

# CONTENTS

## Learning Outcomes at the Higher Secondary Stage

<b>1.</b>	<b>LANGUAGES</b> <ul style="list-style-type: none"><li>• English</li><li>• Hindi</li><li>• Sanskrit</li><li>• Urdu</li></ul>	1 – 13 14 – 24 25 – 43 44 – 51
<b>2.</b>	<b>MATHEMATICS</b> <ul style="list-style-type: none"><li>• Mathematics</li></ul>	52 – 64
<b>3.</b>	<b>SCIENCE</b> <ul style="list-style-type: none"><li>• Biology</li><li>• Chemistry</li><li>• Physics</li></ul>	65 – 79 80 – 93 94 – 109
<b>4.</b>	<b>SOCIAL SCIENCES</b> <ul style="list-style-type: none"><li>• Economics</li><li>• Geography</li><li>• History</li><li>• Political Science</li><li>• Psychology</li><li>• Sociology</li></ul>	110 – 119 120 – 129 133 – 146 147 – 155 156 – 177 178 – 186
<b>5.</b>	<b>COMMERCE</b> <ul style="list-style-type: none"><li>• Accountancy</li><li>• Business Studies</li></ul>	187 – 194 195 – 200
<b>6.</b>	<b>FINE ARTS</b> <ul style="list-style-type: none"><li>• Visual Arts – Painting</li><li>• Music</li></ul>	201 – 220 221 – 255
<b>7.</b>	<b>Health &amp; Physical Education</b>	256 – 268
<b>8.</b>	<b>Human Ecology And Family Science</b>	269 – 289
<b>9.</b>	<b>Development Team</b>	290 – 294

# **Learning Outcomes at Higher Secondary Stage**

विद्यया ऽ मृतमश्नुते



**एन सी ई आर टी  
NCERT**

**NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING**

## FOREWORD

Every human being is different from other living beings in ways they continuously construct their knowledge. A little child constructs knowledge blocks, bits-by-bits, reasoning ‘what’, ‘why’ and ‘how’ with real/concrete objects using sensory/intellectual abilities. This process results into enriching experiences. The school undertakes the responsibility of building further learning on the child’s existing experiences. A teacher who is a facilitator of students’ learning needs to be aware about various pedagogies and also the progress in the child’s learning from early stages to higher stages. The system of education, too, needs to ensure enabling conditions to allow each learner to learn and progress with own place.

Schools need to recognize learners’ capacity to construct knowledge as a natural learner and the knowledge as an outcome of engagement with the world around when learner explores, responds, invents and makes meaning of it. Focus must be on the process of learning in place of product of learning emphasizing competency-based educational process. The National Education Policy (NEP) 2020 has emphasized the need of Learning Outcomes for competency based teaching, learning and assessment at all stages of school education. It also recommend Holistic Progress Card, which need to take care of assessment of all the aspects leading to holistic development of our children.

In order to translate process based learning and assessment into practice, the NCERT brought out Learning Outcomes at Elementary Stage in 2017 and at Secondary Stage in 2019. As a follow-up of NEP, 2020 discussions, it was felt essential that the entire school education to centre around competency based teaching-learning. Henceforth, NCERT undertook the task of developing learning outcomes for the higher secondary stage. The present document ‘Learning Outcomes at

Higher Secondary Stage' aims to cover the whole spectrum of school education alongwith the other two documents on learning Outcomes. Learning Outcomes in 20 curricular areas at higher secondary stage have been delineated in terms of curricular expectations and suggested pedagogical processes in simple and lucid manner in the lines of earlier Learning Outcome documents.

This Learning Outcomes document has been prepared in a team by the faculty members of NCERT through internal deliberations, internal review by Review Committees constructed for this purpose and sharing with external resource persons finally resulting into the present form. The contribution of each team member within NCERT and also of the external experts is profoundly acknowledged.

I hope that this document will be helpful not only to teachers, teacher-educators schools, policy planners and also the evaluators and examiners in making the assessment competency based. Comments and suggestions are invited to bring further improvement to the quality of this document.

**(Hrushikesh Senapaty)**

**LEARNING OUTCOMES FOR THE  
ENGLISH LANGUAGE  
HIGHER SECONDARY STAGE**

**Introduction**

Language is not only a means of communication, it is also a medium through which most of our knowledge is acquired. It is a system that, to a great extent, structures the reality around us. Language acquisition involves processes of scientific enquiry such as observation of data, classification and categorization, hypothesis formation and its verification. It should be possible to use the languages available in the classroom not only for the enhancement of above cognitive abilities but also for increasing language proficiency and sensitivity. Such exercises prove particularly useful in the conscious use of language rules in formal situations.

Learners are expected to possess such competencies which enable them to face the world in the true sense-both academic and work place world. Language proficiency and competencies are vital in nurturing and shaping the learner to negotiate, function, develop attitudes, social skills, critical and liberal thinking and values in the academic, work place and society as a whole.

Language learning is essentially a process of acquiring language skills across the curriculum enabling the learners to achieve academic success and holistic personality development. The relevant learner centric academic inputs take learners beyond the boundaries of textbook for exploration of ideas, thoughts, and beliefs in a larger arena of people and life.

Secondary stage is crucial for there is transition from general school education of ten years to stream based courses leading to another transition to higher education or work place. The progression in this process leads to understanding abstract thoughts and unfamiliar contexts at the secondary stage. It leads to construction of knowledge across the curriculum.

The most crucial aspect is the implementation of pedagogies meant for quality learning and balanced assessment. Hence at the secondary stage there is need to have more flexibility and resourcefulness than teaching to test. Educators are expected to blend the discipline content with engaging learning environment.

Promising practices may be followed to narrow the achievement gaps among the learners. It is expected to develop a range of skills subsumed under Basic Interpersonal Communication Skills (BICS) and Cognitively Advanced Language Proficiency (CALP) by the end of class

xii.

Attributes of learners at the end of class XII would present them as an adult with knowledge, competencies, skills, and attitudes for a good citizenry who could pursue his / her academic interest and acquire higher order skills with specializations of varied nature. Language learning at the senior secondary stage should ensure registered based language requirement of higher education. The competencies should focus on register based language proficiency viz. science registers, social science registers, language for technology and so on. This could be achieved through the inputs of materials (texts and others), teachers' language, the classroom interactions and assessment. Learning outcomes delineated here include the above aspects to pave way for learning of the language for varied purposes.

### **Learning Outcomes at the end of the secondary stage- an Overview**

- Learning outcomes are concise, and clearly articulated recommendations for the academic and overall achievements of the learners.
- These are the part of the process of learning which are based on the learner centric approaches.
- There is no linear progression suggested for the learners.
- Learners can have flexibility in assessment/ examination. This will lead to giving space to learners to follow their pace of learning without being labelled as slow, weak etc.
- Educators can modify activities, tasks etc. as per the learning outcomes.
- The processes highlight art integrated learning and inclusive approach for learning.
- Equal opportunities are given to all students to develop the communication skills. Conscious effort has been made to shift from memorization to the development of language competencies along with the competencies to function as an informed youth to work towards the societal upliftment and grow as a productive individual. Value inculcation is integrated in pedagogical processes and in Los.
- Different pedagogical processes are suggested for development of these competencies. These ensure integrated and seamless learning.
- These competencies can be observed and assessed. The real life application of understanding can be assessed as evidenced by the students' performance of authentic tasks and participation in group project.

