plants: Tropic movements in plants; Introduction of plant hormones.

Practical

1. Preparing a temporary mount of a leaf peel to show stomata.

PHYSICS:

Chapter 11 The Human Eye and the Colourful World

Functioning of a lens in human eye, defects of vision and their corrections and applications of spherical mirrors and lenses. Refraction of light through a prism, dispersion of light.

Practical:

Determination of the focal length of i) Concave mirror ii) Convex lens by obtaining the image of a distant object.

AUGUST

CHEMISTRY

Chapter 3: Metals and Non-Metals (Continued)

Practical

2. A. Finding the pH of the following samples by using pH paper/universal indicator: (i) Dilute Hydrochloric Acid (ii) Dilute NaOH solution (iii) Dilute Ethanoic Acid solution (iv) Lemon juice (v) Water (vi) Dilute Hydrogen Carbonate solution

B. Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with a) Litmus solution (Blue/Red) b) Zinc metal c) Solid sodium carbonate

3. Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions: i) $ZnSO_4(aq)$ ii) $FeSO_4(aq)$ iii) $CuSO_4(aq)$ iv) $Al_2(SO_4)_3(aq)$
Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result.

BIOLOGY

CHAPTER 6 CONTROL AND COORDINATION (contd...)

Control and co-ordination in animals: Nervous system; Voluntary, involuntary and reflex action; Chemical co-ordination: animal hormones.

Practical

2. Experimentally show that carbon dioxide is given out during respiration.

PHYSICS

Chapter 11 The Human Eye and the Colourful World (contd...)

scattering of light, applications in daily life (excluding colour of the sun at sunrise and sunset).

Practical:(i)Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, angle of emergence and interpret the result.

(ii)Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, angle of emergence and interpret the result.

SEPTEMBER

CHEMISTRY

Chapter4: Carbon and its compounds

Covalent bonding in carbon compounds. Versatile nature of carbon. Homologous series. Nomenclature of carbon compounds containing functional groups (halogens, alcohol, ketones, aldehydes, alkanes and alkynes), difference between saturated hydrocarbons and unsaturated hydrocarbons. Chemical properties of carbon compounds (combustion, oxidation, addition and substitution reaction). Ethanol and Ethanoic acid (only properties and uses), soaps and detergents.

BIOLOGY

CHAPTER 7 HOW DO ORGANISMS REPRODUCE?

Reproduction: Reproduction in animals and plants (asexual and sexual), Sexual reproduction in animals.

Practical

3. Studying (a) binary fission in Amoeba, and (b) budding in yeast and Hydra with the help of prepared slides.

PHYSICS

Chapter 12 : Electricity

Electric current, potential difference, Electric current, Ohm's law, Resistance, Resistivity. Factors on which the resistance of a conductor depends.

Practical:(i)Tracing the path of the rays of light through a glass prism
(ii) Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determining its resistance. Also plotting a graph between V and I.

OCTOBER

CHEMISTRY

Chapter4: Carbon and its compounds (Continued)

Practical

4. Study of the following properties of acetic acid (ethanoic acid): Unit- I i) Odour ii) solubility in water iii) effect on litmus iv) reaction with Sodium Hydrogen Carbonate

BIOLOGY

CHAPTER 7 HOW DO ORGANISMS REPRODUCE? (contd...)

Reproductive health need and methods of family planning. Safe sex vs HIV/AIDS. Child bearing and women's health.

Practical

3. Studying (a) binary fission in Amoeba, and (b) budding in yeast and Hydra with the help of prepared slides.

PHYSICS

Chapter 12 : Electricity 9 (contd...)

Series combination of resistors, parallel combination of resistors and its applications in daily life, heating effect of current and its application in daily life. Electric power, inter-relation between P, V, I.

Practical

Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determine its resistance. Also plotting a graph between V and I.

NOVEMBER

CHEMISTRY

Chapter 4: Carbon and its compounds (Continued)

Practical

5. To study of the comparative cleaning capacity of a sample of soap in soft and hard water

BIOLOGY

CHAPTER 8 HEREDITY

Heredity: Heredity; Mendel's contribution- Laws for inheritance of traits: Sex determination: brief introduction.

Practical

4. Identification of the different parts of an embryo of a dicot seed (Pea, gram or red kidney bean).

PHYSICS

Chapter. 13: Magnetic effects of Current

Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's left hand rule.

Practical

Determination of the equivalent resistance of two resistors when connected in series .

