ENGLISH Class IX
(2026-27)
Language R1

Curricular Goal (CG)	Competency (C)
CG-1: Uses language for effective communication through writing various forms (essays, letters, articles, discussions, interviews, public speeches) and for new media (email, audio, and visual material).	C-1.1: Uses language appropriate to social context, expresses agreement and disagreement with reasons, and arrives at conclusions through discussion and debate. C-1.2: Writes in different styles (narrative, descriptive, expository, persuasive) from their own experiences and experiences of others. C-1.3: Writes for real-life situations (invitations, speeches, condolence messages, notices, creative slogans, advertisements) and for school newsletter/magazine/journal. C-1.4: Scripts to inform and communicate ideas effectively with the use of technology.
CG-2: Develops an appreciation of the aesthetics in different genres (humour, suspense, tragedy) through analysis of style (narrative, descriptive, expository, persuasive) and employs these elements in their writing.	C-2.1: Describes characteristics of works of literature from different time periods (such as early, medieval, contemporary). C-2.2: Analyses a literary text by close reading, critiquing form and style, and interpreting possible meanings. C-2.3: Composes literary texts by using appropriate literary devices.
CG-3: Uses language to develop reasoning and argumentation skills by engaging with a variety of audio and written material.	C-3.1: Analyses and evaluates the different audio and written material. C-3.2: Argues with proper rationale by carefully evaluating premises.
CG-4: Appreciates literary and cultural heritage in and related to the language and the richness of Indian languages.	C-4.1: Recognises the multilingual nature of Indian society and richness of its literary work through reading texts and watching content of different genres. C-4.2: Appreciates the richness of culture and heritage in the different works of regional language literature and their connections. C-4.3: Shows an understanding of the role of language in the formation of our identities and culture. C-4.4: Demonstrates a basic knowledge of the commonalities among some of the major Indian languages, such as their common phonetic and scientifically arranged alphabets and scripts, common grammatical structures, origins and

Curricular Goal (CG)	Competency (C)
	sources of vocabularies from Sanskrit and other classical languages. C-4.5: Demonstrates a basic knowledge of which languages are spoken in which geographical areas, a sense of the nature and structure of tribal languages, and becomes familiar with a few useful words and phrases and works of literature from a few Indian languages from across the country.

Language R2

Curricular Goal (CG)	Competency (C)
CG-1: Uses language for effective communication through various oral activities (discussions, interviews, public speeches) and writing activities (essays, letters, articles), including new media (email, audio, and visual material).	C-1.1: Uses language appropriate to social context, expresses agreement and disagreement with reasons, and arrives at conclusions through discussion and debate. C-1.2: Writes in different styles (narrative, descriptive, expository, persuasive) from their own experiences and experiences of others. C-1.3: Writes for real-life situations (invitations, speeches, condolence messages, notices, creative slogans, advertisements) and for school newsletter/magazine/journal. C-1.4: Scripts to inform and communicate ideas effectively with the use of technology.
CG-2: Uses language to develop reasoning and argumentation skills by engaging with a variety of audio and written material.	C-2.1: Analyses and evaluates different audio and written material. C-2.2: Argues with proper rationale by carefully evaluating premises.
CG-3: Develops an appreciation of the aesthetics in different genres (humour, suspense, tragedy) through an analysis of style (narrative, descriptive, expository, persuasive) and employs these elements in their writing.	C-3.1: Describes characteristics of works of literature from different time periods (such as early, medieval, contemporary). C-3.2: Analyses a literary text by close reading, critiquing form and style, and interpreting possible meanings. C-3.3: Composes literary texts using appropriate literary devices.

FOCUS AREAS OF THE SYLLABUS

The syllabus aims to develop students' ability to use language effectively for communication, reasoning and creative expression. The curriculum focuses on strengthening Listening, Speaking, Reading and Writing skills while fostering literary appreciation and critical thinking. Students engage with a variety of texts and activities that promote analytical thinking, creativity, collaboration and real-life application of language skills.

Reading

By the end of the secondary stage, students should be able to:

- Read and comprehend a variety of literary and non-literary texts with understanding.
- Identify main ideas, supporting details and key information in written texts.
- Analyse, interpret and evaluate ideas presented in different texts.
- Distinguish between facts and opinions and identify cause–effect relationships.
- Infer meanings and draw conclusions from textual evidence.
- Understand the author's perspective, tone and style of writing.
- Interpret information presented in different forms such as diagrams, charts and tables.
- Connect ideas from the text with personal experiences and social contexts.
- Develop critical reading skills through close reading and discussion.
- Read independently and engage with texts from diverse cultures and contexts.

Writing

By the end of the secondary stage, students should be able to

- Write clearly and coherently using appropriate grammar, vocabulary and organisation.
- Write in different styles such as narrative, descriptive, expository and persuasive.
- Present ideas with a clear beginning, middle and conclusion.
- Describe experiences, events and observations in a logical manner.
- Express opinions and viewpoints with appropriate reasoning and examples.
- Write for real-life purposes such as notices, invitations, advertisements, speeches and messages.
- Gather ideas from different sources and organise them effectively in writing.
- Write reports, articles and pieces for school magazines, newsletters and journals.
- Use technology and digital tools to present ideas through written and visual formats.
- Review, edit and improve written work through feedback and self-assessment.

Listening & Speaking

Listening

By the end of the secondary stage, students should be able to

- Listen attentively to conversations, discussions and audio material.
- Identify the main ideas and important details in spoken texts.
- Analyse and interpret information presented through speeches, discussions and media sources.
- Distinguish between key points and supporting information.
- Understand instructions, explanations and viewpoints expressed by others.
- Note important details and organise information appropriately.

Speaking

By the end of the secondary stage, students should be able to

- Express ideas clearly and confidently in different situations.
- Present opinions, viewpoints and arguments with logical reasoning.
- Participate actively in discussions, debates and conversations.
- Communicate effectively in formal and informal contexts.
- Present ideas through speeches, presentations and oral reports.
- Respond appropriately to questions and viewpoints of others.
- Interact respectfully with others during discussions and collaborative activities.

Structures (Grammar) & Vocabulary

By the end of the secondary stage, students should be able to

- use the **sequence of tenses** correctly in different contexts of communication.
- identify and apply **modal auxiliaries** to express ability, obligation, permission, possibility, and advice.
- transform and use **reported speech** in extended texts including statements, questions, commands, and requests.
- construct sentences using **Conditional Clauses (Type 1)** to express real and possible situations.
- apply the rules of **subject–verb concord** to ensure grammatical accuracy in sentences.
- use appropriate **determiners** to provide clarity and precision in communication.
- identify and construct **clauses**, including **noun clauses** and **relative clauses**, to create complex and meaningful sentences.
- expand vocabulary through contextual reading and writing;
- understand meanings of unfamiliar words through context and reference tools such as dictionaries;
- use appropriate words and expressions to communicate ideas clearly;
- apply vocabulary effectively in speaking and writing tasks.

Grammar and vocabulary learning will be reinforced through editing tasks, sentence transformation, contextual exercises and communicative activities to promote accuracy and fluency in language use.

Literature — Prose & Poetry

By the end of the course, students should be able to:

- Read and appreciate a variety of literary texts from different genres.
- Analyse characters, themes and ideas presented in literary works.
- Interpret events, conflicts and relationships in stories and poems.
- Recognise the influence of context, culture and background on literary texts.
- Identify literary devices such as simile, metaphor, imagery, repetition and symbolism.
- Interpret meanings beyond the literal level through critical reading.
- Evaluate characters' actions and motivations.
- Express personal responses and interpretations through discussion and creative activities.
- Develop an appreciation of the aesthetic and cultural aspects of literature.

Assessment

In alignment with NCF-SE 2023, assessment moves beyond measuring recall to evaluating students' ability to interpret ideas, communicate effectively, think critically, and engage meaningfully with texts and contexts. Assessments should be based on observations, portfolios, and projects and should not just focus on capacities and skills, but also values and dispositions.

Assessments need to be visualised as an ongoing process which teachers integrate within the teaching-learning process using formal and informal ways to elicit reliable evidence about student learning. Assessment may not become an intimidating process that involves the labelling and segregation of students.

The 'assessment culture' must change, so that assessment is conducted increasingly as learning and for learning. There must also be periodic assessment of learning to ensure readiness for the next phase of learning and to arrange suitable support for students when this readiness is not achieved.

Assessment should emphasizes a balanced approach integrating three dimensions:

Assessment of Learning; Assessment for Learning; Assessment as Learning

Assessments could be formative or summative, and both are important for improving teaching and learning.

a) **Formative Assessment**

I. Formative assessments at secondary stage will continue to be competency-based, covering all dimensions of learning. Therefore, various formative assessment techniques, such as projects, debates, presentations, discussions, experiments, investigations, role plays, journals, and portfolios, should be used to assess learning.

II. Regular assessments comprising MCQs and constructed responses (e.g., short answer and long answer), with the aim to test conceptual understanding and higher-order capacities rather than merely rote learning.

III. Classroom and Self-assessment will play a key role in student learning at this stage.

IV. Assessments can be designed using case-based questions, simulations, and essay-type questions to enable the assessment of

competencies in order to continually replan and revise the teaching-learning process.

b) **Summative Assessment**

Summative examinations, including certification examinations, continue to be relevant as they serve as a necessary test to understand students' achievement of competencies and learning standards.

I. At the end of each year (or term), there will be a comprehensive summative assessment, which in relevant cases, would be the Board examinations.
II. Assessment may measure the achievement of competencies and learning standards leading to the attainment of Curricular Goals. The connection between the competencies or Learning Outcomes and the assessment should be clear and precise.
III. Appropriate forms of assessments may be chosen in alignment with the competencies and learning standards to be assessed.
IV. Assessments should be constructive, developmental, and learning focused.

Forms of Assessment

There are several forms of assessment that can be used across both formative and summative assessments.

(a) **Written Tests:** Forms of written tests include:

I. **Objective Type Questions**: These include Multiple Choice Questions (MCQs), filling in blanks, matching, sorting lists based on select criteria, picking the odd one out, labelling a diagram, solving a crossword, unscrambling a word, solving riddles and word grids that require a very short or one-word answer.
II. **Constructed Response Questions**: These are questions that require students to frame and write answers. They can be close ended (requiring one correct and short answer) or open-ended (requiring a short or long essay with multiple correct/alternate answers).
It is important to have clear and detailed scoring guides/marking schemes for such questions to avoid subjectivity in assessment.

III. **Graphic Organisers**: These visual representations of ideas and concepts help students organise their learning and assimilate new knowledge.

(b) **Oral Tests**: The most common forms are reading aloud, responding to questions, recitation, and debates and discussions. Other forms, include group discussions, presentations, and extempore talks.

I. **Reading Aloud**: Reading assessments could include reading aloud a passage, a poem, or any other form of writing. Word recognition, fluency,

and voice modulation skills could be assessed along with comprehension by asking students to summarise or talk about what they have read.

II. **Listening and Responding**: Students listen to a text and respond either orally or on a worksheet.

III. **Recitation:** This helps the teacher assess the spoken language with a specific focus on pronunciation, intonation and comprehension by observing students' expressions and actions.

IV. **Debates and Discussions**: Students' fluency of language as well as proficiency in making strong arguments using knowledge and reasoning to persuade and convince the audience can be assessed while also developing an ability to understand and respect others' viewpoints and opinions. Teachers can also include other parameters, such as diction deportment, ability to take criticism positively, and manage their emotions and body language during public speaking. Sharing parameters before setting the task helps students focus on developing these skills which serves as good learning opportunities as well.

Practical Tests

These require students to demonstrate specific skills and applications of their new learning. These include :

I. **Projects**: Projects are longer, structured activities completed by individual students or groups of students that result in a product. For example, a model, a substantial report, or a collection of artefacts. While doing projects, students investigate, explore, and respond to complex questions, real-world challenges, and problems. Projects help assess collaboration, communication, perseverance, creativity, and problem solving along with assessing subject-specific knowledge and skills.

II. **Portfolios**: A student portfolio is a purposeful collection of student work that tells a story about a student's efforts, progress, and achievement in one or more subjects over a period of time. It could be a collection of the student's day-to-day work or a selection of the student's best pieces of work. Portfolios may include writing samples, laboratory reports, journals, artwork, short surveys and research papers, projects, photos, worksheets, tests and map work, Teacher's qualitative comments on the students' work, peer feedback, and the students' own reflections on their learnings.

It becomes a cumulative record of performance from which emerges a clear picture of what students know, can do and how they have progressed over the period.

I. **Multiple Assessment**

These include a range of activities like quizzes, worksheets, oral presentations, class discussions, etc.

II. **Periodic Pen and Paper Assessment**

Prescribed Textbook- Kaveri: Textbook of English for Grade 9

The textbook has been developed based on common curricular goals rather than rigid differentiation between R1 & R2. The textbook content, learning outcomes, and assessment remain aligned with the common competency framework envisaged for R1 and R2 at the secondary stage, and therefore, the same textbooks can be transacted flexibly in accordance with the learner profile and institutional context.