The framework of Learning Outcomes is focused on the holistic development of young learners who are at the threshold of entering the world of higher education, employment, professional courses etc. Some of them may move to different parts of the world for the purpose of education or other reasons.

### **Curricular Expectations**

After class XII students will leave the protected atmosphere of school and go into the world of independence as well as responsibility. So the two years of senior secondary stage is a preparatory stage to face life and take decision. The pedagogical processes suggested and learning outcomes stated work towards this. Learning Outcomes and pedagogical processes make an effort to groom the students to be independent learners. The teachers can adopt, adapt or modify the suggestive pedagogical processes according to the needs, contexts and resources available.

Learners at the end of the senior secondary stage, classes XII are expected to;

- acquire the ability to listen and understand, and should be able to employ non-verbal clues to make connections and draw inferences.
- develop the habit of reading for information and pleasure; draw inferences and relate texts to previous knowledge; read critically and develop the confidence to ask and answer questions.
- employ her communicative skills, with a range of styles, and engage in a discussion in an analytical and creative manner.
- identify a topic, organize and structure thoughts and write with a sense of purpose and an awareness of audience.
  - to understand and use a variety of registers associated with domains such as music, sports, films, gardening, construction work, etc.
- use a dictionary and other materials available in the library and elsewhere, access and collect information through making and taking down notes, etc.
  - use language creatively and imaginatively in text transaction and performance of activities.
- develop sensitivity towards their culture and heritage, aspects of contemporary life and languages in and around the classroom.

- refine their literary sensibility and enrich their aesthetic life through different literary genres.
- become sensitive to the inherent variability that characterizes language and notice that languages keep changing all the time.
- appreciate similarities and differences across languages in a multilingual classroom and society. Domains
- notice that different languages and language varieties are associated with different

### Secondary Stage-Class XI

<b>The learners may be provided opportunities individually or in groups and encouraged to</b>	<b>The Learner--</b>
<ul style="list-style-type: none"> <li>• read textual materials with interest and comprehension; by skimming and scanning of texts and using other sub skills of reading.</li> <li>• explore multimedia resources, QR codes (provided in textbooks) related to texts to supplement their reading/understanding.</li> <li>• suggest / recommend additional readings of their choice.</li> <li>• speak to peers, teachers about planning and organising events.</li> <li>• listen patiently to prepare the gist of audio and video materials, films etc.</li> <li>• write answers, solutions, descriptive passages, with logic.</li> <li>• write by following the process e.g making notes, drafts, review and revision and finalisation.</li> <li>• watch relevant contemporary and classical movies, science-fiction with captions in English, and other languages.</li> <li>• translate talks, stories, passages into English and vice versa for enhancing creativity, comprehension, familiarity with languages.</li> <li>• read specific texts from books, newspaper etc.</li> </ul>	<ul style="list-style-type: none"> <li>• listens to speeches, lectures, radio talks etc., reflects; to communicate through speech and writing.</li> <li>• reads longer texts with implicit meaning and describes inferring from contexts, phonological cues etc. with clarity.</li> <li>• writes, collects and appreciates narratives, short poems based on fantasy, imagination. shares and enjoys jokes, cartoons in English, foreign languages, Indian languages etc.</li> <li>• speaks fluently and spontaneously. Uses interesting, and need based multilingual vocabulary</li> <li>• uses and understands appropriate punctuation marks, grammatical items, modulation of voice in LSRW, proof reads and edits prose and poetry.</li> <li>• speaks using every day familiar expressions and phrases like greetings, expressions, gentle body language for initiating talk etc.</li> <li>• writes creatively emphasizing the main idea; researching about author,</li> </ul>



<p>to build up scientific temperament, spirit of enquiry and to overcome biases.</p> <ul style="list-style-type: none"> <li>• read with appreciation literary terms- metaphor, simile, personification, antithesis etc.</li> <li>• take review of his/her learning in the light of objectives of the curriculum.</li> <li>• make use of language skills(LSRW) across other subject areas.</li> <li>• collect and read literary writing in English and other languages.</li> <li>• visit library for collecting and consulting relevant books/material.</li> <li>• listen to news broadcast from different national and international channels.</li> <li>• read and think critically about issues related to environment and disaster management, gender, peace etc.</li> <li>• develop patience, respect, and create space for social, economic, ethnic, linguistic diversity in terms of activities, assignments, projects etc.</li> <li>• read about arts and aesthetics and share in the form of write ups, posters etc.</li> <li>• collect information about statesmen, and literary figures for debates, speech etc.</li> <li>• read and identify the characteristics of an autobiographical account, science fiction, biography and other genres of writing.</li> <li>• use tools/ platforms of ICT following guidelines meant for safety; make use of ICT as an assistive device, avoid spending long hours affecting mental and physical health; browse authentic and relevant sites.</li> <li>• listen to authentic sources such as news bulletins, movies, music and songs for understanding the usage and developing comprehensible pronunciation.</li> </ul>	<p>and context etc.</p> <ul style="list-style-type: none"> <li>• prepares schedules and organizes classroom activities/school events(Yoga Day, debate ,cultural events etc.) with the consensus of peers and teachers.</li> <li>• develops questions and answers making use of study skills e.g. note making, summarising etc.</li> <li>• identifies and uses appropriate; safe, authentic online resources;browses and take note of online resources, reads books, watches films etc. for understanding historical and scientific facts.</li> <li>• expresses opinion and views independently, in speech, and writing by using visual graphics. Listens patiently to contradictory points of view on online platforms and answers logically in agreement/disagreement</li> <li>• identifies and appreciates figures of speech, rhyme scheme, intonation, verse and blank verse etc. in the poetry. expresses gratitude to elderly in writing and speech using vocabulary to express feelings and emotions</li> <li>• develops write ups with clarity, using appropriate vocabulary , relevant thoughts and presents with title and subtitles and debates on issues fluently and convincingly using authentic social, scientific evidences.</li> <li>• write notices, advertisements, brief guidelines in case of natural calamities, accidents etc.</li> <li>• writes paragraph, summary, letter with concern, about social issues e.g. on marginalized people, environment, by</li> </ul>
--	---