DECEMBER

CHEMISTRY

Revision

Chapter. 13: Magnetic effects of Current contd...

Direct current. Alternating current: frequency of AC. Advantage of AC over DC. Domestic electric circuits.

Practical

Determination of the equivalent resistance of two resistors when connected in parallel.

BIOLOGY

CHAPTER 13 OUR ENVIRONMENT

Our environment: Eco-system, Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances.

Revision for Board Examination

JANUARY

Revision for Board Examination

FEBRUARY

Revision for Board Examination

MARCH BOARD EXAMS

EXAMWISE SYLLABUS BREAKUP

PERIODIC TEST I

Chapter 1: Chemical Reactions and Equations

Chapter 5: Life Processes

Chapter 10: Light: Reflection and Refraction

PERIODIC TEST II

Chapter 2 : Acids, Bases and Salts

Chapter 6: Control and Coordination

Chapter 11: Human Eye and its colourful world

MID TERM EXAMS

Chapter 1: Chemical Reactions and Equations

Chapter 2 : Acids, Bases and Salts

Chapter 3 : Metals and Non-Metals

Chapter 5: Life Processes

Chapter 6: Control and Coordination

Chapter 10: Light: Reflection and Refraction
Chapter 11: Human Eye and its colourful world

PERIODIC TEST III

Chapter 12: Electricity
Chapter 3: Metals and Non metals
Chapter 7: How do organisms reproduce?

PREBOARD I EXAM

Chapter 1 : Chemical Reactions and Equations
Chapter 2 : Acids, Bases and Salts
Chapter 3 : Metals and Non-Metals
Chapter 4: Carbon and its compounds
Chapter 5: Life Processes
Chapter 6: Control and Coordination
Chapter 7: How do organisms reproduce?
Chapter 8: Heredity
Chapter 9: Light
Chapter 10: Human Eye and its colourful world
Chapter 11: Electricity

PREBOARD II EXAM

Chapter 1 : Chemical Reactions and Equations
Chapter 2 : Acids, Bases and Salts
Chapter 3 : Metals and Non-Metals
Chapter 4: Carbon and its compounds
Chapter 5: Life Processes
Chapter 6: Control and Coordination
Chapter 7: How do organisms reproduce?
Chapter 8: Heredity
Chapter 9: Light
Chapter 10: Human Eye
Chapter 11: Electricity
Chapter 12: Magnetic effects of current
Chapter 13: Our Environment

SOCIAL SCIENCE

(Code No. 087)

Objectives:

1. To develop an understanding of the processes of change and development both in terms of time and space through which human societies have evolved.
2. To make learner's realise that the process of change is continuous and any event of phenomena or issue cannot be viewed in isolation but in a wider context of time and space.
3. To facilitate the learners to understand and appreciate the diversity in the land and people of the country with its underlying Unity.
4. To promote and understanding of the issues and challenges of contemporary India environmental social and economic as part of the development process.

Learning outcomes:

- **recognises and retrieves facts, figures, and narrate, processes, for example,**
 - a) identifies different types of soil, minerals, renewable and non-renewable energy resources, etc.
 - b) locates areas or regions known for production of coal, iron ore, petroleum, rice, wheat, tea, coffee, rubber, and cotton textile on the map of India.
 - c) defines basic Economic terms associated with economic development such as, human capital, sustainable development, gross domestic product, gross value added, per capita income, human development index, multinational company, foreign trade, liberalisation and foreign investment.
- **classifies and compares events, facts, data and figures, for example,**
 - a) compares per capita income of some important countries.
 - b) differentiates consumer rights.

c)classifies occupations and economic activities into sectors using different criteria.

d)explains the terms used in political discussions and their meaning, for example, Gandhian, communist, secularist, feminist, casteist, communalist, etc.

- **explains cause and effect relationship between phenomena, events, and their occurrence, for example,**

a)explains factors responsible for production of different crops in India.

b)explains industries and their impact on environment.

c) explains the cause and effect between different historical events and developments such as, the impact of print culture on the growth of nationalism in India.

d)examines the impact of technology on food availability

NCERT Textbooks:

India and the contemporary world -II

Contemporary India-II

Democratic politics-II

Understanding economic development-II

Reference Book:

Xam Idea- V.K Global Publications Pvt. Ltd.

E-references:

<https://ncert.nic.in/textbook.php?iess1=4-6>

http://cbseacademic.nic.in/curriculum_2022.html

MONTHWISE SYLLABUS BREAKUP

APRIL

History: Chapter 1- The Rise of Nationalism in Europe (Contd.)