Question Paper Design- R1 & R2

ENGLISH LANGUAGE – SYLLABUS CLASS – IX (2026-27) R1

SUBJECT CODE –

Section		Weightage
A	Reading Skills	20 Marks
B	Writing Skills and Grammar	30 Marks
C	Language through Literature	30 Marks
D	Internal Assessment	20 Marks

Section A – Reading Skills

I. Reading Comprehension through Unseen Passage – 20 Marks (10+10)

- Descriptive/ Discursive Passage – 400-450 words – 10 Marks
- Case Based Passage (With verbal/visual inputs – statistical data/chart etc.) – 200-250 words – 10 Marks

Total Length of the two passages to be 600-700 words.

Question types to be included: Selected and constructed responses (MCQ's, Objective type, VSAQs, SAQs)

Section B – Writing Skills and Grammar – 30 Marks (10+20)

II. Grammar – 10 Marks (04+03+03)

- Sequence of Tenses in different contexts of communication
- Modal Auxiliaries and their functions in expressing ability, obligation, permission, possibility and advice
- Reported Speech in extended texts including
  - statements
  - questions
  - commands and requests
- Conditional Clause – Type 1
- Subject–Verb Concord
- Determiners
- Clauses – Noun Clause, Relative Clause

3. Editing/Omitting (Selected responses – MCQs) – 04 Marks
4. Sentence Rearrangement – 03 Marks
5. Sentence Transformation – 03 Marks

III. Writing Skills – 20 Marks (03+05+05+07)

6. Writing a Notice, Informal Invitation (Word Limit – Up to 50 words) – 3 Marks

7. Writing a Letter to Editor, Formal E-mail on a given issue for presenting views and suggestions –(Word Limit – 120-150 words) – 5 Marks

8. Writing a Factual Description, Magazine Article (Word Limit – 120-150 words) – 5 Marks

9. Writing Descriptive, Narrative Essay (Word Limit – 200-250 words) – 7 Marks

For questions 6 to 9 attempt any one as per the internal choice provided. The internal choice could comprise both same or different topics.

Section C – Language through Literature – 30 Marks (10 + 10 + 05 + 05)

IV. Extract Based Questions – 5x2 = 10 Marks

10. One extract out of two, from Drama / Prose.

11. One extract out of two, from poetry.

Types of questions to be included – Selected and constructed responses (MCQs, Objective Type Questions, VSAQs)

V. Constructed Responses (Short & Long Answer Questions)

12. Five out of Six Questions to be answered in 40-50 words. 5x2 = 10 Marks

13. One out of two Questions assessing extrapolation beyond the text and across the texts to be answered in about 120-150 words. 5 Marks

14. One out of two Questions assessing theme / plot/ character to be answered in about 120-150 words. 5 Marks

INTERNAL ASSESSMENT 20 MARKS	
Periodic Pen and Paper Tests	**05 Marks**
Multiple Assessment (Quizzes/ Oral Discussions/Presentations etc.)	**05 marks**
Portfolio	**05 Marks**
Subject Enrichment projects (ALS/ Art / IKS / Tech Integrated)	**05 Marks**

ENGLISH LANGUAGE – SYLLABUS CLASS – IX (2026-27) R2

SUBJECT CODE –

Section		Weightage
A	**Reading Skills**	**20 Marks**
B	**Writing Skills and Grammar**	**30 Marks**
C	**Language through Literature**	**30 Marks**
D	**Internal Assessment**	**20 Marks**

Section A – Reading Skills

I. Reading Comprehension through Unseen Passage – 20 Marks (12 + 8)

- Factual/ Literary Passage – 400-450 Words – 12 Marks
- Case Based Passage (With verbal inputs) – 200-250 Words – 8 Marks

Total Length of the two passages to be 600-700 words.

(Question types to be included: Selected and constructed responses (MCQ's, Objective type, VSAQs, SAQs)

Section B – Writing Skills and Grammar – 30 Marks (10+20)

II. Grammar – 10 Marks (04+03+03)

- Sequence of Tenses in different contexts of communication
- Modal Auxiliaries and their functions in expressing ability, obligation, permission, possibility and advice
- Reported Speech in extended texts including
  - statements
  - questions
  - commands and requests
- Conditional Clause – Type 1
- Subject–Verb Concord
- Determiners
- Clauses – Noun Clause, Relative Clause

3. Paragraph Completion (Selected responses: Fill ups with options) – 04 Marks
4. Sentence Rearrangement – 03 Marks
5. Sentence Transformation – 03 Marks

III. Writing Skills – 20 Marks (04+05+05+06)

6. Writing a Notice, Creating a Poster (Word Limit – Up to 50 words) – 4 Marks

7. Writing a Letter to the Editor, Formal E-mail on a given issue for presenting views and suggestions (Word Limit – 120-150 words) – 5 Marks
8. Writing a Speech, Magazine Article based on visual or verbal cues (Word Limit – 120-150 words) -5 Marks
9. Writing a Narrative Essay (Word Limit – 150-180 words) – 6 Marks

For questions 6 to 9 attempt any one as per the internal choice provided. The internal choice could comprise both same or different topics.

Section C – Language through Literature – 30 Marks (15 + 10 + 05)

IV. Extract-Based Questions – 5x3 = 15 Marks

10. One extract out of two, from Prose.

11. One extract out of two, from Drama.

12. One extract out of two, from Poetry.

Types of questions to be included – Selected and constructed responses (MCQs, Objective type questions, VSAQs)

V. Constructed Responses (Short & Long Answer Questions)

13. Five out of Seven Questions to be answered in 40-50 words 5x2 = 10 Marks

14. One out of two Questions to be answered in 120-150 words to assess extrapolation beyond the text and across the texts; theme / plot/ character. 5 Marks

INTERNAL ASSESSMENT 20 MARKS	
Periodic 'Pen and Paper Tests	**05 Marks**
Multiple Assessment (Quizzes/ Oral Discussions/Presentations etc.)	**05 marks**
Portfolio	**05 Marks**
Subject Enrichment projects (ALS/ Art / IKS / Tech Integrated)	**05 Marks**

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Mathematics
Class IX (2026 – 27)

COURSE STRUCTURE CLASS – IX

Units	Unit Name	Chapter Name	Marks
I	Number System	• Number System	07
II	Algebra	• Introduction to Polynomials • Sequences and Progressions • Exploring Algebraic Identities • Linear Equations in Two Variables	20
III	Coordinate Geometry	• Coordinate Geometry	04
IV	Geometry	• Introduction to Euclid's Geometry: Axioms and Postulates • Lines and Angles • Triangles - Congruence Theorems • 4-gons (Quadrilaterals) • Circles	25
V	Mensuration	• Area and Perimeter • Surface Area and Volume	14
VI	Statistics and Probability	• Statistics • Introduction to Probability	10
	Total		**80**

Chapter Name	Key Concepts	Relevant CGs	Competencies
	Unit 1: Number System		**No. of periods : 12**
Number System	• Introduction to rational numbers • Representation of rational numbers on the number line • Density of rational numbers and its proof • Finding rational numbers between any two rational numbers • Decimal representation of rational numbers • Introduction to irrational numbers • Proof of irrationality of $\sqrt{2}$ and $\sqrt{3}$ • The square root spiral	CG-1, C-1.1, CG-9	The student will be able to: • Understand the concept of a rational number. • Represent rational numbers on the number line. • Understand the properties of rational numbers. • Explain the concept of density of rational numbers. • Compute decimal representation of rational numbers. • Understand the concept of irrational numbers. • Prove the irrationality. • Construct the square root spiral. • Apply computational thinking to represent rational and irrational

			numbers through algorithms and visual models, generate decimal expansions systematically, and reason about numbers using step-by-step logical procedures.
	UNIT II: ALGEBRA		**No. of periods : 66**
Introduction to Polynomials	• Algebraic expressions • Definition of a polynomial. • Degree of a polynomial • Introduction to linear polynomials and applications • Exploring linear patterns • Modelling linear growth and linear decay • Linear relationships • Visualising linear relationships • Slope and y-intercept of a line y = ax + b	CG-3, C-3.2, CG-9	The student will be able to: • Understand the meaning of an algebraic expression. • Define a polynomial. • Identify the degree, terms and coefficients of terms in a polynomial. • Model linear growth and decay using linear polynomials. • Explain and identify patterns in linear relationships. • Identify the slope and y-intercept of a linear equation in two variables. • Graph a linear equation in two variables. • Use computational thinking to identify patterns, construct linear expressions, and systematically represent and analyse linear relationships using equations and graphs.
Sequences and Progressions	• Introduction to sequences • Explicit or general rule of a sequence • Recursive rule of a sequence • Arithmetic Progressions • (AP): nth term, visualising an AP, and practical contexts leading to Aps • Sum of the first n natural numbers • Geometric Progressions (GP): nth term, visualising a GP, and practical contexts leading to GPs • Applications of GP in fractals • Tower of Hanoi puzzle	CG-11, C-8.1, CG-9	The student will be able to: • Understand the concept of a sequence of numbers. • Identify the pattern in a sequence and predict the next few terms. • Determine the recursive and explicit rules for different sequences. • Obtain the terms of sequence given its recursive and explicit rule. • Identify Arithmetic Progressions (AP). • Determine the nth term of an AP. • Visualise an AP graphically. • Identify Geometric Progressions (GP). • Determine the nth term of a GP. • Visualise a GP graphically. • Analyse attributes of fractals using GP. • Solve the Tower of Hanoi puzzle. • Use computational thinking to identify patterns, write step-by-step rules, and model patterns in sequences and progressions.

Exploring Algebraic Identities	• Revisiting algebraic identities • Visualising identities using geometrical models • Factorisation of algebraic expressions using identities • More identities and their applications • Visualising factorisation of quadratic expressions through algebra tiles and without using algebra tiles • Finding new identities • Simplifying rational expressions	CG-7, C-7.2, CG-9	The student will be able to: • Visualise algebraic identities using geometric models. • Determine the factors of algebraic expressions using identities. • Interpret factors of quadratic expressions through geometric models. • Find simplified versions of rational expressions. • Use computational thinking strategies, such as decomposition and step-by-step procedures to visualise algebraic identities, factor expressions, and simplify rational expressions.
Linear Equations in Two Variables	• Introduction to linear equations in two variables through practical examples • Solution of linear equation in two variables: graphical representation • Slope-intercept form of linear equation in two variables • Drawing graphs of linear equations when x and y assume only certain values • Pair of linear equations in two variables • Graphical method for solving a pair of linear equations in two variables • Nature of solutions: consistency and inconsistency • Algebraic methods of solving a pair of linear equations: substitution and elimination method	CG-3, C-3.2, C-8.1, CG-9	The student will be able to: • Understand the concept of a linear equation in two variables. • Graph a pair of linear equations. • Solve a pair of linear equations graphically. • Solve a pair of linear equations through the methods of substitution and elimination. • Determine the nature of solutions of a pair of linear equations. • Model and solve contextualised problems using a pair of linear equations and draw conclusions. • Model daily-life phenomena using representations, such as graphs, tables, and equations. • Use computational thinking to systematically represent, solve, and interpret pairs of linear equations through graphs, tables, and step-by-step procedures.

	UNIT III: COORDINATE GEOMETRY No. of periods : 6		
Coordinate Geometry	• Brief history of coordinate geometry • The 2-D Cartesian coordinate system • Distance between two points in the 2-D plane • Midpoint of the line-segment between two points in the 2-D plane	CG-4, C-4.5, CG-9	The student will be able to: • Specify locations and the position of one point relative to another point using coordinates. • Represent a floor plan on a grid using coordinates. • Compute the distance between two points using coordinates. • Determine whether three points lie in a straight line using coordinates. • Compute the position of the midpoint of a line segment using coordinates. • Check whether a triangle is right-angled using coordinates. • Apply computational thinking to model situations on the coordinate plane and verify geometric properties through systematic reasoning.
	UNIT IV: GEOMETRY No. of periods : 69		
Introduction to Euclid's Geometry: Axioms and Postulates	• History of geometry • Constructing a square with a given side as described in the Baudhayana's Sulbasutras • Discovering Euclid's definitions • Axioms: Axioms of measurement and rules for geometric objects	CG-7, C-7.1, C-7.3	The student will be able to: • Describe how geometry grew from the practical needs ancient civilisations. • Describe contributions of India, Egypt and Greece to the development of geometric ideas. • Understand the role of definitions, axioms, and postulates. • Explain that there are elements of plane geometry (point, line, surface) for which we have an intuitive sense. • State the 5 postulates of Euclidean geometry. • Define parallelism of straight lines. • Explain the construction of a square as given in the Sulbasutras. • Justify simple constructions using the axioms.
Lines and Angles	• Rays and angles • Measures of angles • Intersecting lines and angles • Pairs of angles • Theorems and examples on intersecting lines • Theorems and examples on parallel lines	CG-7, C-7.1, C-7.3, CG-9	The student will be able to: • Explain the notion of an angle. • Explain the notion of a ray. • Explain that angles are formed between two rays with a common starting point. • State that a straight angle equals two right angles and measures 180° while a right angle measures 90°.