<ul style="list-style-type: none"> <li>• use dictionary, thesaurus, newspapers etc to build vocabulary and grammar.</li> <li>• solve grammatical exercises based on tense, types of sentences, punctuation, conjunctions, prepositions etc.</li> <li>• converse with elderly in the family and neighbourhood on general issues of social and political importance.</li> <li>• read literature from different parts of the world and draw conclusions on ideas, style and relevance</li> <li>• undertake interdisciplinary projects using inquiry skills</li> <li>• reads genre of literature -science fiction, fiction, drama, stories, poems, cartoons, haiku etc. with understanding</li> <li>• decode abstract thoughts pertaining to science, social science, language and literature.</li> <li>• read expository, narrative, descriptive and argumentative accounts of writing.</li> <li>• develop interest and appreciation of the past; history ,mythology etc by reading, writing.</li> <li>• recite poems, sing songs in rhythm for pleasure, and to understand the use of language.</li> <li>• empathise with learners with special needs</li> <li>• develop supportive and caring attitude towards elderly; speak with clarity and examples to the parents, elders and community for creating awareness about health, and bank, post office etc related literacy.</li> <li>• develop rubrics, and self-assessment criteria to review and revise tasks and assignments.</li> <li>• frame objectives for tasks, activities, projects etc.</li> <li>• develop parameters / points for assessment of tasks, activities, skills- LSRW.</li> </ul>	<p>using appropriate vocabulary.</p> <ul style="list-style-type: none"> <li>• visits library for consulting books, collecting notes etc.</li> <li>• writes e mail/ letters formal, informal and business letters with a sense of audience and purpose.</li> <li>• writes paragraphs on factual description with logic and coherence.</li> <li>• develops questions for quiz, survey , scripts for drama.</li> <li>• composes songs, poems using English and other familiar languages on nature, sowing and harvesting seasons patriotism etc.</li> <li>• writes descriptive passages on literature appreciating linguistic and literary features.</li> <li>• solves grammar exercises with/without context.</li> <li>• develops projects based on language and literature and interdisciplinary themes using skills of collecting , organizing, analyzing and report writing.</li> <li>• reviews and revises assignments/ tasks for peer and self assessment.</li> <li>• forms self help groups with the support of teachers and peers for learners/peers with special needs to facilitate their learning, physical activities and their participation in cultural programmes.</li> <li>• prepares manifesto for school elections and contests collaboratively with peers and teachers.</li> <li>• develops posters, notices and organises talk against bullying, ragging, cruelty towards animals,</li> </ul>
---	--

<ul style="list-style-type: none"> <li>• Familiarise and learn sign language.</li> <li>• understand rules and usage of grammatical items in isolation</li> <li>• develop scripts for street play, drama etc. based on stories, themes, myths etc.</li> <li>• read short and long poems depicting empathy, humour, satire, mythology etc.</li> <li>• read stories about success, dreams, aspirations, struggle, etc., of people</li> <li>• take up activities, tasks, projects involving all irrespective of class, caste gender etc for developing interpersonal relations.</li> <li>• Learn/practice and share experiences of doing Yoga and other physical activities.</li> <li>• read news, stories to elderly at home</li> <li>• neighbourhood; writes and narrates anecdotes with appreciation about typical traits, physical features of characters in family or known people, friends, etc.</li> <li>• share with parents/ elders/ community members about school, classroom activities/issues.</li> <li>• read in detail about pandemic in past and present to share information related to medicine, economics and commerce, and experiences of people.</li> <li>• promote conservation of natural resources through projects, assisting and collaborating with NGOs etc.</li> <li>• Relate literature and language of the languages learnt/familiar.</li> </ul>	<p>cybercrimes, awareness about health of the elders, functioning of banks, post office etc specifically during pandemics, and disasters etc.</p> <ul style="list-style-type: none"> <li>• develops and organizes short plays on issues like girl's education, health, peace, justice, etc.</li> </ul>
---	--

<p><b>CLASS-XII</b></p> <p><b>The learners may be provided opportunities individually or in groups and encouraged to</b></p>	<p><b>The Learner--</b></p>
<ul style="list-style-type: none"> <li>• understand the objective of reading literature and language items from the textbook.</li> <li>• read silently long text and comprehend the meaning.</li> <li>• memorise relevant details, rules of grammar, quotes, poem, content meaningfully with examples without using rote practices; drill, chanting etc.</li> <li>• write and share the derived meaning from the text.</li> <li>• speak with examples on issues presented in the text.</li> <li>• explore different ways of expression e.g. photo presentations, use of ICT enabled tools etc.</li> <li>• understand the process of self learning by engaging in activities/ task and self assessment.</li> <li>• read world literature (fiction &amp; nonfiction) with understanding of the content and appreciate style of writing.</li> <li>• identify literary terms in genres of literature e.g. pun, rhetoric, antithesis, hyperbole etc.</li> <li>• appreciate poems for rhyme, blank verse, brevity, imagination, fantasy, realism etc.</li> <li>• read different genres and themes of literature-minorities, gender, environment, peace, justice etc.</li> <li>• relate texts from language and literature with other subject areas- social science,</li> </ul>	<ul style="list-style-type: none"> <li>• reads silently with comprehension and to identify the complexity of ideas in an argumentative text ; and relates learning with personal, social experiences in writing and speech.</li> <li>• Recites poems, identifies literary devices, linguistic features, sings songs with voice modulation, expression, and appropriate body language.</li> <li>• writes creatively using imagination, fantasy and myths, proverbs quotes etc., focuses on the features of genres of literature (fiction and nonfiction etc.)</li> <li>• writes and narrates, anecdotes, e.g. on celebration of festival, cultural fest in school etc. with appropriate multilingual vocabulary, proverbs grammar, sense and feelings.</li> <li>• writes reports based on survey conducted e.g. on preparedness of the school for dealing with fire, earth quake, drinking water arrangements, cleanliness etc. Speaks on the suggestions based on the reports.</li> <li>• listens with concentration/makes notes, on online platform, and follows the etiquettes of meetings/discussions e.g. taking turn, listening to others without interrupting etc.</li> <li>• develops tools , questionnaires, interview questions for collecting data or to execute interdisciplinary projects stating the purpose, plan, resources, method, findings; draws maps, diagrams, charts,</li> </ul>

<p>science etc.</p> <ul style="list-style-type: none"> <li>• prepare brief biographical accounts of personalities, award winners in the field of social science, science, commerce etc.</li> <li>• read and appreciate literature on peace, values etc.</li> <li>• use ICT as an assistive device in meaningful way; searching authentic sites, and online platforms for interactions.</li> <li>• develop proficiency in language skills(LSRW) each in isolation.</li> <li>• understand rules of grammar and follow them in LSRW skills.</li> <li>• know about wild life and develop sensitivity towards birds, animals, insects etc.</li> <li>• collect poems on sowing and harvesting seasons in different languages.</li> <li>• read classical and contemporary literature in English and other Indian languages to understand and appreciate social, cultural and political aspects etc.</li> <li>• promote self directed learning by using study skills; note making, summarising etc.</li> <li>• understand different registers in speech and writing.</li> <li>• take up community based programmes on issues e.g. girl child</li> <li>• education. cleanliness, hygiene, peace, yoga, opening/ functioning of community library, toilets, playground and celebration of community specific occasions etc.</li> <li>• hold discussions on adolescent issues in free and frank environment.</li> </ul>	<p>tables for analysing information and preparing reports.</p> <ul style="list-style-type: none"> <li>• creates cartoons, brief accounts with humour ,wit and satire. Shares and enjoys jokes with peers without hurting the sentiments of particular community, gender etc.</li> <li>• writes summaries with titles and subtitles on national, international news, editorials; political, economic and sports etc.</li> <li>• writes formal letters/ applications/ requests, resume etc.: seeking information regarding admission, courses, fees etc. with clarity and precision; and informal letters to friends, relatives using appropriate vocabulary, expressions etc.</li> <li>• speaks/ reads text with phonological awareness for ensuring comprehensibility.( e.g.in case of silent letters.)</li> <li>• solves grammar exercises with or without context following the definition and rule of the grammatical item.</li> <li>• Converses using short phrases in c e.g. You seem .. Looks like you've.... had a good day.....You seem a bit tired What do you think? ...How does that sound? ...That sounds great (Oh) never mind.</li> <li>• uses ICT for browsing information, reading and writing e.g. develops PPT for presentations, short films with audio on nature, natural resources, art &amp;craft monuments, peace, value, drug abuse, gender , environment, livelihoods of people, children in difficult circumstances etc. in collaboration with peers.</li> <li>• frames questions for interviews with community members, school staff others</li> </ul>
--	---