Civics: Chapter 1- Power sharing

Economics : Chapter 1- Story of development

Geography: Chapter 1- Resources and development

MAY

History: Chapter 1- The Rise of Nationalism in Europe

Civics: Chapter-2-Federalism

Economics- Chapter-2- Sectors of Indian economy

Geography : Chapter 1- Resources and development (Contd.)

Chapter 2- Forest and Wildlife resources

Periodic Test 1: (April 29th)

History : Chapter 1- The Rise of Nationalism in Europe

Civics : Chapter 1 -Power sharing

Economics : Chapter 1- Story of development

Geography : Chapter 1- Resources and development

JULY

History: Chapter 2- Nationalism in India.

Civics: Chapter-Gender,Religion and Caste.

Geography : Chapter 3 - Water Resources

AUGUST

History: Chapter 3- The Making of a Global World.

Geography: Chapter 4 - Agriculture

Economics: Chapter -3-Money and Credit

Civics:- Chapter-4- Gender , Religion and Caste (contd.)

SEPTEMBER

History: Chapter 4- The age of Industrialisation

Civics:

Chapter- Political Parties

Economics: Chapter 4- Globalisation

Geography: Chapter 4 - Agriculture (Contd.)

Chapter -5 Mineral and Energy resources

OCTOBER

History: Chapter 4- The age of Industrialisation

Civics: Chapter 6 - Political Parties

Economics: Chapter-4- Globalisation (Contd.)

Geography : Chapter -5 Mineral and Energy Resources (Contd.)
Chapter 6 -Manufacturing Industries

NOVEMBER

History: Chapter 5- The Print Culture

Civics: Chapter 7- Outcomes of democracy

Geography :Chapter 6 -Manufacturing Industries(Contd.)

December

History: Chapter 5- The Print Culture

Geography :Chapter 7- Lifelines of National Economy

Civics- Outcomes of democracy

January

History: Chapter 5- The Print Culture

Geography :Chapter 7- Lifelines of National Economy

Civics-

Periodic Test 1: (April 29th)

History : Chapter 1- The Rise of Nationalism in Europe

Civics : Chapter 1 -Power sharing

Economics : Chapter 1- Story of development

Geography : Chapter 1- Resources and development

Periodic Test 2 : (July 25th)

History: Chapter 2- Nationalism in India.

Civics :Chapter 4- Gender ,Caste ,Religion

Economics :Chapter 3- Money and Credit

Geography : Chapter 2 - Forest and Wildlife Resources

Mid Term Examination : (September 1st)

History: Chapter-1,2,3

Civics : Chapter-1,2,4,5

Economics : Chapter-1,2,3

Geography : Chapter -1,2,3,4

Periodic Test 3 : (December 5th)

Civics: Chapter - 5 Political parties

Economics:Chapter 4 Globalisation

History: The age of industrialisation.

Geography: Chapter -5 Mineral and Energy resources

Preboard -I : (February 13th)

History:Entire syllabus

Civics : Entire syllabus

Economics : Entire syllabus

Geography : Entire syllabus

Preboard - II : (March 6th)

Entire syllabus

ARTIFICIAL INTELLIGENCE (SUB. CODE 417)

LEARNING OBJECTIVES :

1. To help learners understand the world of Artificial Intelligence and its applications through games, activities, and multi-sensory learning to become AI-ready.
2. To introduce the learners to the three domains of AI in an age-appropriate manner.
3. To allow the learners to construct the meaning of AI through interactive participation and engaging hands-on activities.
4. To introduce the learners to AI Project Cycle.
5. To introduce the learners to programming skills - Basic python coding language.

LEARNING OUTCOMES:

- Recognize and value artificial intelligence (AI) in everyday life.
- Apply Human-Machine interaction principles across AI domains: Data, Computer Vision, and Natural Language Processing, with ongoing self-assessment.
- Reflect on and prepare for future job opportunities, considering emerging skill requirements.
- Engage in creative storytelling around smart home concepts, fostering imagination.
- Understand AI's role in Sustainable Development Goals for responsible citizenship.
- Research and cultivate awareness of future job skills.
- Acknowledge AI bias, access, and ethical considerations.
- Cultivate effective communication and collaboration skills.
- Familiarize with AI concepts and project cycles, fostering motivation.
- Learn problem scoping, goal-setting, and ethical brainstorming

in AI projects, with iterative problem-solving approaches.