			• Classify angles as acute, right, obtuse, or reflex. • Define parallelism. • State and apply the linear pair theorem and its converse. • Follow proof by contradiction in geometry. • Prove that vertically opposite angles are equal. • Identify corresponding, alternate, and interior angles. • Explain transitivity of parallelism. • Explain why a triangle must have at least two acute angles; why it cannot have two obtuse angles, or all three angles less than 60° • Apply computational thinking to analyse geometric ideas by breaking constructions into ordered steps, using axioms and postulates as rules, and justifying geometric results through logical step-by-step reasoning.
Triangles: Congruence Theorems	• Practical applications of triangles • Proofs of conditions of congruence of triangles • Theorems on triangles • Propositions and their converse • Problems based on applications of theorems on triangles	CG-4, C 4.1, C-7.3	The student will be able to: • Explain that a triangle is rigid, unlike a quadrilateral. • Identify uses of triangle rigidity. • Explain why triangles give strength and stability to structures. • Describe what it means for two triangles to be congruent. • Identify correspondence between the vertices, sides, and angles of two congruent triangles. • Use the SAS congruence axiom. • Use the SSS congruence condition. • Use the ASA congruence condition. • Use the RHS congruence condition. • Use the AAS congruence condition. • Prove the basic properties of isosceles triangles. • Explain the notion of a proposition. • Explain the notion of converse of a proposition. • Identify the converse of a given proposition. • Explain that not all converses are true; use counter examples to show that some converses are false. • Explain why SSA is not, in general, a valid congruence condition.

			• Identify the situations where SSA is a valid congruence condition. • Justify the role of diagram accuracy.
4-gons (Quadrilaterals)	• Properties of parallelograms • Important theorems related to parallelograms and their proof • Midpoint theorem and its applications • Understanding the notion of central symmetry in the context of parallelograms	CG-4, C-4.2, C-7.3	The student will be able to: • Frame a precise definition of a 4-gon. • Prove various characterisations of a parallelogram. • Prove the midpoint theorem. • Prove a converse of the midpoint theorem. • Prove that the medians of a triangle are concurrent and each median is divided in the ratio 2:1 at the point of concurrence. • Prove that the 4-gon formed by joining the midpoints of a given 4-gon is a parallelogram. • Find the coordinates of the midpoint of a line segment given its end points and find the coordinates of the fourth vertex of a parallelogram given the other three. • Understand reflection and rotation symmetries of 4-gons. • Understand how any 4-gon can tile a plane. • Practice forming logical converses of statements and asking questions guided by converses of theorems. • Engage in drawing, measurement and paper manipulation activities to discover geometric patterns involving triangles and 4-gons.
Circles	• Practical applications and uses of circles • Definitions related to a circle — centre, diameter, and radius • Chords and the angles they subtend • Midpoints and perpendicular bisectors of chords • Distance of chords from the centre • Subtended angles by an arc • Cyclicity of points	CG-4, C-7.3, CG-9	The student will be able to: • State the definition of a circle. • Explain the meanings of the terms ‘chord’, ‘diameter’, ‘radius’, ‘arc’, ‘segment’, and ‘sector’. • Explain why there exists a unique circle through three non-collinear points. • Construct the circumcircle and circumcentre of a triangle. • Describe the location of the circumcentre for acute, obtuse, and right-angled triangles. • Explain what ‘angle subtended by an arc at the centre’ means. • Explain why ‘equal chords subtend equal angles at the centre’.

			• Explain why 'chords that subtend equal angles at the centre are equal'. • Explain why 'the line from the centre of a circle to the midpoint of a chord is perpendicular to the chord'. • Explain why 'a perpendicular from the centre to a chord bisects the chord'. • State the relationship between length of a chord and its distance from the centre of the circle. • Explain why 'equal chords are equidistant from the centre (and conversely)'. • Explain why 'among unequal chords, the longer chord is closer to the centre'. • Explain why 'the diameter is the longest chord'. • Explain why 'the angle subtended by an arc at the centre is double the angle subtended by the arc at any point on the remaining part of the circle'. • Explain why 'angles in the same segment of a circle are equal'. • Explain why 'the angle in a semicircle is a right angle'. • Determine when four given points are concyclic. • Explain why 'a quadrilateral with supplementary opposite angles is cyclic, and conversely'. • Explain how circular wheels have influenced transport, farming, building, and technology. • Identify cultural motifs involving circles, for example, the Dharmachakra, Ashoka Chakra, Sudarshan Chakra. • Use computational thinking to break down circle-related problems, apply geometric rules step-by-step, and verify properties of figures, such as chords, angles, and cyclic quadrilaterals through systematic reasoning.
	UNIT V: MENSURATION		**No. of periods : 27**
Mensuration : Area and Perimeter	• Perimeter of shapes • Perimeter of a circle: Introduction to Pi and its irrationality • Length of an arc	CG-5, C-5.1, CG-9	The student will be able to: • Define perimeter as the length around the boundary of any shape. • Explain that the circumference-to-diameter ratio is constant for all circles.

	• Area of shapes: rectangles, parallelograms, and triangles • Heron's formula • Squaring a rectangle: Proof from Baudhayana's Sulbasutras • Area of a circle: derivation • Area of the sector of a circle • Brahmagupta's formula for area of a cyclic 4-gon • Heron's formula as a special case of Brahmagupta's formula		• List historical approximations to π (from Archimedes, Aryabhata, and Zu Chongzhi). • Compute the circumference of a circle and the length of an arc. • Apply ideas of circle perimeter and arc-length to real-world contexts. • Explain why a median of a triangle divides it into two triangles of equal area. • Use Heron's formula to compute the area of a triangle from its sides. • Explain the classical problem of 'squaring' a given shape. • Explain how ancient civilisations approximated the area of a circle. • Compute the area of a circle using the formula. • Explain and use the formula for area of a sector of a circle. • Solve problems on areas of sectors and segments of circles. • State Brahmagupta's formula for the area of a cyclic quadrilateral in terms of its sides. • Explain why Heron's formula is a 'special case' of Brahmagupta's formula. • Explain the notion of 'special case' and 'generalisation' in mathematics. • Use computational thinking to break down shapes, apply step-by-step methods to calculate perimeter and area, recognise patterns across formulae, and understand generalisation and special cases in geometry.
Mensuration : Surface Area and Volume	• Surface areas and volumes of spheres (including hemispheres) and right circular cones	CG-5, C-5.1, CG-9	The student will be able to: • Recognise cuboids and cubes in real-life situations. • Compute the surface area and volume of a cuboid. • Explain how a cube is a 'special case' of a cuboid. • Describe a right circular cylinder using its radius and height. • Compute the surface area and volume of a cylinder. • Recognise cones in daily life, and describe them using radius and height.

			• Compute the surface area and volume of a cone. • Recognise a pyramid, and identify its base and apex. • Compute the surface area and volume of a pyramid. • Recognise spheres in real-life situations. • Compute the surface area and volume of a sphere. • Use computational thinking to systematically calculate, and compare surface areas and volumes of 3-D shapes by varying dimensions and analysing patterns.
	UNIT VI: STATISTICS AND PROBABILITY No. of periods : 24		
Statistics	• Graphical representation of data • Measures of central tendency	CG-6, C-6.1, CG-9	The student will be able to: • Collect, organise, visualise and interpret data to answer a statistical investigative question. • Compute and apply weighted average in different settings. • Read and interpret stacked bar graphs and 100% stacked bar graphs. • Apply computational thinking strategies to analyse real-life data, create appropriate graphical representations, and interpret mean, median and mode for decision-making.
Introduction to Probability	• Concept of probability and randomness • The probability scale • Empirical probability: analysing statistical data and performing experiments • Theoretical probability: sample space and events • Representing probability through tree diagrams and tables	CG-6, C-6.2, CG-9	The student will be able to: • Understand the concept of randomness. • Describe the likelihood of an event using the probability scale. • Estimate the empirical probability of the occurrence of an event by analysing statistical data. • Define theoretical probability of an event. • Apply the definition of theoretical probability to compute the probability of an event. • Compute probability of events with the help of tree diagrams and tables. • Use computational thinking strategies, such as pattern recognition and simulation, to model random experiments and estimate probabilities.

INTERNAL ASSESSMENT	**20 MARKS**
Pen Paper Test and Multiple Assessment (5+5)	10 Marks
Portfolio	05 Marks
Lab Practical (Lab activities to be done from the prescribed books)	05 Marks

Prescribed Books:

1. Mathematics - Textbook for class IX - NCERT Publication
2. Guidelines for Mathematics Laboratory in Schools, class IX - CBSE Publication
3. Laboratory Manual - Mathematics, secondary stage - NCERT Publication
4. Mathematics exemplar problems for class IX, NCERT publication

SCIENCE

Subject Code – 086 Classes IX (2026-27)

COURSE OUTLINE

CLASS IX (2026-27)

Cell **No. of Periods: 12**

Key Concepts		Learning Outcomes
• Discovery of cell • Plant and animal cells • Prokaryotic and eukaryotic cells • Cell as a structural and functional unit of life; structure and function of key organelles (nucleus, mitochondria, chloroplast, endoplasmic reticulum, vacuoles, plasma membrane, cell wall) • Permeability of cell membranes • Cellular division and cancer • Recent advancement in cell biology	C-3.1	• Differentiate between plant and animal cell, prokaryote and eukaryote • Describe the structural and functional features of cells • Explain the role of cells in the structure and functions of organisms • Explain activities inside the cell and its interactions with the environment • Demonstrate osmosis in cells • Prepare slides to observe cell structure
	C-3.2	• Differentiate between diffusion and osmosis
	C-3.3	• Explain the role of cell division mitosis and meiosis in creating similarities and variations
	C-4.2	• Identify and describe the role of biomolecules in the structure and function of cell
	C-5.2	• Cite case study related to the use of science in human life, for example, Leigh Syndrome and mitochondrial dysfunction
	C-5.3	• Apply learning of a structure and function of muscles cells or joints in dance form and/or sports
	C-6.1	• Discuss significant contributions of India, for example, Professor Arun Kumar Sharma for his work on chromosomes and methods for its studies
	C-7.1	• Recognise that the cell is a structural unit of life and functional unit of life processes
	C-7.2	• Pose questions, such as — Can we create artificial cell which behaves exactly like a natural living cell?

	C-8.1	• Exhibit creativity and design models using low cost or no-cost eco-friendly material to study structure and functions of cell and cell organelles
	C-8.2	• Carry out an experiment to understand the osmosis • Analyze result and present finding using scientific terms

Tissues **No. of Periods: 13**

Key Concepts		Learning Outcomes
Tissues: Introduction and importance • Level of organisation in the living organisms • Plant and animal tissues • Types of plant tissues • Meristematic tissues (types and function of each) • Permanent tissues (types, structure and function of each) • Animal tissues • Overview (epithelial, connective, muscular and nervous tissues — types, structure and function of each) • Elementary idea of musculoskeletal system • Care of musculoskeletal system: injuries, postural care, nutrition and exercise	C-4.2	• Differentiate between plant and animal tissues; meristematic and permanent tissues; simple and complex tissues; parenchyma, collenchyma and sclerenchyma; xylem and phloem; striated smooth and cardiac muscles; • Different types of joints • Relate the structure of the different types of tissues with their functions • Explain the role of various types of tissues in plants and animals • Describe the level of organisation in a multicellular organism
	C-5.3	• Establish the correlation between different tissues for fitness, for example, role of muscles, cartilage and bones in facilitating movement
	C-6.1	• Explain the importance of yoga exercises for physical agility and in maintaining the correct posture
	C-6.1	• Discuss significant contributions of India, for example, Professor Sipra Guha Mukherjee and Professor S.C. Maheshwari for their significant contribution in the plant cell and tissue culture research in India
	C-7.1	• Discuss the techniques and medical recommendations in recovery from muscular injuries

	C-8.2	• Carry out an experiment to understand the growth in plant due to apical meristem • Represent data in multiple modes, including appropriate figures, tables, graphs, or digital formats, interpret and draw inferences from the data • Analyse results and present findings using scientific terms • Communicate findings and conclusions effectively, such as those from experiments, activities, or projects, both orally and in written form

Reproduction **No. of Periods: 13**

Key Concepts		Learning Outcomes
• Introduction to different forms of reproduction — sexual and asexual • Types of asexual reproduction with examples • Sexual reproduction in flowering plants (flower and its parts, pollination, fertilisation, seed dispersal) • Sexual reproduction in humans: male and female reproductive systems (structure and function, formation of gametes, sperm and egg, fertilisation, pregnancy and development of embryo, menstrual cycle) • Reproductive health and hygiene • Introduction to birth control methods and importance	C-2.8	• Analyse the interactions between members of different groups of organisms, such as plants and pollinators
	C-3.2	• Compare asexual and sexual reproduction • Describe male and female reproductive organs in plants and animals • Differentiate between ovule and seed; ovary and fruit • Explain pollination and fertilisation
	C-3.3	• Explain how variations are introduced by sexual reproduction
	C-4.3	• Identify and explain the role of biotic and abiotic agents in seed dispersal and pollination
	C-5.1	• Illustrate the structure of male and female reproductive units or systems in plants and animals
	C-5.2	• Recognise the significance of contraceptive devices for population control and health including reproductive health
	C-6.1	• Describe the contribution of India to the understanding of human anatomy
	C-6.1	• Discuss significant contributions of India, for example, Professor Panchanan Maheshwari for

		laying the foundation of plant cell and tissue culture research in India
	C-7.1	• Recognise the importance of improvements in medical field for assisted reproductive technologies
	C-7.2	• Pose questions, such as — How do heavy metals harm reproductive organs? Can extreme heat affect fertility?