<ul style="list-style-type: none"> <li>• familiarise and learn language for the benefit of peers with hearing challenges and others to promote the ideas of inclusion.</li> <li>• involve/support peers in doing tasks, projects and assessment.</li> <li>• share personal issues e.g. being bullied, depressed, health &amp; family issues etc. to develop interpersonal bonding among peers.</li> <li>• get membership of school and other libraries for reading books, magazines etc.</li> <li>• fill forms for membership -library, sports etc, and write applications for opening bank and post office accounts.</li> <li>• write formal emails to college/ university seeking information regarding admission, courses etc.</li> <li>• promote scientific attitude towards social, political problems by developing tools for conducting surveys, short researches etc.</li> <li>• self direct and assess his/her studies for developing critical thinking, understanding and improving academic performance.</li> <li>• read newspapers for familiarising and learning use of grammar, viewpoints and drawing conclusions- summary, paragraph writing etc.</li> <li>• watch animated films, cartoons, documentaries for drawing inferences.</li> <li>• develop guidelines for starting book club, plant nursery in school etc.</li> <li>• conduct and note down steps for experiments with local specific materials.</li> <li>• read updated authentic material on healthy eating, lifestyle etc.</li> </ul>	<ul style="list-style-type: none"> <li>on issues e.g. health, education and other specific related areas. Converses with farmers, labourers, house helps etc. about their life/ problems etc. and provides help by sharing important government policies, schemes etc. (as read in other subject areas and newspapers).</li> <li>• speaks on issues related to gender, transgender with logic, evidence and without any prejudice.</li> <li>• reads literature from different parts of the world , gives opinion on the characters, events, traditions and cultural norms of societies writes with logic, evidence etc. about Indian knowledge, traditions, and practices.</li> <li>• reads autobiographies and biographies of literary figures, statesmen and other personalities and make diary entries.</li> <li>• reads and understands literature depicting, natural calamities, pandemics etc .in terms of medical, geographical contexts, terminology etc.; speaks on scientific facts, economic issues in simple words using examples from everyday life.</li> <li>• actively participates; raises queries, notes down contact details etc. during career counselling sessions, speaks with clarity, if in need, to the counsellor.</li> <li>• writes notices, posters, speech etc. on bullying, ragging and cybercrime; develops multilingual charts, posters on healthy food etc. for school canteen, farewell parties etc.</li> <li>• peer reviews assignments, reports etc. with developed parameters and without any bias.</li> <li>• makes journal entries for self-assessment.</li> </ul>
---	--

<ul style="list-style-type: none"> <li>• dramatise plays to feel the emotions of characters(positive, negative, ambivalent) in class, school assembly etc.</li> <li>• read with comprehension and appreciate graphic novels, illustrated books.</li> <li>• read published diaries of famous personalities, common people etc.</li> <li>• follow award ceremonies for film, literature, science etc.</li> <li>• participate in group activities e.g. tour, visits, community service etc., develop and follow rules, regulations prescribed for such activities.</li> <li>• understand registers of language for communication of ideas, thoughts, queries etc.</li> <li>• develop projects, magazine etc. using interdisciplinary knowledge and information.</li> <li>• maintain journal/ diary for reflection.</li> <li>• understand diversity in various forms e.g. social, religious, political etc. and use it as resource for enhancing world view.</li> <li>• develop material for creating awareness about acts, information etc. pertaining to the area of education.</li> <li>• participate in sessions on career counseling and guidance etc.</li> <li>• visit social institutions e.g. old age home, orphanage etc. and write experiences.</li> <li>• learn art craft and music related activities and write and speak with peers, teachers, parents about them.</li> <li>• participates in class and school elections.</li> <li>• develop sense of hygiene and sanitation in school by developing placards for school garden, toilets, playground, classrooms etc.</li> </ul>	<ul style="list-style-type: none"> <li>• practices yoga, listens to spiritual music for pleasure and mental health and shares experiences in speech and writing.</li> <li>• shares with peers(who are in need) resources e.g. books, pen drives, stationery, ICTdevice etc. with humility.</li> <li>• collaborates with peers for organising programmes for elderly, disadvantaged, girl child etc.</li> <li>• visits library for reading, preparing notes, references writing book reviews, etc.;; forms book clubs taking guidance from teachers, seniors etc.</li> <li>• prepares manifesto for school and class election, uses fair means and environment friendly ways during the election.</li> </ul>
---	---

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• plan and work following the ideas of inclusion.</li></ul> |  |
|---|--|

## **Inclusion**

Suggested Pedagogical Processes in an Inclusive Setup The curriculum of teaching-learning languages is same for all learners in the classroom. Hence, all learners get opportunities to actively participate in the teaching-learning process. There may be some students who have learning difficulties in language, visual-spatial or mixed processing problems. They may require additional teaching support and some adaptations in the curriculum. There is variability amongst the CWSN and it requires strategies and approaches that will cater to the needs of all learners in an inclusive classroom. The concept of inclusive pedagogy provides a platform for learning and space to children with mental and physical challenges along with other children in the class. This also focuses on working collaboratively in pairs and groups. By considering the specific requirements of children with special needs, few pedagogical processes for the teachers are suggested below:

- Use multiple modes of communication (verbal and nonverbal, graphics, cartoons, speech balloons), pictures, symbols, concrete objects and examples to assist in comprehension would help all children. Format (for writing letters, applications, etc.) can be verbally introduced by the teacher.
- New vocabulary introduced may be transcribed in Braille with meanings.
- Describe words like minute, huge, near and far away, sea and sky, small organisms and insects, etc., verbally with detailed information.
- Use audio tapes and storytelling for enhancing pronunciation. Different sounds through audio recordings, such as waterfall, wind, waves, thunder, sounds of animals and means of transport can be used to explain various concepts.
- Encourage all the students in the class to interact with each other and use acting, dramatisation, and role play.
- Prepare visual vocabulary sheet on the topics taught (displaying words with pictures).
- Make visual classroom displays with captions and explanations.
- Write footnotes along with examples for comprehension.
- Give repeated exercises on sentence construction so that the child can learn to use words



and phrases correctly. Use examples from pictures, news, current events, scrapbook, etc.

- Provide or adapt reading material and resource material at appropriate reading level of the child.
- Illustrate ideas and new vocabulary and make content comprehensible and attractive through the use of cards, colour coding concept maps, hand puppets, use of real life experiences, dramatisation, enacting stories, real objects, and supplementary material.
- Make use of paired reading to promote fluency in reading.