Text Book : [CBSE TEXT BOOK](#) (CHAPTERWISE NOTES ARE GIVEN AS LINK IN CURRICULUM)

Link to AI Activities & Jupyter Notebooks (including sample projects) https://bit.ly/class_X_activities_jupyter_notebooks

Total Marks: 100 (Theory-50 + Practical-50)

	UNITS	NO. OF HOURS for Theory and Practical	MAX. MARKS for Theory and Practical
	Employability Skills		
	Unit 1: Communication Skills-II	10	2
	Unit 2: Self-Management Skills-II	10	2
	Unit 3: ICT Skills-II	10	2
	Unit 4: Entrepreneurial Skills-II	15	2
	Unit 5: Green Skills-II	05	2
	Total	50	10
	Subject Specific Skills		
	Unit 1: Introduction to Artificial Intelligence (AI)		7
	Unit 2: AI Project Cycle		9
	Unit 3: Advance Python (To be assessed in Practicals only)		--
	Unit 4: Data Science (Introduction, Applications of Data Sciences, Data Science: Getting Started (up to Data Access), <i>remaining portion is to be assessed in practical</i>)		4
	Unit 5: Computer Vision (Introduction, Applications of Computer Vision, Computer Vision:		4

	Getting Started (up to RGB Images), <i>remaining portion is to be assessed in practical</i>		
	Unit 6: Natural Language Processing		8
	Unit 7: Evaluation		8
	Total		40
	Practical Work:		
	Practical File with minimum 15 Programs		15
	Practical Examination		5
	• Unit 3: Advance Python		5
	• Unit 4: Data Science		5
	• Unit 5: Computer Vision		
	Viva Voce		5
	Total		35
	Project Work / Field Visit / Student Portfolio (Any one to be done)		10
	Viva Voce		5
	Total		15
	GRAND TOTAL	200	100

DETAILED CURRICULUM/TOPICS FOR CLASS X

Part-A: EMPLOYABILITY SKILLS

S. No.	Units	Month
1.	Unit 1: Communication Skills-II	April - May
2.	Unit 2: Self-management Skills-II	July
3.	Unit 3: Information and Communication Technology Skills-II	Aug
4.	Unit 4: Entrepreneurial Skills-II	Sep
5.	Unit 5: Green Skills-II	Oct

PART - B

UNIT 1: INTRODUCTION TO ARTIFICIAL INTELLIGENCE

SUB-UNIT	LEARNING OUTCOMES	SESSION/ PRACTICAL	ACTIVITY/
APRIL & MAY			
CHAPTER 1 NOTES - CLICK TO DOWNLOAD			
Foundational concepts of AI	Understand the concept of human intelligence and its various components such as reasoning, problem-solving, and creativity	Session: What is Intelligence?	
		Session: Decision Making.	
		<ul style="list-style-type: none"> • How do you make decisions? • Make your choices! 	
Session: what is Artificial Intelligence and what is not?			
Basics of AI: Let's Get Started	Understand the concept of Artificial Intelligence (AI) and its domains	Session: Introduction to AI and related terminologies. <ul style="list-style-type: none"> • Introducing AI, ML & DL. • Introduction to AI Domains (Data Sciences, CV & NLP) • Gamified tools for each domain- <ul style="list-style-type: none"> o Data Sciences- Impact Filter (Impact of rise in temperature on different species) <p>https://artsexperiments.withgoogle.com/impactfilter/</p> <ul style="list-style-type: none"> o CV- Autodraw (It pairs machine learning with drawings from talented artists to help you draw stuff fast.) <p>https://www.autodraw.com/</p>	
SUB-UNIT	LEARNING OUTCOMES	SESSION/ PRACTICAL	ACTIVITY/

		<ul style="list-style-type: none"> o NLP- Wordtune (AI writing tool that rewrites, rephrases, and rewords your writing) https://www.wordtune.com/
Explore the use of AI in real Life.		Session: Applications of AI – A look at Real-life AI implementations
Learn about the ethical concerns involved in AI development, such as AI bias, data privacy and how they can be addressed.		Session: AI Ethics <ul style="list-style-type: none"> • Moral Machine Activity : a platform for gathering a human perspective on moral decisions made by machine intelligence, such as self-driving cars. http://moralmachine.mit.edu/
		Python Recap Concepts – Data Types, Variables, Operators, Selection & Iteration - Lists Practical File Programs (1-4)
CBSE Question Bank		<ol style="list-style-type: none"> 1. Click to download 2. Click to Download