Diversity **No. of Periods: 12**

Key Concepts		Learning Outcomes
• Importance of classification • Five kingdoms and their key features with examples • Major division of animals and plants • Binomial nomenclature • Acellular entities: viruses	C-4.1	• Distinguish organisms based on certain characteristics, such as number of cells present, cellular organisation and mode of nutrition • Classify various organisms in groups, such as five kingdoms, on the basis of their cellular organisation and ecological role • Describe the significance and rules of binomial nomenclature • Apply binomial nomenclature on some common organisms in their surroundings
	C-2.8	• Analyse the interactions between members of different groups of organisms, such as lichens • Discuss ecological role of diverse organisms
	C--7.1	• Recognise three domains of classification of organisms on molecular basis

Exploring Mixtures and their Separation **No. of Periods: 12**

Key Concepts		Learning Outcomes
• Homogeneous and heterogeneous mixtures; • Solutions, suspensions, colloids and their properties • Various ways to express concentration of solutions (mass by mass percentage of a solution,	C-1.2	• Differentiate between homogeneous and heterogeneous mixtures on the basis of their properties • Demonstrate separation techniques, such as crystallisation, distillation, paper chromatography, sublimation, centrifugation and coagulation • Classify mixtures as solutions, suspensions, or colloids based on their properties • Explain the scientific principles behind different

mass by volume percentage of a solution, volume by volume percentage of a solution) • Separation techniques based on the physical properties of components, including crystallisation, distillation, paper chromatography, sublimation, centrifugation and coagulation		separation techniques • Apply the knowledge of homogeneous and heterogeneous mixtures in daily life • Define and calculate the concentration of solutions using mass by mass percentage, mass by volume percentage, volume by volume percentage • Analyse graphs of solubility and explain how the solubility of substances changes with temperature • Use scientific conventions and standard units to express concentrations • Handle common laboratory chemicals and apparatus safely • Relate separation techniques with practices observed in the local environment
	C-5.1	• Draw labelled diagrams or flow charts of separation techniques
	C-5.2	• Display awareness about the societal impact of chemistry in making life healthier, cleaner and sustainable
	C-5.3	• Correlate the phenomenon used in centrifugation to the spinning dance
	C-6.1	• Describe the cultural practices, like traditional methods of distillation • Display awareness about the contributions of Indian scientists, such as Dilip Mahalanabis
	C-7.1	• Demonstrate the use of small-scale or micro-scale experiments, such as crystallisation of copper sulfate, as an alternative to traditional methods
	C-7.2	• Poses question, such as — Can we create artificial blood that works just as real blood for all patients?
	C-8.1	• Exhibit creativity and work collaboratively in groups to create models of apparatus used for separating mixtures, such as a paperfuge and a distillation unit, using eco-friendly materials
	C-8.2	• Formulate hypotheses about scientific phenomena based on prior knowledge and understanding of scientific concepts, and predict the results of an experiment or investigation based on their hypotheses

		• Accurately use scientific instruments, apparatus and chemicals to collect data • Analyse results and findings using scientific terms • Represent findings in multiple modes, including appropriate figures, tables, graphs, or digital formats, and interpret and draw inferences from the findings • Communicate findings and conclusions effectively, such as those from experiments, activities or projects, both orally and in written form

Structure of an Atom **No. of Periods: 14**

Key Concepts		Learning Outcomes
• Atoms are the basic units of elements • Atoms consist of subatomic particles • Atomic Models (Thomson's Model, Rutherford's Model, and Bohr's Model) • Distributions of electrons in elements (up to 18 elements) • Symbols • Valency as the combining capacity • Atomic number • Mass number • Isotopes • Isobars	C-1.1	• Differentiate between subatomic particles (electrons, protons, and neutrons) based on their charge, and position in the atom • Illustrate how electrons are distributed in different energy levels, such as K, L, M, N ... or by numbers n = 1, 2, 3, 4 ... • Explain valence electrons, valency, atomic number, atomic mass, isotopes, and isobars • Calculate the number of electrons, protons, and neutrons of an element using its atomic and mass numbers • Interpret data, such as atomic mass, maximum number of electrons in a shell, and valency to classify elements accurately • Use scientific conventions as per international standards, such as notations for electron, proton, neutron, unified atomic mass unit (u), and distribution of electrons in various shells, such as K, L, M, N ...
	C-1.3	• Recognise and accurately apply the chemical symbols for the first eighteen elements according to IUPAC
	C-5.1	• Draw labelled diagrams of various atomic models, such as Thomson's model, Rutherford's model and Bohr's model • Create and present a role play, stage play, or story of 'Journey Inside the Atom' to display awareness about the contributions of key scientists in the

		discovery and development of atomic structure
	C-5.2	• Display awareness about the role of Indian scientists and their contributions to atomic science for peaceful purposes and explore how their works influenced India's scientific development
	C-5.3	• Display awareness about the societal impact of science in making life healthier, like the use of various isotopes in medicines to treat different diseases, and atomic energy in power generation • Design and develop games that utilise atomic number, mass number, and subatomic particle clues to accurately predict and identify elements
	C-6.1	• Display awareness about the contributions of the ancient Indian philosopher, Acharya Kanad's idea of indivisible particles (Parmanu)
	C-7.1	• Describe the use of the atomic mass unit (u) to measure the mass of atoms as per IUPAC recommendations • Describe scientific discoveries that explain how the structure of the atom has evolved over time through various atomic models proposed by different scientists
	C-7.2	• Pose question, such as — is it possible to completely understand everything that happens inside an atom?
	C-8.1	• Exhibit creativity and work collaboratively in groups to design different models of atoms
	C-8.2	• Formulate hypotheses about scientific phenomena by applying prior knowledge and understanding of scientific concepts, and predict the results of data based on the hypotheses • Analyse results and present findings using scientific terms • Correlate the results and conclusions of different models of atomic structure • Represent data in multiple modes, including appropriate figures, tables, graphs or digital formats, and interpret and draw inferences from the data

		• Communicate findings and conclusions effectively, such as those from experiments, activities or projects, both orally and in written form

Atoms and Molecules **No. of Periods: 14**

Key Concepts		Learning Outcomes
• Law of conservation of mass • Law of constant proportion • Dalton's Atomic theory • Molecules of elements, Molecules of covalent compounds and their properties • Ions, Ionic compounds and their properties • Writing chemical formulae • Molecular mass • Formula unit mass	C-1.1	• Differentiate between chemical species based on their properties or characteristics, such as atoms and molecules, elements and compounds, ionic and covalent compounds, cations and anions, formula unit mass and molecular mass• Plan and demonstrate activities to observe and verify the law of conservation of mass • Explain the Dalton's atomic theory, the law of conservation of mass, the law of constant proportions, and formation of ionic and covalent compounds • Calculate the charge on an ion, valency from the atomic number, the molecular and formula unit mass • Use scientific conventions, symbols, and valency to write the chemical formulae of simple compounds • Display awareness about the scientific discoveries, such as the contributions of Antoine Lavoisier, Joseph Proust, and John Dalton • Handle common laboratory chemicals and apparatus safely
	C-5.1	• Draw diagrams of electron dot structures of atoms and molecules
	C-5.2	• Describe how atoms and molecules can lead to beneficial applications, such as medicine, energy and peaceful use of atomic science • Relate atomic bonding to social bonding
	C-5.3	• Design educational games to write chemical formulae using symbols
	C-6.1	• Display awareness about the contributions of Indian scientists in promoting the peaceful use of atomic energy and the traditional use of the red pigment 'cinnabar' obtained from rocks

	C-7.1	• Describe the basic concepts that matter are made of particles; elements combine in fixed ratios to form compounds; the law of conservation of mass; and different types of bonding (ionic and covalent)
	C-7.2	• Pose question, such as — Are there any chemical changes that do not obey the law of conservation of mass?
	C-8.1	• Exhibit creativity and work collaboratively in groups to construct simple models of compounds
	C-8.2	• Formulate hypotheses about scientific phenomena by applying prior knowledge and understanding of scientific concepts and laws, and predict the results of data based on the hypotheses • Accurately use scientific instruments, apparatus and chemicals to collect data • Analyse results and findings using scientific terms • Represent data in multiple modes, including appropriate figures, tables, graphs or digital formats • Communicate findings and conclusions effectively, such as those from experiments, activities or projects, both orally and in written form

Earth as a System: Energy, Matter & Life **No. of Periods: 12**

Key Concepts		Learning Outcomes
• Earth as interconnected system • Nature of solar energy: solar radiation, electromagnetic • spectrum, and speed of light • Solar energy interaction with the Earth's Surface and differential heating of the Earth (the role of the atmosphere and the Earth's surface) • Differential warming of the Earth causes winds	C-2.8	• Explain the interconnectedness between different spheres of the Earth (biosphere, geosphere, hydrosphere, cryosphere and atmosphere) • Explain the nature of solar radiation • Explain that solar radiation is an electromagnetic waves having different Frequencies • Explain how heat from the Sun warms the Earth's surface differently based on the shape, latitude and tilt of the Earth • Explain the interaction of solar radiation with the Earth's surface and relate the differential heating of the Earth's surface with the atmospheric phenomena, such as air movement, evaporation, etc., and describe phenomena like mountain, valley, sea and land breezes

• Biogeochemical cycles (water cycle, carbon cycle, nitrogen cycle, oxygen cycle) • Human impact on Earth's system		• Describe how the latitude and tilt of the Earth, and absorption and reflection of solar radiation by different surfaces cause differential heating of the Earth's surface • Identify various components of the Earth that interact with solar energy • Explain the role of the atmosphere in influencing weather and climate on the Earth • Identify the reflectivity of different materials through reliable scientific sources, such as the internet and books • Describe how elements like carbon, nitrogen, oxygen and water are recycled between biotic and abiotic environments • Explain biogeochemical cycles, and the roles of biogeochemical cycles in circulating matter and energy continuously between the non-living environment (abiotic) and living (biotic) organisms, making nutrients available, and maintaining environmental balance
	C-6.1	• Reflect the changing nature of Earth's environment through our traditional knowledge
	C-7.2	• Pose questions, such as — What will happen if there is no differential heating of the Earth?
	C-8.1	• Draw flow charts, concept maps for biogeochemical cycles, differential heating of the Earth's surface and Electromagnetic spectrum
	C-8.2	• Formulate hypotheses about scientific phenomena based on prior knowledge and understanding of differential heating of the Earth and biogeochemical cycle • Predict the results of an experiment or investigation based on their hypotheses • Communicate findings and conclusions effectively, such as those from experiments, activities or projects, both orally and in written form

Motion **No. of Periods: 13**

Key Concepts		Learning Outcomes
• Motion — displacement, velocity, acceleration • Graphical representation of motion for an object moving in a straight line in one direction (with constant velocity, and constant acceleration) • Kinematic equations for motion in a straight line with constant acceleration (by graphical method) • Elementary idea of uniform circular motion	C-2.1	• Differentiate between distance travelled and displacement, and speed and velocity for objects moving in a straight line • Define displacement, velocity, acceleration, and uniform circular motion • Express displacement, velocity, acceleration in appropriate SI units • Plot and interpret position-time graphs and velocity-time graphs to describe the motion of an object moving in a straight line in one direction (with constant velocity and constant acceleration) • Calculate average velocity from position-time graph, displacement and average acceleration from velocity-time graph • Derive kinematic equations for motion in a straight line with constant acceleration by graphical method • Calculate values of unknown physical quantities from the given physical quantities, using kinematic equations • Derive the expression of speed for uniform circular motion
	C-8.1	• Analyse real-life events and phenomena, and identify the key factors that influence their Behaviour.
	C-8.2	• Formulate hypotheses about scientific phenomena based on prior knowledge and understanding of scientific concepts, theories, laws, and principles • Predict about the outcome of an experiment or investigation based on their hypotheses • Identify the variables that are relevant to a scientific investigation and determine how to control or manipulate them • Accurately use scientific instruments and equipment to collect data • Represent data in multiple modes, including tables, graphs and visual representations, and interpret and draw inferences from the data • Communicate their findings using scientific terminology and effectively communicate their conclusions to others