DRAFT

# हिंदी भाषा सीखने के प्रतिफल

## उच्चतर माध्यमिक स्तर

### (12 व 11 कक्षा)

#### परिचय

उच्चतर माध्यमिक स्तर में प्रवेश लेने वाला विद्यार्थी पहली बार सामान्य शिक्षा से विशेष अनुशासन की शिक्षा की ओर उन्मुख होता है। दस वर्षों में विद्यार्थी भाषा के कौशलों से परिचित हो जाता है। भाषा और साहित्य के स्तर पर उसका दायरा अब घर, पासपड़ोस-, स्कूल, प्रांत और देश से होता हुआ धीरे धीरे विश्व तक फैल-जाता है। वह इस उम्र में पहुँच चुका है कि देश की सांस्कृतिक, सामाजिक, राजनीतिक और आर्थिक समस्याओं पर विचारविमर्श कर सके, एक जिम्मेदार नागरिक की तरह अपनी जिम्मेदारियों को समझ सके तथा देश और खुद को सही दिशा दे सकने में भाषा की ताकत को पहचान सके। ऐसे दृढ़ भाषिक और वैचारिक आधार के साथ जब विद्यार्थी आता है तो उसे विमर्श की भाषा के रूप में हिंदी की व्यापक समझ और प्रयोग में दक्ष बनाना सबसे पहला उद्देश्य होगा। किशोरावस्था से युवावस्था के इस नाजुक मोड़ पर किसी भी विषय का चुनाव करते समय बच्चे और उनके अभिभावक इस बात को लेकर सबसे अधिक चिंतित रहते हैं कि चयनित विषय उनके भावी कैरियर और जीविका के अवसरों में मदद करेगा कि नहीं। इस उम्र के विद्यार्थियों में चिंतन और निर्णय करने की प्रवृत्ति भी प्रबल होती है। इसी आधार पर वे अपने मानसिक, सामाजिक, बौद्धिक और भाषिक विकास के प्रति भी सचेत होते हैं और अपने भावी अध्ययन की दिशा तय करते हैं।

इस स्तर पर विद्यार्थियों में भाषा के लिखित प्रयोग के साथसाथ उस-के मौखिक प्रयोग की कुशलता और दक्षता का विकास भी ज़रूरी है। प्रयास यह भी होगा कि विद्यार्थी अपने बिखरे हुए विचारों और भावों की सहज और मौलिक अभिव्यक्ति की क्षमता हासिल कर सकें। विभिन्न विषयक्षेत्रों, जैसे- इतिहास, भौतिक विज्ञान अथवा गणित को समझने के लिए हमें भाषा की आवश्यकता होती है। चाहे

हम प्रकृति को देखें या समाज को हम काफ़ी हद तक उन्हें अपनी भाषा की संरचना के माध्यम से ही देखते हैं।

### भाषा को सीखना सिखाना-

इस संदर्भ में हम यही कहेंगे कि अपनी बात दूसरों तक पहुँचाने के एक माध्यम के रूप में हम भाषा को पहचानते रहे हैं। इसीलिए हम सब यही परिभाषा पढ़ते हुए बड़े हुए कि भाषा अभिव्यक्ति का माध्यम है; यानी भाषा के जरिए ही हम कुछ कहते और लिखते हैं और किसी के द्वारा कहे और लिखे को सुनते और पढ़ते हैं। इसीलिए भाषा के चार कौशलों की बात इस तरह से प्रमुख होती चली गई कि हम भूल ही गए कि कहने-सुनने वाला सोचता भी है। इस संदर्भ में बर्टोल्ट ब्रेष्ट की कुछ पंक्तियाँ ध्यान देने योग्य है जिसमें सोचने का कौशल की ओर इशारा है- 'जनरल, आदमी कितना उपयोगी है, वह उड़ सकता है और मार सकता है। लेकिन उसमें एक नुक्स है- वह सोच सकता है।' बच्चे जो कुछ देखते या सुनते हैं उसे अपनी दृष्टि/समझ से देखते-सुनते हैं और अपनी ही दृष्टि और समझ के साथ बोलते और लिखते हैं। यह दृष्टि/समझ एक परिवेश और समाज के भीतर ही बनती है इसलिए परिवेश और समाज के बीच बन रही बच्चे की समझ को उपयुक्त अभिव्यक्ति में समर्थ बनाने की कोशिश होनी चाहिए। जबकि हो यह रहा है कि जब बच्चे स्कूल आते हैं तो घर की भाषा और स्कूल की भाषा के बीच एक द्वंद्व शुरू हो जाता है। इस द्वंद्व से माध्यमिक स्तर के बच्चे जो कि किशोर वय में पहुँच रहे होते हैं, को भी जूझना पड़ता है। उनके पास अनेक सवाल हैं, अपने आस-पास के समाज और संसार से। जिनका जवाब वे ढूँढ़ रहे हैं। अगर हमारी भाषा की कक्षा उनके सवालों और जवाबों को उनकी अपनी भाषा दे सके तो यह इसकी सार्थकता होगी। इसलिए कक्षा में भाषा कौशलों को एक साथ जोड़कर पढ़ने-पढ़ाने की दृष्टि भी विकसित करनी होगी। यह भी ध्यान रखना होगा कि भाषा कौशलों को बेहतर बनाने के लिए बच्चे के परिवेश में उस भाषा की उपयुक्त सामग्री उपलब्ध हो। खासतौर से

द्वितीय भाषा के रूप में हिंदी पढ़ने-पढ़ाने वालों के लिए यह ज़रूरी होगा। भाषा पढ़ने के माहौल और प्रक्रिया के अनुसार ही बच्चों में सीखने के प्रतिफल होंगे।

### पाठ्यक्रम संबंधी अपेक्षाएँ—

- सृजनात्मक साहित्य के आलोचनात्मक आस्वाद की क्षमता का विकास।
- स्वतंत्र और मौखिक रूप से अपने विचारों की अभिव्यक्ति का विकास।
- साहित्य की विभिन्न विधाओं के मध्य अंतर्संबंध एवं अंतर की पहचान।
- ज्ञान के विभिन्न अनुशासनों के विमर्श की भाषा के रूप में हिंदी की विशिष्ट प्रकृति एवं क्षमता का बोध कराना।
- साहित्य की प्रभावकारी क्षमता का उपयोग करते हुए सभी प्रकार की विविधताओं (राष्ट्रीयता, धर्म, जेंडर, भाषा) के प्रति सकारात्मक और संवेदनशील रवैये का विकास।
- जाति, धर्म, लिंग, राष्ट्रीयता, क्षेत्र आदि से संबंधित पूर्वग्रहों के चलते बनी रूढ़ियों की भाषिक अभिव्यक्तियों के प्रति सजगता एवं आलोचनात्मक दृष्टिकोण का विकास।
- विदेशी भाषाओं समेत विभिन्न भारतीय भाषाओं की संस्कृति की विविधता से परिचय कराना।
- व्यावहारिक और दैनिक जीवन में विविध किस्म की अभिव्यक्तियों की मौखिक व लिखित क्षमता का विकास।
- संचार माध्यमों (प्रिंट और इलेक्ट्रॉनिक) में प्रयुक्त हिंदी की प्रकृति से अवगत कराना और उन्हें नए-नए तरीके से प्रयोग करने की क्षमता का परिचय कराना।
- भाषा में अमूर्त अभिव्यक्ति को समझने की पूर्व अर्जित क्षमताओं का उत्तरोत्तर विकास।
- मतभेद, विरोध और टकराव की परिस्थितियों में भी भाषा के संवेदनशील और तर्कपूर्ण इस्तेमाल से शांतिपूर्ण संवाद की क्षमता का विकास।