UNIT 2 : AI PROJECT CYCLE

JULY		
SUB-UNIT	LEARNING OUTCOMES	SESSION/ PRACTICAL ACTIVITY/
CHAPTER 2 NOTES - CLICK HERE TO DOWNLOAD		
Introduction	Understand the stages involved in the AI project cycle, such as problem scoping, data	Session: Introduction to AI Project Cycle

	collection, data exploration, modeling, evaluation.	
Problem Scoping	Learn about the importance of project planning in AI development and how to define project goals and objectives.	Session: Understanding Problem Scoping & Sustainable Development Goals
Data Acquisition	Develop an understanding of the importance of data collection in AI and how to choose the right data sources.	Session: Simplifying Data Acquisition
Data Exploration	Know various data exploration techniques and its importance	Session: Visualising Data
Modelling	Know about the different machine learning algorithms used to train AI models	Session: Introduction to modelling <ul style="list-style-type: none"> • Introduction to Rule Based & Learning Based AI Approaches • Activity : Teachable machine to demonstrate Supervised Learning https://teachablemachine.withgoogle.com/ • Activity : Infinite Drum Machine to demonstrate Unsupervised learning https://experiments.withgoogle.com/ai/drum-machine/view/ • Introduction to Supervised, Unsupervised & Reinforcement Learning

		Models • Neural Networks
Evaluation	Know the importance of evaluation and various metrics available for evaluation	Session: Evaluating the idea!
	CBSE Question Bank	Click here to download

UNIT 4: DATA SCIENCES (To be assessed through Theory)

SUB-UNIT	LEARNING OUTCOMES	SESSION/ PRACTICAL	ACTIVITY/
DATA SCIENCE NOTES : CLICK HERE TO DOWNLOAD			
Introduction	Define the concept of Data Science and understand its applications in various fields.	Session: Introduction to Data Science	
		Session: Applications of Data Science	
Getting Started	Understand the basic concepts of data acquisition, visualization, and exploration.	Session: Revisiting AI Project Cycle, Data Collection, Data Access Activities: Game: Rock, Paper & Scissors https://next.rockpaperscissors.ai/	

UNIT 4: DATA SCIENCES (To be assessed through Practicals)

SUB-UNIT	LEARNING OUTCOMES	SESSION/ PRACTICAL	ACTIVITY/
Python Packages	Use Python libraries such as NumPy, Pandas, and Matplotlib for data analysis and visualization.	Session: Python for Data Sciences <ul style="list-style-type: none"> • Numpy • Pandas • Matplotlib 	

Concepts of Data Science	Understand the basic concepts of statistics, such as mean, median, mode, and standard deviation, and apply them to analyze data using various Python packages.	Session: Statistical Learning & Data Visualisation Practical Questions – 4 to 10
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UNIT 5: COMPUTER VISION (To be assessed through Theory)

SUB-UNIT	LEARNING OUTCOMES	SESSION/ ACTIVITY/ PRACTICAL
COMPUTER VISION NOTES : CLICK HERE TO DOWNLOAD		
Introduction	Define the concept of Computer Vision and understand its applications in various fields.	Session: Introduction to Computer Vision
		Session: Applications of CV
Concepts of Computer Vision	Understand the basic concepts of image representation, feature extraction, object detection, and segmentation.	Session: Understanding CV Concepts <ul style="list-style-type: none"> • Computer Vision Tasks • Basics of Images-Pixel, Resolution, Pixel value • Grayscale and RGB images
		Activities: <ul style="list-style-type: none"> • Game- Emoji Scavenger Hunt <p>https://emojiscavengerhunt.withgoogle.com/</p> <ul style="list-style-type: none"> • RGB Calculator: https://www.w3schools.com/colors/colors_rgb.asp • Create your own pixel art: www.piskelapp.com • Create your own convolutions:

		<a href="http://setosa.io/ev/image-kerne
ls/">http://setosa.io/ev/image-kerne ls/
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UNIT 5: COMPUTER VISION (To be assessed through Practicals)

SUB-UNIT	LEARNING OUTCOMES	SESSION/ PRACTICAL	ACTIVITY/
OpenCV	Use Python libraries such as OpenCV for basic image processing and computer vision tasks.	Session: Introduction to OpenCV	
		Hands-on: Image Processing Practical Question (11-15)	