Force and Laws of Motion **No. of Periods: 13**

Key Concepts		Learning Outcomes
• Force; balanced and unbalanced forces • Force of friction • Newton's first law of motion • Newton's second law of motion • Newton's third law of motion	C-2.1	• Explain that force has magnitude as well as direction • Identify situations in which balanced and unbalanced forces are acting on an object • Explain the role of friction on the motion of objects • Recognise that for an object moving with constant velocity, the net force is zero, whereas a change in velocity (acceleration) is caused by a force • State and explain Newton's first law of motion • State and explain Newton's second law in terms of mass and acceleration • Calculate force using mathematical expression of Newton's second law of motion • Define SI unit of force • State and explain Newton's third law of motion • Apply Newton's laws of motion to explain everyday life events
	C-8.1	• Analyse real-life events and phenomena, and identify the key factors that influence their behaviour • Develop a model to represent real-life event • Use models to manipulate variables and predict results
	C-8.2	• Formulate hypotheses about scientific phenomena based on prior knowledge and understanding of scientific concepts, theories, laws, and principles • Predict about the outcome of an experiment or investigation based on their hypotheses • Identify the variables that are relevant to a scientific investigation and determine how to control or manipulate them • Accurately use scientific instruments and equipment to collect data • Represent data in multiple modes, including tables, graphs and visual representations, and interpret and draw inferences from the data • Communicate their findings using scientific terminology and effectively communicate their conclusions to others

Work, Energy and Simple Machines **No. of Periods: 13**

Key Concepts		Learning Outcomes
• Concept of work; work done by a constant force • Work-Energy theorem • Mechanical energy, kinetic and potential energy, and conversion between potential energy and kinetic energy • Conservation of energy • Power • Simple machines and their mechanical advantage (pulley, inclined plane, lever)	C-2.5	• Define work done by a constant force and its SI unit • Calculate work done by a force using mathematical expression • State work-energy theorem • Explain the concept of energy and state its SI unit • Name forms of energy and identify their interconversion in surroundings (elementary idea) • Define kinetic energy of a moving object and derive its mathematical expression • Define potential energy for an object raised to a height and derive its mathematical expression • Calculate kinetic and potential energy using mathematical expressions • Explain conversion between potential energy and kinetic energy (for the case of an object under free fall) • State the law of conservation of energy • Define power and its unit • Calculate power using its mathematical expression
	C-2.6	• Identify different simple machines (pulley, inclined plane and lever) • Define mechanical advantage and calculate its value for simple machine • Demonstrate and explain mechanical advantage of simple machines their conclusions to others
	C-8.1	• Analyse real-life events and phenomena, and identify the key factors that influence their behaviour • Develop model to represent real-life event • Use models to manipulate variables and predict results
	C-8.2	• Formulate hypotheses about scientific phenomena based on prior knowledge and understanding of scientific concepts, theories, laws, and principles • Predict about the outcome of an experiment or investigation based on their hypotheses • Identify the variables that are relevant to a scientific

		investigation and determine how to control or manipulate them • Accurately use scientific instruments and equipment to collect data • Represent data in multiple modes, including tables, graphs and visual representations, and interpret and draw inferences from the data • Communicate their findings using scientific terminology and effectively communicate their conclusions to others

Sound **No. of Periods: 11**

Key Concepts		Learning Outcomes
• Production of sound • Propagation of sound (as a longitudinal wave through a medium) • Graphical representation of sound wave • Characteristics of sound wave (wavelength, frequency, time period, amplitude, intensity, speed) • Human perception of sound (pitch, loudness) • Propagation of sound in different media (solid, liquid) • Reflection of sound (echo, reverberation), echolocation	C-2.7	• Demonstrate the production of sound in multiple ways (through vibration of strings, membranes, air columns) using materials in surroundings • Explain that sound is produced by vibrations • Demonstrate that sound can travel through different mediums (air, solid and liquid) • Describe that sound needs a medium for propagation • Explain that sound travels as a longitudinal wave • Describe the characteristics of sound waves the (wavelength, frequency, time period, amplitude, intensity and speed) • Analyse graphs representing sound • Write relationship between time period and frequency of sound wave • Derive mathematical expression for speed of sound • Calculate speed of sound using its mathematical expression • Explain human perception of sound in terms of audible range, loudness and pitch of sound • Describe reflection of sound, and apply it to echo and reverberations in surroundings • Explain the use of sound waves for echolocation
	C-5.3	• Describe music in terms of characteristics of sound waves, such as loudness and pitch
	C-6.1	• Name historical buildings designed for echoes, such as whispering gallery of Gol Gumbaz

		• Display awareness about Sir C.V. Raman
	C-8.1	• Analyse real-life events and phenomena, and identify the key factors that influence their behaviour • Develop model to represent real-life event • Use models to manipulate variables and predict results
	C-8.2	• Formulate hypotheses about scientific phenomena based on prior knowledge and understanding of scientific concepts, theories, laws, and principles • Predict about the outcome of an experiment or investigation based on their hypotheses • Identify the variables that are relevant to a scientific investigation and determine how to control or manipulate them • Accurately use scientific instruments and equipment to collect data • Represent data in multiple modes, including tables, graphs and visual representations, and interpret and draw inferences from the data • Communicate their findings using scientific terminology and effectively communicate their conclusions to others

Practical will be announced shortly.

Assessment Structure	Marks
Annual Examination (03 hrs.)	80 Marks
Internal Assessment • Periodic Assessment - 05 marks + 05 marks • Subject Enrichment (Practical Work) - 05 marks • Portfolio - 05 marks	20 Marks
Total	100 Marks

PRESCRIBED BOOKS:

- Science-Textbook for class IX-NCERT Publication
- Assessment of Practical Skills in Science-Class IX - CBSE Publication
- Laboratory Manual-Science-Class IX, NCERT Publication
- Exemplar Problems Class IX – NCERT Publication

Social Science
Subject Code-087
Class - IX (2026-27)
COURSE OUTLINE

Class IX-2026-27			
Part 1			
S. No.	**Theme (time allocation in instructional hours)**	**Outline/Concepts**	**Learning Outcomes and Competencies Students will be able to:**
1.	Understanding Social Science (4 Hours)	• Meaning, scope and relevance of Social Science • Understanding Social Science from an Indian perspective	• Explain the relevance of studying Social Science to understand society, environment, economy, and governance in our lives. • Explain the meaning and scope of Geography, History, Political Science, and Economics as disciplines and recognise their interconnections. • Appreciate diversity, inclusivity, sustainability, and equity as guiding values when studying society and making decisions.
2.	Shaping of the Earth's Surface (8 Hours)	• Theory of plate tectonics • Interior of the Earth • Role of weathering and erosion; agents of gradation — river, waves and currents, wind, glaciers, and underground water • Landforms and disasters: earthquakes, landslides, avalanches, Glacial Lake Outburst Flood (GLOF) and duststroms	C4.2 • Describe the concept of plate tectonics and analyse its relevance in understanding Earth's dynamics. • Locate major tectonic plates on a world map. • Explain processes of weathering and erosion with suitable examples. • Identify the prominent agents of gradation operating in a given region. • Describe major landforms and explain the processes involved in their formation. • Explain the causes of natural disasters and propose strategies for their mitigation.

3.	Atmosphere and Climate (7 Hours)	• Structure and composition; elements of weather and climate • Seasons of India and monsoons • Climate change • Floods Carbon footprint	C4.3, C4.4, C4.5 • Explain the different atmospheric layers and represent them using sketches and diagrams. • Observe and analyse local winds and their impact. • Understand the impact of the Indian monsoon on life, agriculture, and livelihoods across different regions.
			• Explain the causes and effects of climate change. • Represent climatic data (temperature, rainfall, etc.) through appropriate graphs, charts, or diagrams. • Analyse how climate change influences the frequency and intensity of natural disasters.
4.	Early Humans and Beginning of Civilisation (9 Hours)	• Cultural development from 2 million years ago • Early human history, periodisation: Archaeological ages • Who are human ancestors? • Palaeolithic hunter-gatherers and use of stone tools	C1.2, C2.1, C2.2, C2.3 • Describe how prehistoric time divisions are organised. • Explain how humans lived before the invention of writing • Understand the beginning of the settled life with development of agriculture, and domestication of plants and animals. • Explore the factors of urban development and transformation through time.
		• Mesolithic transition to food production: Mesolithic sites and tools • Neolithic and the beginning of farming: Neolithic revolution domestication of plants and animals • Harappan and contemporary cultures • Mesopotamian, egyptian, and chinese civilisation	• Appreciate the diversity of crafts and trade, and their role the establishment of prosperous economy. • Understand the diversity of food habits. • Describe the social, political, and religious structures of the civilisations of Egypt and Mesopotamia.

5.	State and Society (upto 1000 CE) (9 Hours)	• Vedic Age — geography; texts; rituals; political institutions, and social order • Administrative structure of early empires • Quest for knowledge — educational heritage, institutions, knowledge traditions, and cultural practices	C1.3, C2.3, C3.1, C1.4 • Explain various facets of Vedic society and polity. • Appreciate the achievements of Indian empires and their cultural legacy. • Understand the knowledge traditions and practices of India. • Understand the foundations of the Indian social and political institutions and their continuity.
		• Traders and trade routes, guilds and merchants, crafts and industries	
6.	Democracy (9 Hours)	• Meaning features and types of democracy • Roots of democracy in India • Challenges to democracy in India • Democratic systems in the world	C5.1, C5.2 • Understand the features of democracy. • Appreciate early democratic traditions in India and how they influenced modern democracy. • Differentiate between parliamentary and presidential systems. • Identify examples of both systems across countries, such as India, USA, France, Russia, and Canada.

7.	Elections (9 Hours)	• Factors of importance of elections • Electoral systems • Delimitation Commission • Election Commission of India and its role • Constituency, electoral rolls, enumerators • Party system in India	C5.2, C5.3, C5.4, C5.5, C6.2, C6.3, C6.4, C9.1 • Identify factors highlighting importance of elections in a democracy. • Categorise three types of electoral systems and list examples. • Identify the major laws that govern the conduct of elections in India. • Describe the main provisions of the Representation of the People Acts. • Define the concept of delimitation and its purpose in the Indian electoral system. • Identify the role and functions Election Commission of India (ECI) in the electoral process. • Explain constituency, electoral roll, enumerator. • Understand the party system in India. • Explain the meaning and features of a coalition government in the Indian political system. Explain key provisions of the Anti-Defection Law with reference to political instability and the need for anti-defection measures.
8.	Building Blocks in Economics (7 Hours)	• Scarcity of resources, opportunity cost and the need for making choice. What do economists do?	C8.2 • Explain the meaning of scarcity, choice, and opportunity cost in everyday life, and economic decision-making. • Describe what economists do and how they study production, distribution, and consumption of goods and services.
		• What to produce, how to produce, and for whom to produce? • Difference between market, centrally planned, and mixed economic systems • Welfare economy	• Recognise how economic analysis helps in policy-making and solving real-world issues. • Describe the three central problems of an economy — what to produce, how to produce, and for whom to produce. • Identify and differentiate the characteristics of planned, free market, and mixed economic systems. • Explain the concept of a welfare economy and the importance of social safety nets.

9.	The Price Puzzle: What Drives the Market (8 Hours)	• Laws of demand and supply • Real-world deviations from textbook theory, such as in case of necessities, luxury goods, perishable items, and expectations • Some related concepts — price ceilings and market failures (externalities, information asymmetry, public goods)	C7.1 • Explain the Law of Demand and Law of Supply with the help of real life examples. • Interpret how changes in price affect the quantity demanded and quantity supplied of goods and services. • Identify the equilibrium price and quantity where demand and supply intersect. • Analyse how changes in market conditions (e.g., increase in demand or supply) lead to surplus or shortage and affect equilibrium. • Explain the concept of price ceilings and how they can lead to shortages or black markets. • Understand market failures and identify their main types. • Understand public goods (non- excludable and non-rival goods like parks or street lighting).

Part 2

S. No.	Theme (time allocation instructional hours)	Outline/Concepts	Learning Outcomes (pertinent) CGs, Cs Students will be able to:
1.	Oceans and Life (7 Hours)	• Introduction to ocean relief, movement of ocean water- waves, tides and currents • Marine resources and their significance; open seas, navigation fishing, and livelihood concerns and challenges • Cyclones and Tsunamis — early warning systems • International maritime rules and regulations	C4.1, C4.2 • Explain the movement of ocean waters, including waves, tides, and currents. • Analyse the connections between ocean currents, and global and regional climate patterns. • Understand the importance of marine resources for human livelihoods and ecosystems. • Examine the relationship between oceans, climate, livelihoods, and natural disasters. • Highlight key rules, conventions, and international agreements governing ocean navigation. and the use of marine resources. • Explain the need for international cooperation and agreements in the sustainable use of ocean resources. • Construct models or sketches representing ocean relief.