- भाषा की समावेशी और बहुभाषिक प्रकृति के प्रति ऐतिहासिक और सामाजिक नज़रिए का विकास।
- शारीरिक और अन्य सभी प्रकार की चुनौतियों का सामना कर रहे बच्चों में भाषिक क्षमताओं के विकास की उनकी अपनी विशिष्ट गति और प्रतिभा की पहचान करना।
- इलेक्ट्रॉनिक माध्यमों से जुड़ते हुए भाषा प्रयोग की बारीकियों और सावधानियों से अवगत रहना।
- साहित्य की व्यापक धारा के बीच रखकर रचनाओं का विश्लेषण और विवेचन करने की क्षमता हासिल करना।

DRAFT

सीखने-सिखाने की प्रक्रिया	सीखने के प्रतिफल
<p>सभी विद्यार्थियों को समझते हुए सुनने, बोलने, पढ़ने, लिखने और परिवेशीय सजगता को ध्यान में रखते हुए व्यक्तिगत एवं सामूहिक रूप से कार्य करने के अवसर और प्रोत्साहन दिए जाएँ ताकि —</p> <ul style="list-style-type: none"> <li>• कक्षा का वातावरण संवादात्मक हो ताकि अध्यापक, विद्यार्थी और पुस्तक तीनों के बीच एक रिश्ता बन सके ।</li> <li>• विद्यार्थियों को संवाद में शामिल करने के लिए यह भी जरूरी होगा कि उन्हें एक नामहीन समूह न मानकर अलग अलग व्यक्तियों-के रूप में अहमियत दी जाए। शिक्षक को अकसर एक कुशल संयोजक की भूमिका में स्वयं को देखना होगा।</li> <li>• अप्रत्याशित विषयों पर चिंतन करने और सोचे हुए की मौखिक व लिखित अभिव्यक्ति करने की योग्यता का विकास शिक्षक के सचेत प्रयास से ही संभव है। इसके लिए शिक्षक को एक निश्चित अंतराल पर नए नए विषय - प्रस्तावित कर लेख एवं अनुच्छेद लिखने तथा संभाषण करने के लिए पूरी कक्षा को प्रेरित करना होगा। यह अभ्यास ऐसा है, जिसमें विषयों की कोई सीमा तय नहीं की जा सकती।</li> <li>• मध्यकालीन काव्य की भाषा के मर्म से विद्यार्थी का परिचय कराने के लिए जरूरी होगा कि किताबों में आए काव्यांशों की संगीतबद्ध प्रस्तुतियों के ऑडियो वीडियो-कैसेट</li> </ul>	<p>विद्यार्थी —</p> <ul style="list-style-type: none"> <li>• रोज़मर्रा के जीवन से अलग किसी घटना / स्थितिविशेष में भाषा का काल्पनिक और - सृजनात्मक प्रयोग करते हुए भावनाओं को लिखित एवं मौखिक रूप से प्रकट करते हैं। जैसे— पानी के बिना एक दिन, बिना आँखों के एक दिन ।</li> <li>• पाठ्य-पुस्तकों में शामिल रचनाओं के साथ ही पाठ्यकविता-सामग्री से इतर रचनाओं-, कहानी, एकांकी और समाचार पत्र इत्यादि पढ़ते हैं और लिखकर बोलकर अपनी राय अभिव्यक्त करते हैं।</li> <li>• प्राकृतिक, सामाजिक एवं सांस्कृतिक मुद्दों, घटनाओं के प्रति अपनी प्रतिक्रिया को बोलकर लिखकर व्यक्त करते हैं। /जैसे— बदलती प्रकृति, डिजिटल शिक्षा एक विकल्प।</li> <li>• विविध साहित्यिक विधाओं के अंतर को समझते हुए उनके स्वरूप का विश्लेषण करते हैं।</li> <li>• अपने अनुभवों एवं कल्पनाओं को सृजनात्मक ढंग से लिखते हैं, जैसे— कोई यात्रा-वर्णन, संस्मरण, डायरी आदि लिखना।</li> <li>• कविता या कहानी को अपनी समझ के आधार पर नए रूप में प्रस्तुत करते हैं। जैसे— कहानी का नाट्य रूपांतरण या कविता को</li> </ul>

<p>तैयार किए जाएँ। अगर आसानी से कोई गायकगायिका मिले तो कक्षा में म/ध्यकालीन साहित्य के अध्यापनशिक्षण में उससे मदद / ली जानी चाहिए।</p> <ul style="list-style-type: none"> <li>• वृत्तचित्रों और फ्रीचर फिल्मों को शिक्षण सामग्री के तौर पर इस्तेमाल करने की ज़रूरत है। इनके प्रदर्शन के क्रम में इन पर लगातार बातचीत के जरिये सिनेमा के माध्यम से भाषा के प्रयोग की विशिष्टता की पहचान कराई जा सकती है और हिंदी की अलगअलग छटा - दिखाई जा सकती है।</li> <li>• कक्षा में सिर्फ एक पाठ्यपुस्तक की भौतिक उपस्थिति से बेहतर यह है कि शिक्षक के हाथ में तरह तरह-की पाठ्यसामग्री को विद्यार्थी देख सकें और शिक्षक उनका कक्षा में अलग-अलग मौकों पर इस्तेमाल कर सकें।</li> <li>• भाषा लगातार ग्रहण करने की क्रिया में बनती है, इसे प्रदर्शित करने का एक तरीका यह भी है कि शिक्षक खुद यह सिखा सकें कि वे भी शब्दकोश, साहित्यकोश, संदर्भग्रंथ की लगातार मदद ले रहे हैं। इससे विद्यार्थियों में इसका इस्तेमाल करने को लेकर तत्परता बढ़ेगी।</li> <li>• समय समय-पर जनसंचार माध्यमों फिल्म साहित्य आदि अलग अलग-माध्यमों से जुड़े व्यक्तियों और विशेषज्ञों को भी स्कूल में बुलाया जाए तथा उनकी देखरेख में - कार्यशालाएँ आयोजित की जाएँ।</li> <li>• कल्पनाशीलता और सृजनशीलता को विकसित करने वाली गतिविधियों जैसे - अभिनय, भूमिका निर्वाह (रोल-प्ले), कविता</li> </ul>	<p>कहानी का रूप देते हैं या किसी रचना को अपने ढंग से विस्तार देते हैं।</p> <ul style="list-style-type: none"> <li>• कार्यालयों में प्रयुक्त होने वाली कामकाजी हिन्दी की समझ प्रकट करते हैं।</li> <li>• फिल्म एवं विज्ञापनों को देखकर उनकी भाषा और शैली के समान दृश्यमाध्यम की भाषा का प्रयोग अपनी रचनाओं में करते हैं।</li> <li>• परिवेशगत भाषाप्रयोगों को सीखते हैं और - उन पर सवाल करते हैं जैसे— रेलवे स्टेशन, एयरपोर्ट, बसस्टैंड-, ट्रकऑटो रिक्शा के - पीछे लिखी गई भाषा की शैली पर ध्यान देते हैं।</li> <li>• हिंदी के साथ साथ अन्य भाषाओं को भी- सीखने का प्रयास करते हैं और उनकी प्रकृति और अंतर्संबंधों के प्रति जागरूक रहते हैं।</li> <li>• पाठ में आए हस्तकला, वास्तुकला, खेतीबाड़ी एवं अन्य व्यवसायों से संबंधित शब्दावली पर ध्यान देते हैं और उनकी उपयोगिता पर चर्चा करते हैं।</li> <li>• सामाजिक, शारीरिक एवं मानसिक रूप से चुनौती प्राप्त समूहों के प्रति संवेदनशीलता एवं समानुभूति लिखकर एवं बोलकर अभिव्यक्त करते हैं।</li> <li>• सूचना प्रौद्योगिकी का उपयोग करते हुए भाषा एवं साहित्य के नवीन कौशलों को अर्जित करते हैं एवं उसकी भाषिक अभिव्यक्ति अलगअलग- माध्यमों के द्वारा करते हैं।</li> </ul>
--	--