UNIT 6: NATURAL LANGUAGE PROCESSING

SUB-UNIT	LEARNING OUTCOMES	SESSION/ PRACTICAL	ACTIVITY/
NLP NOTES : CLICK HERE TO DOWNLOAD			
Introduction	Understand the concept of Natural Language Processing (NLP) and its importance in the field of Artificial Intelligence (AI).	Session: Introduction to Natural Language Processing	
		Activity : Use of Google Translate for same spelling words	
		Session: NLP Applications	
Chatbots	Explore the various applications of NLP in everyday life, such as chatbots, sentiment analysis, and automatic summarization	Session: Revisiting AI Project Cycle	
		Activity: Introduction to Chatbots	
Language Differences	Gain an understanding of the challenges involved in understanding human language by machine.	Session: Human Language VS Computer Language	

Concepts of Natural Language Processing	Learn about the Text Normalization technique used in NLP and popular NLP model - Bag-of-Words	Session: Data Processing <ul style="list-style-type: none"> • Text Normalization • Bag of Words Hands-on: Text processing <ul style="list-style-type: none"> • Data Processing • Bag of Words
	CBSE Question Bank	Click Here to download

UNIT 7: EVALUATION

SUB-UNIT	LEARNING OUTCOMES	SESSION/ PRACTICAL	ACTIVITY/
NOTES EVALUATION - CLICK TO DOWNLOAD			
Introduction	Understand the role of evaluation in the development and implementation of AI systems.	Session: Introduction to Model Evaluation <ul style="list-style-type: none"> • What is Evaluation? <ul style="list-style-type: none"> • Different types of Evaluation techniques- Underfit, Perfect Fit, OverFit 	
Model Evaluation Terminology	Learn various Model Evaluation Terminologies	Session: Model Evaluation Terminologies <ul style="list-style-type: none"> • The Scenario - Prediction, Reality, True Positive, True Negative, False Positive, False Negative • Confusion Matrix • Activity- to make a confusion matrix based on data given for Containment Zone Prediction Model 	
Confusion Matrix	Learn to make a confusion matrix for given Scenario	Session & Activity: Confusion Matrix	

Evaluation Methods	Learn about the different types of evaluation techniques in AI, such as Accuracy, Precision, Recall and F1 Score, and their significance.	Session: Evaluation Methods
		<ul style="list-style-type: none"> • Accuracy • Precision • Recall • Which Metric is Important? - Precision or Recall • F1 Score
		Activity: Practice Evaluation
	CBSE Question Bank	Click Here to Download

PART-C: PRACTICAL WORK

1. Write a program to accept string and display it in lower case and upper case.
2. Write a program to accept a list of numbers and display even numbers from the list.
3. Write a program to add the elements of the two lists.
4. Write a program to calculate mean, median and mode using Numpy
5. Write a program to display line chart from (2,5) to (9,10).
6. Write a program to display a scatter chart for the following points (2,5), (9,10),(8,3),(5,7),(6,18).
7. The heights of 10 students of eighth grade are given below:
Height_cms=[145,141,142,142,143,144,141,140,143,144]
Write suitable Python code to generate a histogram based on the given data, along with an appropriate chart title and both axis labels.
8. Write a python program to plot a line chart based on the given data to depict the changing weekly average temperature in Delhi for four weeks. Week=[1,2,3,4]
Avg_week_temp=[40,42,38,44]
9. Read csv file saved in your system and display 10 rows.
10. Read csv file saved in your system and display its information
11. Write a program to read an image and display using Python
12. Write a program to read an image and identify its shape using Python
13. Write a program to read an image and crop a portion of

image using Python.

14. Write a program to read an image and convert it into grayscale using Python

15. Write a program to read an image and reduce its size. using Python.

PART-D: Project Work / Field Visit / Student Portfolio * relate it to Sustainable Development Goals Suggested Projects/ Field Visit / Portfolio (any one activity to be one)

Field Work	Students' participation in the following- <ul style="list-style-type: none">● AI for Youth Bootcamp● AI Fests/ and Exhibition● Participation in any AI training sessions● Virtual tours of companies using AI to get acquainted with real-life usage
Student Portfolio (to be continued from class IX)	<ul style="list-style-type: none">● Maintaining a record of all AI activities● Hackathons● Competitions (CBSE/Interschool) Note: Portfolio should contain minimum 5 activities