2.	Life on Earth (7 Hours)	• Biomes: Distribution and characteristics; biosphere reserves in India • Forest and ecotourism; forest dwellers, their livelihoods, and challenges • Forest and wildlife conservation • Government efforts to support forest dwellers	C4.3, C4.4, C4.5, C4.6 • Identify the major biomes of the world and describe their key climatic conditions, characteristic flora, and fauna. • Locate biosphere reserves on the map of India. • Appreciate local traditional practices related to biodiversity conservation and analyse their effects. • Explain the concept and importance of biosphere reserves in conserving ecosystems and biodiversity. • Analyse the concept of ecotourism and discuss its role in promoting sustainable forest ecosystem and conservation. • Investigate the causes of forest fires in the local area, and prepare a plan for mitigation and prevention.
3.	Resistance and Resilience (1000 CE – 1700 CE) (9 Hours)	• Safeguarding sovereignty: resistance, alliances and confederacies • Development of art and architecture, languages and literature • The Bhakti tradition • Forts and fortifications • Expansion of Indian economy and state	C1.3, C1.4, C3.1 • Explain the cultural, political, and military contributions of regional kingdoms in India. • Appreciate how diverse communities and regions shaped India's history from 1000 CE to 1700 CE. • Explore how regional kingdoms adapted to changing political, economic, and cultural contexts over time. • Analyse the continuity of the civilisational history of India as a nation upto 18th century CE.
4.	India and the World-I (1900 BCE-1200 CE) (8 Hours)	• Trade and commerce — trade with Mesopotamia, Greece, Roman Empire, China and Southeast Asia • Cultural Connections — Interactions with Greece and Rome, Central Asia, China, and Influence on South East Asia	C1.2, C1.4, C6.1, C2.3, C9.1 • Explore India's relations with early civilisations of the world. • Identify the major articles of trade and the major trading ports. • Appreciate the significant contributions of India in diverse spheres in an integrated manner. • Appreciate the influence of Indian religion and culture, particularly in Southeast Asia.
		• Indian Knowledge Systems — Medicine, Mathematics and Astronomy, Medicine, Religion	

5.	Authority (10 Hours)	• The Roots of Authority: in Kautilya and *shukraniti- danda* and relationship with *nyaya* and *bala*; the types of *nyaya* and *bala* • Constitutional status of justice and security since ancient times • Links the role of citizens with the elections and the democratic institutions • Types of authority — functional, sensitive, and welfare-oriented	C5.1, C5.2, C 5.3 • Explain the roots of authority in Indian political thought. • Interpret the relationship between *Danda* (discipline/ force) and *Nyaya* (justice) as the twin foundations of authority, development, and security. • Trace the evolution of authority structures in India. • Understand the post- independence concept of justice and security. • Illustrate types of authority. • Develop an understanding of citizen discipline, justice, and strength. • Illustrate the role of citizens in authority.
6.	From Ideas to Startups (8 Hours)	• What is entrepreneurship and explain the resources required to start a business • Case studies of successful entrepreneurs • Creative destruction with examples • Start-up ecosystem in India. • Make in India initiative, role of MSMEs and the unorganised sector in India's economic growth. • Stages of starting and executing a business idea through a business plan • Some basic accounting concepts	C7.3 • Define entrepreneurship and explain its importance in innovation, job creation, and economic growth. • Understand the key resources for business. • Explain how resources are managed to produce goods and services. • Analyse real-world examples of successful entrepreneurs. • Describe the features of India's start-up ecosystem and initiatives like Make in India, Startup India, and Digital India. • Recognise the role of Micro, Small, and Medium Enterprises (MSMEs) and the unorganised sector in promoting employment, innovation, and inclusive growth. • Identify and explain the stages of starting a business from developing an idea to creating and executing a business plan. • Understand simple profit and loss. Identify the key components of a balance.

7.	Smart Ways to Manage Your Finances (6 Hours)	• Relevance of personal financial management in daily life • Inflation and its impact on purchasing power • Simple vs. compound interest rate • Budgeting • Various savings and investment options like fixed deposit, stocks, bonds, mutual funds, etc. • Risk and insurance • Personal income tax	CG8 • Explain what personal financial management means and why it is essential in everyday life. • Recognise how managing income, spending, saving, and investment helps achieve financial stability and long-term goals. • Explain the difference between simple interest and compound interest. • Prepare a simple personal or family budget showing income, expenditure, and savings. • Identify various savings and investment instruments. • Understand the relationship between risk and return in different investment types. • Understand the concept of income tax and why citizens are required to pay it.

Note-Course Structure will be provided shortly

CLASS IX (2025-26)
INTERNAL ASSESSMENT: 20 MARKS

Type of Assessment	Description	Marks
Periodic Assessment	Pen Paper Test	5
Multiple Assessment	Quiz, debate, role play, viva-voce, group discussion, visual expression, interactive bulletin boards, gallery walks, exit cards, concept maps, peer assessment, self- assessment etc. through interdisciplinary project , Report Writing on field visits, Commentaries/visual interpretations, site-map making	5
Subject Enrichment Activity	Project work (Interdisciplinary)	5
Portfolio	Classroom, work done (activities/assignments) reflections, narrations, journals etc. Achievements of the student in the subject throughout the year. Participation of the student in different activities like Heritage India quiz etc.	5

CLASS IX
PRESCRIBED TEXT BOOKS

S. No.	Name of the Book	Publisher
1	Social Science-Part 1	NCERT
2	Social Science-Part 2	NCERT

Vocational Education

Details of Syllabus

The curricular goal, competency and learning outcomes related to values and dispositions will be foundational, and will apply across the entire content and tasks related to the work assigned for students. Therefore, the learning outcomes for CG-2, which relates to values and dispositions, are indicated at the beginning of the tables mapping competencies and learning outcomes for Grades 9 and 10 below.

Grade 9

The curricular goal, competency and learning outcomes related to the development of values and dispositions will be common across all forms of work. Since these Learning Outcomes are foundational, no specific content is mapped to them.

For All Forms of Work

CG-2 Develops essential values or disposition while working across areas	
Competency	**Learning Outcomes**
C-2.1 Develops the following values while engaging in work • Attention to detail • Persistence and focus • Curiosity and creativity • Empathy and sensitivity • Collaboration and teamwork • Willingness to do physical work • Respect for the value of money	Students will be able to: • Keenly observe the usage of tools and materials during demonstration and asks relevant questions • Show care and respect towards people doing physical labour, irrespective of gender • Plan tasks with peers and helps others during difficulty at work • Rework or redo task for improved efficiency • Ask questions about functioning of tools and machines, and give suggestions for alternative use • Show willingness to do physical work, while enjoying working with tools and materials • Use resources judiciously • Describe life cycle cost
While the curricular goals and competencies will remain the same, the learning outcomes will be different for each form of work, to cater for the nature of each form.	

Work with Life Forms

The table below maps learning outcomes and content against the competencies for work with life forms in Grade 9. These are articulated in generic terms, so that they can be fulfilled through vocations that the state, board or schools may choose.

Themes	Theme Outlines/ Key Concepts	Learning Outcomes
Introduction to Vocational Area (Suggestive Instructional hours: 10 hours)	• Understanding the vocational area — contribution, livelihood ecosystems, value chains, employment opportunities • Conditions for plant growth	Students will be able to: **CG-1, C-1.1** • Describe the relevance of the vocation — with reference to society, nation and the world • Explore different sources of information and

Themes	Theme Outlines/ Key Concepts	Learning Outcomes
	under different geographical conditions • Using meteorological data from a DIY observatory • Testing input materials and making amendments • Quality criteria • Selection of work on the basis of guidelines	map resources to identify work assigned • Test suitability of growing medium, using appropriate tools and materials for physical observation and chemical testing (including technology or AI, if possible), and makes amendments where relevant • Use meteorological data to take decisions related to work **C-1.2** • Describe quality criteria related to inputs, process and output
Vocation-specific themes (Suggestive Instructional hours: 26 hours)	• Site visit • Developing process chart • Tools and materials: use, storage, safety protocols • Preparation of soil or growing medium, or shelter (as relevant) • Layout of space or shelter • Initiating and nurturing growth • Using nutrient supplement • Protection: pest control, managing disease, physical protection • Meeting water requirements • Harvesting: tools and processes • Layout of space for growing plants • Monitoring and supporting growth • Maintaining records related to costs, and growth and development • Safety protocols related to handling tools and performing tasks • Segregation and disposal of waste • Applying learning • outside school setting	Students will be able to: **CG-1, C-1.1** • Develop a process chart based on observation and interaction with experts, and plan to monitor work against milestones • Create and maintain conditions essential for growth and development of plants or animals, based on geographical conditions and local criteria, using appropriate tools and materials (including technology, if possible) • Prepare growing medium as per needs of the plant or animal, using appropriate tools and materials • Initiate growth of plant or animal (e.g., plants seeds, saplings, tubers; introduces spawn to water) as per requirements, using appropriate tools and materials • Set up a simple system for irrigation or providing water (using technology, if possible) as per schedule • Take steps to support development of plants — monitor growth by physical observation and using technology, if possible; provide nutrients and protection from physical harm, pests and diseases using appropriate tools and materials • Harvest, store and package produce using appropriate tools and materials • Maintain records of costing (inputs and cost of 'soft' services including time, human resource, etc.) and expenditure **C-1.2.** • Explore traditional and indigenous materials and methods

Themes	Theme Outlines/ Key Concepts	Learning Outcomes
		• Use technology or AI where relevant to optimize work • Apply safety protocols (including cyber safety) as prescribed for tools and materials • Reflect on improvements to optimise processes and use tools and materials • Dispose waste (e.g., crop stubble, leftover growing media) in an environment friendly manner **CG-3, C-3.1** • Explain how learnings can be applied outside the school

Work with Machines and Materials

The table below maps learning outcomes and content against the competencies for work with machines and materials in Grade 9. These are articulated in generic terms, so that they can be fulfilled through vocations the state/board/schools may choose

Theme	Theme Outlines/ Key Concepts	Learning Outcomes
Introduction to Vocational Area (Suggestive Instructional Hours: 10)	• Understanding the vocational area contribution, livelihood ecosystems, value chains, and employment opportunities • Properties of materials (wood, plastic, metal, clay, leather, etc.) • Introduction to technical or engineering drawing • Measurement based on technical or engineering drawing • Selection of materials and products to be developed based on the guidelines (including properties of materials) • Selection of work on the basis of guidelines • Quality criteria	**CG-1, C-1.1** Students will be able to: • Describe the relevance of the vocation with reference to society, nation, and the world • Explore different sources of information and map resources to identify work to be done • Determine products to be created based on the properties and availability of materials • Demonstrate the basics of technical or engineering drawing • Demonstrate measurement based on technical or engineering drawing **C-1.2** • Describe the quality criteria related to inputs, process, and output

Theme	Theme Outlines/ Key Concepts	Learning Outcomes
Vocation-specific themes (Suggestive Instructional Hours: 26)	• Site visit • Developing process chart • Tools and materials: use, storage, and safety protocols • Developing and refining prototypes or practising on a small sample • Estimation of requirements of materials • Testing product and making improvements • Finishing and packing (where relevant) the product • Maintaining records related to costs, and growth and development • Safety protocols related to handling tools and performing tasks • Segregation and disposal of waste • Applying learning outside the school setting	**CG-1, C-1.1** Students will be able to: • Develop a process chart based on observation and interaction with experts, and plan to monitor work against milestones • Create a detailed 2D sketch of the selected product indicating its design and dimensions, using technology where relevant • Estimate quantities of materials required, using appropriate tools, based on the 2D sketch • Develop, review and refine a prototype using alternative or waste materials or carry out a small part of the work • Follow guidelines and protocols to create the final product • Incorporate changes, as required, in the product based on testing and feedback • Finish and package the product to ensure it is usable and presentable • Maintain records of costing (inputs and cost of 'soft' services including time, manpower, etc.) and expenditure **C-1.2** • Demonstrate optimal usage of tools and material (e.g., reusing waste wood, using waste for packaging) • Demonstrate effective and efficient use of tools (e.g., holding, using, etc.) • Use technology or AI where relevant to optimise work • Apply safety protocols (including cyber safety) to each task, while ensuring the safety of self and others • Dispose waste as per protocols and environmental considerations **CG-3, C-3.1** • Explain how learnings can be applied outside school

Work in Human Services

The table below maps learning outcomes and content against the competencies for work in human services in Grade 9. These are articulated in generic terms, so that they can be fulfilled through vocations the state/board/schools may choose.