<p>पाठ, सृजनात्मक लेखन, विभिन्न स्थितियों में संवाद आदि के आयोजन हों तथा उनकी तैयारी से संबंधित स्क्रिप्ट (पटकथा) लेखन और रिपोर्ट लेखन के अवसर हों।</p> <ul style="list-style-type: none"> <li>• उन्हें इस बात के अवसर मिले कि वे रेडियो, टेलीविज़न पर खेल, फिल्म, संगीत आदि से संबंधित कार्यक्रम देखें और उनकी भाषा, लय आदि पर चर्चा करें।</li> <li>• संगीत, लोककलाओं, फिल्म, खेल आदि की भाषा पर पाठ पढ़ने या कार्यक्रम के दौरान गौर करने/सुनने के बाद संबंधित गतिविधियाँ कक्षा में हों। विद्यार्थियों को प्रेरित किया जाए कि वे आसपास की ध्वनियों और भाषा को ध्यान से सुनें और समझें।</li> <li>• कक्षा में भाषा-साहित्य की विविध छवियों/विधाओं के अन्तर्संबन्धों को समझते हुए उनके परिवर्तनशील स्वरूप पर चर्चा हो जैसे -आत्मकथा, जीवनी, संस्मरण, कविता, कहानी, निबंध आदि।</li> </ul>	
--	--

## कक्षा 12

सीखने-सिखाने की प्रक्रिया	सीखने के प्रतिफल
<p>सभी विद्यार्थियों को समझते हुए सुनने, बोलने, पढ़ने, लिखने और परिवेशीय सजगता को ध्यान में रखते हुए व्यक्तिगत एवं सामूहिक रूप से कार्य करने के अवसर और प्रोत्साहन दिए जाएँ ताकि —</p> <ul style="list-style-type: none"> <li>• कक्षा का वातावरण संवादात्मक हो ताकि अध्यापक, विद्यार्थी और पुस्तक तीनों के बीच एक रिश्ता बन सके।</li> </ul>	<p>विद्यार्थी —</p> <ul style="list-style-type: none"> <li>• हिंदी भाषा एवं साहित्य की परंपरा की समझ लिखकर, बोलकर एवं विचारविमर्श के माध्यम से अभिव्यक्त करते हैं।</li> <li>• रोज़मर्रा के जीवन से अलग किसी घटना /</li> </ul>



<ul style="list-style-type: none"> <li>• विद्यार्थियों को संवाद में शामिल करने के लिए यह भी जरूरी होगा कि उन्हें एक नामहीन समूह न मानकर अलग अलग व्यक्तियों-के रूप में अहमियत दी जाए। शिक्षक को अकसर एक कुशल संयोजक की भूमिका में स्वयं को देखना होगा।</li> <li>• अप्रत्याशित विषयों पर चिंतन करने और सोचे हुए की मौखिक व लिखित अभिव्यक्ति करने की योग्यता का विकास शिक्षक के सचेत प्रयास से ही संभव है। इसके लिए शिक्षक को एक निश्चित अंतराल पर नए-नए विषय - प्रस्तावित कर लेख एवं अनुच्छेद लिखने तथा संभाषण करने के लिए पूरी कक्षा को प्रेरित करना होगा। यह अभ्यास ऐसा है, जिसमें विषयों की कोई सीमा तय नहीं की जा सकती।</li> <li>• मध्यकालीन काव्य की भाषा के मर्म से विद्यार्थी का परिचय कराने के लिए जरूरी होगा कि किताबों में आए काव्यांशों की संगीतबद्ध प्रस्तुतियों के ऑडियो वीडियो-कैसेट तैयार किए जाएँ। अगर आसानी से कोई गायकगायिका मिले तो कक्षा में मध्यकालीन / साहित्यके अध्यापनशिक्षण में उससे मदद / ली जानी चाहिए।</li> <li>• वृत्तचित्रों और फ्रीचर फिल्मों को शिक्षण सामग्री के तौर पर इस्तेमाल करने की जरूरत है। इनके प्रदर्शन के क्रम में इन पर लगातार बातचीत के जरिये सिनेमा के माध्यम से भाषा के प्रयोग की विशिष्टता की पहचान कराई जा सकती है और हिंदी की अलगअलग छटा - दिखाई जा सकती है।</li> </ul>	<p>विशेष में भाषा का काल्पनिक और -स्थिति सृजनात्मक प्रयोग करते हुए भावनाओं को लिखित एवं मौखिक रूप से प्रकट करते हैं। जैसे— कोरोना काल के बाद स्कूल, संचार माध्यम के बिना एक दिन शहर से गाँव तक चलते हुए।</p> <ul style="list-style-type: none"> <li>• पाठ्य-पुस्तकों में शामिल रचनाओं के साथ ही पाठ्यकविता-सामग्री से इतर रचनाओं-, कहानी, एकांकी और समाचार पत्र इत्यादि पढ़ते और लिखकर बोलकर अभिव्यक्त करते हैं।</li> <li>• विभिन्न साहित्यिक विधाओं को पढ़ते हुए उनके सौंदर्य पक्ष एवं काव्यशास्त्रीय संरचनाओं पर चर्चा करते हैं। जैसे— कहानी और कविता में अंतर या कविता में बिब और अलंकार इत्यादि।</li> <li>• पाठ में आयी अलगअलग भाषाओं की - सामग्री के ज़रिए भाषा, समाज, संस्कृति का अध्ययन करते हैं। जैसे— भाषाई समानताओं और विभिन्नताओं पर चर्चा करते हैं।</li> <li>• पाठ में आयी हस्तकला, वास्तुकला, खेतीबाड़ी एवं अन्य व्यवसायों से संबंधित शब्दावली पर ध्यान देते हैं और उनका प्रयोग करते हैं। जैसे— जैविक खेती पर किसानों और कृषि विशेषज्ञों के साक्षात्कारबातचीत या हस्तकला / पर किसी लोक कलाकार से बातचीत के लिए कुछ सवालों के बिंदु तैयार करना।</li> <li>• सभी प्रकार की विविधताओं (धर्म), जाति, लिंग, खेल एवं भाषा के प्रति (संबंधी-तार्किक</li> </ul>
---	---