Theme	Theme Outlines/ Key Concepts	Learning Outcomes
Introduction to Vocational Area (Suggestive Instructional Hours: 10)	• Understanding the vocational area contribution, livelihood ecosystems, value chains, and employment opportunities • Understanding the vocational area contribution, livelihood ecosystems, value chains, employment opportunities • Suitable environment • Sensitive and empathetic communication with the person(s) to whom service is to be provided • Selecting work on the basis of guidelines • Quality criteria	**CG-1, C-1.1** Students will be able to: • Describe the relevance of the vocation with reference to society, nation, and the world • Explore different sources of information and map resources to identify the work to be done • Demonstrate an understanding of the setting up of a service environment • Demonstrate an understanding of a service mindset **C-1.2** • Describe the quality criteria related to inputs, process and output based on observation and expert interaction
Vocation-specific themes (Suggestive Instructional Hours: 26)	• Site visit • Developing process chart • Tools and materials: use, storage, and safety protocols • Processes of needs identification, including tools used for understanding needs of person(s) to whom service is to be provided (e.g., questionnaire, checklist, etc.) • Designing solutions to meet the needs of the person(s) to whom service is to be provided • Tools used for providing service (e.g., thermometer, blood pressure machine, reading health records and prescriptions, tools for personal hygiene, and tools for maintaining hygienic surroundings) • Costs and billing for services	**CG-1, C-1.1** Students will be able to: • Prepare a process chart outlining the key elements of the service to be provided to monitor the work against milestone • Identify the needs of the person(s) for whom service is to be provided through different ways (e.g., questionnaire, interview, etc.) • Reflect on the possible challenges while providing service and possible actions to counter them • Arrange the physical environment as per the comfort of the person(s) to whom service is to be provided • Prepare and finalise a contract for providing service • Establish the norms for communication during service, including active and empathetic listening • Create polite, respectful and responsive environment in the context of the service

Theme	Theme Outlines/ Key Concepts	Learning Outcomes
	• Process of review of the service provided • Method of documentation for feedback and reflection • Safety protocols related to sensitivity and confidentiality • Segregation and disposal of waste • Service provided by family and community • Providing service outside the school	to be provided • Maintain the records of costing (inputs and cost of 'soft' services including time, manpower, etc.) and expenditure • Track progress against process chart **C-1.2** • Use technology or AI where relevant to optimise work • Follow safety protocols as indicated by the expert or teacher (including cyber safety and confidentiality) • Follow protocol for waste disposal where relevant **CG-3, C-3.1** • Identify elements of the service received at home, based on learning • Explain how learnings are applied to provide service at home

Assessment

The focus of Vocational Education assessment in Grades 9 and 10 is to assess skills that are transferable across different kinds of work. Given the nature of vocational knowledge, the primary focus of assessment should be demonstrated performance — not written examination alone.

Mode of Assessment: Students must be assessed on the basis of the competencies, curricular goals & learning outcomes, as defined in the syllabus.

Suggestive tools of assessment:

i. Teacher's Observations (based on demonstrated performance via rubrics, checklists)
ii. Student Portfolio
iii. Oral Presentations
iv. Self and Peer Assessments
v. Paper and Pencil tests (Situation Based Questions)

Detailed assessment guidelines shall be shared with schools once the textbooks are published by NCERT.

What is to be assessed?	What are the criteria for assessment?	Examples of tools and sources of evidence
Values and dispositions related to work	• Observation and questioning during practice • Dignity of labour for all kinds of work • Collaboration with peers • Efficiency in work • Pursuit of quality • Creativity and problem-solving • Willingness and motivation • Optimal use of all resources	• Teachers' observations • Oral presentation or viva-voce • Self-assessment
Selection, use, and maintenance of tools and equipment	• Selection of appropriate tools for task • Correct usage of tools • Keeping materials and equipment ready for use • Following safety protocols • Proper storage of tools and materials post usage	• Teachers' observations • Oral presentation or viva-voce • Paper and pencil test • Portfolio
Knowledge to perform tasks	• Conceptual knowledge necessary to do work • Context and relevance of work • Sustainable and/or indigenous practices • Knowledge of procedures and protocols (including safety and documentation) • Planning templates or creating process charts • Mapping and budgeting of resources	• Oral presentation or viva-voce • Paper and pencil test • Portfolio
Performance of tasks	• Sequencing of tasks • Creating appropriate conditions or gathering tools and materials • Estimation of material or need identification • Carrying out tasks using tools and materials • Improvements based on testing or feedback • Monitoring progress against plan • Workplace organization • Waste management	• Teachers' observations • Portfolio • Oral presentation of the task performance (rationale of performing the task)
Place of vocation in the world of work	• Importance of vocation • Livelihood ecosystem	• Oral presentation or viva-voce • Paper and pencil test • Site visit reports or observation notes
Applying quality criteria	• Identifying criteria for evaluating quality of products • Reflection on processes	• Oral presentation or viva-voce • Paper and pencil test • Portfolio • Self-assessment
Application of vocational competencies at home	• Use of vocational skills and knowledge at home	• Oral presentation or viva-voce • Paper and pencil test • Portfolio

INFORMATION TECHNOLOGY (SUBJECT CODE - 402)

CLASS – IX (Session 2026-2027)

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

	UNITS	NO. OF HOURS for Theory and Practical		MAX. MARKS for Theory and Practical
Part A	**Employability Skills**			
	Unit 1 : Communication Skills-I	10		2
	Unit 2 : Self-Management Skills-I	10		3
	Unit 3 : ICT Skills-I	10		1
	Unit 4 : Entrepreneurial Skills-I	15		3
	Unit 5 : Green Skills-I	05		1
	Total	**50**		**10**
Part B	**Subject Specific Skills**	**Theory**	**Practical**	**Marks**
	Unit 1: Introduction to IT- ITeS industry	2	4	4
	Unit 2: Data Entry & Keyboarding Skills	4	10	6
	Unit 3: Digital Documentation	10	26	10
	Unit 4:Electronic Spreadsheet	18	35	10
	Unit 5: Digital Presentation	10	31	10
	Total	**44**	**106**	**40**
Part C	**Practical Work**			
	Practical Examination			15
	Written Test			10
	Viva Voce			10
	Total			**35**
Part D	**Project Work/ Field Visit**			
	Practical File/ Student Portfolio			10
	Viva Voce			05
	Total			**15**
	GRAND TOTAL	**200**		**100**

DETAILED CURRICULUM/TOPICS:

Part-A: EMPLOYABILITY SKILLS

S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills-I	10
2.	Unit 2: Self-Management Skills-I	10
3.	Unit 3: Basic Information and Communication Technology Skills-I	10
4.	Unit 4: Entrepreneurial Skills-I	15
5.	Unit 5: Green Skills-I	05
	TOTAL	**50**

NOTE: Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

Part-B – SUBJECT SPECIFIC SKILLS

- Unit 1: Introduction to IT- ITeS industry
- Unit 2: Data Entry & Keyboarding Skills
- Unit 3: Digital Documentation
- Unit 4: Electronic Spreadsheet
- Unit 5: Digital Presentation

UNIT 1: INTRODUCTION TO IT–ITeS INDUSTRY

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Appreciate the applications of IT	• Introduction to IT and ITeS, BPO services, • BPM industry in India, • Structure of the IT-BPM industry, • Applications of IT in home computing, everyday life, library, workplace, education, entertainment, communication, business, science and engineering, banking, insurance, marketing, health care, IT in the government and public service	- Identify and list the various IT enabled services, Observe the application of IT in various areas.

UNIT 2: DATA ENTRY AND KEYBOARDING SKILLS

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
1.	Use keyboard and mouse for data entry	• Keyboarding Skills, • Types of keys on keyboard, Numeric keypad, • Home keys, Guide keys, • Typing and deleting text, • Typing ergonomics, • Positioning of fingers on the keyboard, Allocation of keys to fingers on four different rows, • Pointing device – Mouse, Mouse operations.	• Identify the keys and its use on the keyboard, • Demonstrate to use various keys on the keyboard, • Demonstrate to type the text, numbers, special character using appropriate keys on the keyboard, • Practice the correct typing ergonomics, • Practice to place fingers on correct key in four different row of keyboard, • Practice various mouse operations.
2.	Use typing software	• Introduction to Rapid Typing Tutor, • Touch typing technique, • User interface of Typing Tutor, • Typing text and interpret results, • Working with lesson editor, • Calculating typing speed, • Typing rhythm.	• Identify the user interface of • typing tutor, • Practice to type text in typing tutor software and interpret the results, • Practice to work in lesson editor, • Calculate the typing speed • Practice to improve typing • Using typing tutor software.

UNIT 3: DIGITAL DOCUMENTATION

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
1.	Create a document using a word processor	• Introduction to word processing, • Word processing applications, • Introduction to Word Processing tool • Creating a document, Parts of a Word Processor Window,	• List the available word processing applications. • Introduce with the parts of the main window. • Change document views. • Start a new document. • Open an existing document. • Save a document. • Close a document.
2.	Apply Editing features	• Text editing – Undo and Redo, • Moving and copying text, • Copy and Paste, • Selecting text, • Selection criteria,	• Editing of text in a document • Demonstrate to use undo and redo option, • Use the keyboard and mouse options to select, cut, copy, paste, and move text.

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
		• Selecting non-consecutive text items, • Selecting a vertical block of • text, • Find and replace option, • Jumping to the page number, • Non-printing characters, • Checking spelling and grammar, • Using Synonyms and Thesaurus.	• Demonstrate to select nonconsecutive text items, vertical block of text, • Search and replace text in a document. • Jump to the given page number in a document, • Insert non-printing characters in a document, • Apply Spelling and grammar option of document. • Demonstrate to use Synonyms and Thesaurus.
3.	Apply formatting features	• Page style dialog • Formatting text – Removing manual formatting, Common text formatting, Changing text case, Superscript and Subscript • Formatting paragraph – Indenting paragraphs, Aligning paragraphs, Font colour, highlighting, and background colour, Using bullets and numbering, Assigning colour, border and background to paragraph. • Page formatting – setting up basic page layout using styles, Inserting page break, Creating header/footer and page numbers, • Defining borders and backgrounds, Inserting images shapes, special characters in a document, Dividing page into columns, Formatting the shape or image.	• Apply various text formatting options for the text, • Demonstrate to format paragraphs – indent/align paragraphs, assign font colour, highlighting, and background colour, • Assign number or bullets to the lists items • Demonstrate to assign colour, border and background to paragraph • Demonstrate the page formatting – set up basic page layout using styles, • Insert page break, Create header/footer and page numbers • Define borders and backgrounds • Insert images, shapes, special characters in a document • Divide page into columns, • Format the shape or image.
4.	Create and work with tables	• Creating table in Word Processor • Inserting row and column in a table • Deleting rows and columns • Splitting and merging tables • Deleting a table • Copying a table • Moving a table.	• Demonstrate and do the following in Word Processor: • Create table, • Insert and delete rows and column in a table, • Split and merge tables, • Delete a table, • Copy or move from one location to another location of document.

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
5.	Use Print Options	• Printing options in Word Processor. • Print preview, • Controlling printing, • Printing all pages, single and multiple pages.	• Demonstrate to print the document, selected pages in the document • Print the document with various options, • Preview pages before printing.
6.	Understand and apply mail merge	• Introduction to mail merge • Concept of data source for mail merge.	• Demonstrate to print the letters using mail merge, • Do the following to achieve • Create a main document, • Create the data source, • Enter data in the fields, • Merge the data source with main document, • Edit individual document, • Print the merged letter, • Save the merged letter.

UNIT 4: ELECTRONIC SPREADSHEET

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
1.	Create a Spreadsheet	• Introduction to spreadsheet application • Starting a spreadsheet • Parts of a spreadsheet • Worksheet – Rows and Columns, Cell and Cell Address, • Range of cells – column range, row range, row and column range.	• Start the spreadsheet, • Identify the parts of Calc, • Identify the rows number, column number, cell address, • Define the range of cell, • Identify row range, column range, row & column range
2.	Apply formula and functions in spreadsheet	• Different types of data, • Entering data – Label, Values, Formula • Formula, how to enter formula, • Mathematical operators used in formulae, • Simple calculations using values and operators, • Formulae with cell addresses and operators, • Commonly used basic functions in a spreadsheet – SUM, AVERAGE, MAX, MIN, Count • Use of functions to do calculations.	• Demonstrate to enter the text, numeric data in a cell, • Identify the label, values and formula in the cell, • Demonstrate to enter formula in a cell, • Construct the formula using mathematical operators, • Identify formulae with cell addresses and operators, • Identify the correct syntax of formula, • Use the basic functions to perform calculations on data.

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
3.	Format data in the spreadsheet	• Formatting tool, • Use of dialog boxes to format values, • Formatting a range of cells with decimal places, • Formatting a range of cells to be seen as labels, • Formatting of a cell range as scientific, • Formatting a range of cells to display times, • Formatting alignment of a cell range, • Speeding up data entry using the fill handle, • Uses of fill handle to copy formulae.	• Identify the formatting tool, • Demonstrate to use of dialog boxes to format values, • Demonstrate to format range of cells with decimal places, • Demonstrate to format a range of cells to labels, • Demonstrate to format of a cell range as scientific, • Demonstrate to format a range of cells to display time, • Demonstrate to align cell data range, • Demonstrate to create • number series using fill handle, • Copy formula by dragging the formula using fill handle.
4.	Understand and apply Referencing	• Concept of referencing, • Relative referencing, • Mixed referencing, • Absolute referencing.	• Demonstrate to use Relative referencing in spreadsheet, • Demonstrate to use Mixed referencing in spreadsheet, • Demonstrate to use Absolute referencing in spreadsheet.
5.	Create and insert different types of charts in a spreadsheet	• Importance of chart in spreadsheet • Types of chart	• Create different types of charts supported by a spreadsheet, • Illustrate the example of chart in a spreadsheet.

UNIT 5: DIGITAL PRESENTATION

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
1.	Understand features of an effective presentation	• Concept of presentation, • Elements of presentation, • Characteristics of an effective presentation	• Identify and list the elements of presentation, • List the characteristics of an effective presentation.
2.	Create a presentation	• Introduction to presentation software, • Opening a presentation software • Parts of presentation window, • Closing a presentation • Creating a presentation using template, • Selecting slide layout, • Saving a presentation, • Running a slide show, • Save a presentation in PDF, • Closing a presentation, • Using Help.	• Start the presentation application • various components of main Impress window • Observe the different workspace views. • Create a new presentation using wizard. • Run the presentation, • Save the presentation, • Close the presentation, • Demonstrate to use Help in presentation.

S. No.	LEARNING OUTCOMES	THEORY	PRACTICAL
3.	Work with slides	• Inserting a duplicate slide, • Inserting new slides, • Slide layout, • Copying and moving slides, • Deleting and renaming slides • Copying, moving and deleting contents of slide, • View a presentation, • Controlling the size of the view, • Workspace views – Normal, Outline, Notes, Slide sorter view.	• Demonstrate to insert a new slide and duplicate slide in a presentation, • Change the slide layout, • Demonstrate to copy and move slides in the presentation, • Demonstrate to copy, move and delete contents of the slide, • Demonstrate to view a presentation in different views.
4.	Format text and apply animations	• Formatting toolbar, • Various formatting features, • Text alignment, • Bullets and numbering. • Custom Animation	• Identify and list the various options in formatting toolbar, • Apply the appropriate formatting option • Align the text in presentation, • Apply bullets and numbering to the list items in presentation. Apply Animation
5.	Create and use tables	• Inserting tables in presentation, • Entering and editing data in a table, • Selecting a cell, row, column, table, • Adjusting column width and row height, • Table borders and background	Demonstrate the following: • Insert table in presentation, • Enter and edit data in a table, • Select a cell, row, column, table, • Adjust column width and row height, • Assign table borders and background.
6.	Insert and format image in presentation	• Inserting an image from a file, • Inserting an image from the gallery, • Formatting images, • Moving images, • Resizing images, • Rotating images, • Formatting using the Image toolbar, • Drawing graphic objects – line, shapes, • Grouping and un-grouping objects	• Demonstrate to insert an image from file, gallery in presentation, • Apply formatting options to image in presentation, • Demonstrate to move, resize and rotate images, • Apply formatting options of Image toolbar, • Drawing line, shapes using graphic objects, Demonstrate to group and ungroup objects.
7.	Work with slide master	• Slide masters, • Creating the slide masters, • Applying the slide masters to all slide, • Adding transitions.	• Create the slide masters, • Apply the slide masters to the • presentation, • Add transitions to presentation.

NATIONAL CADET CORPS (N.C.C) – (Subject Code 076)
Class IX (2026-27)

Max. Marks - 70

Common Subjects

Unit-1: The NCC

Aim: To acquaint cadets with the aims and objectives of NCC

Scope: Introduction, aims, organization and general information about NCC

- Aims and Objectives of NCC
- Organization and Training and NCC Song
- Incentives of Joining NCC

Unit-2: National Integration and Awareness

Aim: To inculcate sense of patriotism, secular values and motivate cadets to contribute towards nation building through national unity and social cohesion

Scope: The concepts of National Interests, Objectives and integration, Unity in diversity and cultural heritage of India

- Religions, Culture, Traditions and Customs of India
- National Integration: Importance and Necessity
- Problems/ Challenges of National Integration
- Images/ Slogans for National Integration

Unit-3: Civil Affairs

Aim: To train Cadets to assist Civil administration in performance of selective duties during disasters

Scope: Basic information about civil defense organization and its duties, maintenance of essential services and providing assistance to civil administration in various types of emergencies during national disasters

- Types of Emergencies/ Natural Hazards
- Role of NCC during Natural Hazards/ Calamities
- Fire Service and Fire Fighting

Unit-4: Drill

Aim: To inculcate a sense of discipline, improve bearing, smartness, ant turnout and to develop the quality of immediate and implicit obedience to orders

Scope: All important basic aspects of drill including ceremonial drill, drill with arms and words of command Drill without Arms

- General and Words of Command
- Attention, Stand at Ease and Stand Easy, turning and inclining at the halt
- Saluting at the halt
- Getting on parade, dismissing and falling out
- Saluting on the March Individual word of command

Unit-5: Weapon Training

Aim: To give elementary knowledge about rifles Scope: Basic knowledge about rifle and firing

- Characteristics of a rifle/rifle ammunition and its fire power
- Stripping, assembling, care and cleaning and sight setting
- Loading, cocking and unloading
- The lying position and Holding
- Aiming, range and figure target
- Range precautions and safety precautions

Unit-6: Adventure Training

Aim: To inculcate a sense of adventure and develop confidence, courage and determination Scope: To expose cadets to various adventure activities

- Trekking including selection of route and administrative planning
- Cycle expedition including selection of route and administrative planning

Unit-7: Personality Development and Leadership

Aim: To develop an all-round dynamic personality with adequate leadership traits to deal/ contribute effectively in all walks of life

Scope: Basic subjects of leadership with emphasis on self-awareness, life/soft skills, time management and character building

- Introduction to Personality development
- Factors influencing/ shaping personality: Physical, Social, Psychological and Philosophical
- Self-Awareness-know yourself
- Self-confidence, courage & self-conviction
- Problem solving skills
- Importance of group and team work
- Effective use of time
- Coping with stress/ emotions
- Sociability: Social Skills
- Characteristics of healthy personalities – ethics/ values

Unit-8: Social Awareness Community Development

Aim: To teach cadets the values and skills involved in providing voluntary Social Service

Scope: Understanding of social service and its needs, knowledge about the weaker sections of our society and their requirements, about NGOs and contribution of youth towards social welfare

- Basics of Social Service, and its needs
- Contribution of youth towards social welfare
- Civic responsibilities
- Drug abuse and trafficking
- Causes and prevention of HIV/AIDS, Role of Youth
- Corruption
- Provisions of child Act

Unit-9: Health and Hygiene

Aim: To instill respect and responsibility towards personal health and hygiene

Scope: Basic information of the human body, maintenance of health and hygiene, sanitation, disease and an elementary knowledge of First Aid and Nursing

- Hygiene and sanitation (Personal and Food Hygiene)
- Physical and mental health
- Infectious and contagious diseases and its prevention
- Basics of first aid in common medical emergencies
- Wounds and fractures
- Introduction to yoga and exercise

Specialized Subject (Army)

Unit 1: Armed Forces

Aim: To acquaint cadets with the Armed Forces

Scope: Introductory and general information about the Armed Forces

- Basic organization of Armed Forces
- Organization of the Army
- Badges and Ranks
- Honors and Awards
- Modes of entry into Army

Unit 2: Military History

Aim: To provide knowledge of renowned Military Generals, PVCs and Indo-Pak Wars Scope: Introduction to biographies, famous Indian battles and gallantry awards

- Biographies of renowned generals (Carriappa/Manekshaw)
- Study of battles of Indo-Pak war 1965, 1971 and Kargil
- War movies

Unit-3: Map Reading

Aim: To teach cadets elementary map reading

Scope: Basic understanding of map sheets and map reading instruments and development of capability to use them to carry out simple Map Reading

- Introduction to types of Maps and conventional signs.
- Scales and grid system
- Topographical forms and technical terms

Unit-4: Field Craft and Battle Craft

Aim: To teach cadets elementary field craft and battle craft Scope: Basic field craft and battle craft

- Introduction
- Judging distance
- Description of ground
- Field signals
- Use of ground and movement
- Selection of formations (Section formation)

Unit-5: Communication

Aim: To introduce cadets to the latest trends in the field of communications Scope: Types of communications and future trends

- Importance of communication
- Means of communication

Specialized Subject (Navy)

Unit-1: Naval Orientation

Aim: To impart training on Naval Organization.

Scope: History of Indian Naval Organizations, Rank structure, Indo-Pak War- 1971etc.

- History of the Indian Navy (Gallantry Award Winners)
- Organization of IN- NHQ, Commands and Ships
- Organization on Board a Ship
- Survival and Rescue-Life Safety Items onboard Ship, Life Raft
- Life Boats and Distress Signals

Unit-2: Naval Communication

Aim: To impart basic knowledge of Naval Communication. Scope: Introduction to visual communication.

- Introduction to Naval Communication
- Phonetic Alphabet - Introduction and use

Unit-3: Seamanship

Aim: To impart basic knowledge about Seamanship.

Scope: Introduction to rigging, anchor work, parts of boats and accessories etc.

- Rigging
- Bends and Hitches: Reef Knot, Half Hitch, Clove Hitch,
- Rolling Hitch, Timber Hitch, Bowline, Round Turn and
- Two Half Hitches and Bow Line on the Bight and its basic element

Unit-4: Ship and Boat Modeling
Aim: To provide knowledge about Ship Modeling Scope: Materials used in different types of models

- Principles of Ship Modeling
- Reading of a Ship Drawing of a Model
- Views in blueprint
- Measurement of superstructure and hull

Specialized Subject (Air Force)

Unit-1: General Service Knowledge
Aim: To impart basic knowledge of IAF Scope: History and Organization of IAF

- Development of Aviation
- History of IAF

Unit-2: Air Campaigns
Aim: To impart basic knowledge of Air Campaigns Scope: History and Motivation.

- Indo-PakWar-1971
- Operation Safe Sagar

Unit-3: Aero-modeling
Aim: To provide knowledge about Aero Modelling
Scope: History of aero modelling, materials used in different types of models

- History of Aero-modelling

Unit-4: Principles of Flight
Aim: To introduce principles of flight
Scope: To impart knowledge about basic principles on which aviation is based

- Introduction
- Glossary of Terms

Unit-5: Parts of Aircraft
Aim: To provide knowledge of Aircraft Parts
Scope: Knowledge about the parts of aircraft to be flown

- Parts of Aircraft

Unit-6: Aircraft Particulars
Aim: To provide knowledge of Aircraft Instruments
Scope: Knowledge about the aircraft to be flown including checks and procedures

- Aircraft Particular Type, Specific

Unit-7: Airfield Layout
Aim: To provide knowledge of Airfields
Scope: Knowledge about the airfields to be flown including checks and procedures Airfield Layout

Unit-8: RT Procedure
Aim: To provide knowledge of wireless communication.
Scope: Knowledge about the communication is required for flying aircraft

- RT Procedure

PAINTING
Subject Code: 049
Class IX (2026-27)

Theory

Time allowed: 2 hours **Maximum Marks: 30**

UNIT- I:
Fundamentals of Visual Arts (The Elements)
Methods and Materials of Painting **15 Marks**

Understanding and appropriate use of:
(i) Tools,
(ii) Painting Materials - Poster Colours, Water Colours, Oil Pastels and Pencils

UNIT-II:
Story of Indian Art **15 Marks**

Appreciation of Indian Art covering selected paintings, sculptures and architectural glimpses:		
(a) Paintings:	Wizard's Dance	Bhimbetka
(b) Sculptures	Yaksha– Yakshi	R.B.I. New Delhi (by Ramkinker Baij)
(c) Architecture	Sun Temple	Konark, Odisha
(d) Indian Folk Art	Paintings	(Floor decoration) Alpana, Rangoli and Mandana

Practical

Time allowed: 3 hours **MaximumMarks:70 Marks**
Assessment for Practical: **50 marks**
Still Life

a)	Accurate drawing with proper composition of objects	15 marks
b)	Compositional arrangement with due emphasis on the subject-matter.	15 marks
c)	Treatment of medium with an appropriate colour scheme in still life.	10 marks
d)	Originality, creativity and overall expression.	10 marks

Internal Assessment: **20 marks**
It includes
(i) Periodic Tests -there will be three periodic tests in a year, out of which the best two will be assessed. **10 marks**
(ii) Portfolio -Portfolio will consist of 10 best works of sketches, still life and painting compositions done during the year. **10 marks**

Suggested Teaching Learning Strategies - IX:

- Still Life (Study of simple objects) Study of a group of two or three objects from a fixed point of view in colours. Group may include vegetables, fruits, foliage, book, drapery, and simple objects of daily use.
- Simple compositions based on any one form of Folk Art such as Madhubani, Warli, Alpana, Rangoli, Mandana etc.
- Field visits to Art Galleries, Museum/s, National Bal Bhawan or similar organisations, Artist's studios or Artisan's workshops etc.
- Sketches from Life and Nature in pencil and ink.
- Teacher can tell story of Indian Art in a story telling manner. This can also be audio/video recorded and shared with students.
- Display of reproductions of master's work in school corridors.
- Submission of portfolio consisting of six (3 Still Life and 3 Composition) selected works done during the year.