- कक्षा में सिर्फ एक पाठ्यपुस्तक की भौतिक उपस्थिति से बेहतर यह है कि शिक्षक के हाथ में तरह तरह-की पाठ्यसामग्री को विद्यार्थी देख सकें और शिक्षक उनका कक्षा में अलग-अलग मौकों पर इस्तेमाल कर सकें।
  - भाषा लगातार ग्रहण करने की क्रिया में बनती है, इसे प्रदर्शित करने का एक तरीका यह भी है कि शिक्षक खुद यह सिखा सकें कि वे भी शब्दकोश, साहित्यकोश, संदर्भग्रंथ की लगातार मदद ले रहे हैं। इससे विद्यार्थियों में इसका इस्तेमाल करने को लेकर तत्परता बढ़ेगी।
  - समयसमय पर जनसंचार- माध्यमों फिल्म साहित्य आदि अलग अलग-माध्यमों से जुड़े व्यक्तियों और विशेषज्ञों को भी स्कूल में बुलाया जाए तथा उनकी देखरेख में - कार्यशालाएँ आयोजित की जाएँ।
  - कल्पनाशीलता और सृजनशीलता को विकसित करने वाली गतिविधियों जैसे - अभिनय, भूमिका निर्वाह (रोल-प्ले), कविता पाठ, सृजनात्मक लेखन, विभिन्न स्थितियों में संवाद आदि के आयोजन हों तथा उनकी तैयारी से संबंधित स्क्रिप्ट (पटकथा) लेखन और रिपोर्ट लेखन के अवसर हों।
  - उन्हें इस बात के अवसर मिलें कि वे रेडियो, टेलीविज़न पर खेल, फिल्म, संगीत आदि से संबंधित कार्यक्रम देखें और उनकी भाषा, लय आदि पर चर्चा करें।
  - संगीत, लोककलाओं, फिल्म, खेल आदि की भाषा पर पाठ पढ़ने या कार्यक्रम के दौरान गौर करने/सुनने के बाद संबंधित गतिविधियाँ
- ढंग से चर्चा करते हैं।
  - कार्यालयों में प्रयुक्त होने वाली कामकाजी हिन्दी की समझ प्रकट करते हैं। जैसे— टिप्पणी लेखन, पत्र लेखन इत्यादि।
  - कविता या कहानी को अपनी समझ के आधार पर नए रूप में प्रस्तुत करते हैं।
  - प्राकृतिक, सामाजिक एवं सांस्कृतिक मुद्दों, घटनाओं के प्रति अपनी प्रतिक्रिया को बोलकर लिखकर व्यक्त करते हैं। /जैसे— महामारी से बदलती प्रकृति और समाज की परिस्थितियों पर अलगअलग क्षेत्रों के लोगों - प्राकृतिक आपदा और सामाजिक दायित्व जैसे विषयों पर अपनी राय लिखना।
  - फिल्म एवं विज्ञापनों को देखकर उनकी भाषा और शैली के समान दृश्यमाध्यम की भाषा का प्रयोग करते हैं। जैसे— पटकथा लेखन या विज्ञापन लेखन।

<p>कक्षा में हों। विद्यार्थियों को प्रेरित किया जाए कि वे आसपास की ध्वनियों और भाषा को ध्यान से सुनें और समझें।</p> <ul style="list-style-type: none"> <li>• कक्षा में भाषा-साहित्य की विविध छवियों/विधाओं के अन्तर्संबन्धों को समझते हुए उनके परिवर्तनशील स्वरूप पर चर्चा हो जैसे -आत्मकथा, जीवनी, संस्मरण, कविता, कहानी, निबंध आदि।</li> </ul>	
--	--

### समावेशी शिक्षण व्यवस्था के लिए कुछ सुझाव

कक्षा में सभी बच्चों के लिए पाठ्यचर्या समान रहती है एवं कक्षागतिविधियों में सभी बच्चों की - प्रतिभागिता होनी चाहिए। विशिष्ट आवश्यकता वाले बच्चों के लिए पाठ्यचर्या में कई बार रूपान्तरणों की आवश्यकता होती है। दिए गए सीखने के प्रतिफल समावेशी शिक्षण व्यवस्था के लिए हैं, परंतु कक्षा में ऐसे भी बच्चे होते हैं, जिनकी कुछ विशेष आवश्यकताएँ होती हैं, जैसे बाधित-दृष्टि —, श्रव्यबाधित इत्यादि। उन्हें अतिरिक्त सहयोग की आवश्यकता होती है। उनकी आवश्यकताओं को - ध्यान में रखते हुए शिक्षकों के लिए निम्नलिखित सुझाव प्रस्तावित हैं —

- अध्यापक द्वारा विभिन्न प्रारूपों पत्र लेखन — जैसे), आवेदन आदिको मौखिक रूप से ( समझाया जा सकता है।
- विद्यार्थियों को बोलकर पढ़ने के लिए प्रेरित किया जाना चाहिए।
- अध्यापक बातचीत के माध्यम से कक्षा में संप्रेषण कौशल को बढ़ा सकते हैं।
- नए शब्दों की जानकारी ब्रेल लिपि में अर्थ सहित दी जानी चाहिए।
- दैनिक गतिविधियों का मौखिक अर्थपूर्ण भाषिक अभ्यास।
- प्रश्नों का निर्माण करना और बच्चों को उत्तर देने के लिए प्रोत्साहित करना। साथ ही बच्चों को भी प्रश्ननिर्माण करने को कहना और स्वयं उनका उत्तर-तलाश करने के लिए कहना।
- उच्चारण सुधारने के लिए ऑडियो सामग्री का प्रयोग और कहानी सुनाना। अलगअलग तरह की - आवाज़ों की रिकॉडिंग करके, जैसे झरना —, हवा, लहरें, तूफ़ान, जानवर और परिवहन, ताकि उनके माध्यम से संकल्पनाविचार को समझाया जा सके।/धारणा/
- विद्यार्थियों को एकदूसरे से बातचीत के लिए प्रेरित करना।-

- अभिनय, नाटक और भूमिकाका प्रयोग करने के लिए प्रेरणा देना। (प्ले-रोल) निर्वाह-
- पढ़ाए जाने वाले विषय पर दृश्यशब्दकोश की शीट तैयार की जाए-, जैसेशब्दों को चित्रों के — बताया जाए।/माध्यम से दिखाया
- बोर्ड पर नए शब्दों को लिखना। यदि उपलब्ध हो तो शब्दकोश के शब्दों को चित्र के माध्यम से प्रयोग किया जाए।
- नए शब्दों को बच्चों के रोजमर्रा के जीवन में इस्तेमाल करना और विभिन्न प्रसंगों में उनका प्रयोग करना।
- शीर्षक और विवरण के साथ दृश्यात्मक तरीके से कक्षा में शब्दों का प्रयोग करना।
- स्पष्ट रूप से समझाने के लिए फुटनोट को उदाहरण के साथ लिखना।
- संप्रेषण के विभिन्न तरीकों जैसे) — मौखिक एवं अमौखिक ग्राफिक्स, कार्टून्स बोलते)हुए गुब्बारे(, चित्रों , संकेतों, ठोस वस्तुएँ एवं उदाहरणका प्रयोग करना। (
- लिखित सामग्री को छोटेछोटे एवं सरल वाक्यों में तोड़ना-, संक्षिप्त करना तथा लेखन को व्यवस्थित करना।
- बच्चों को इस योग्य बनाना कि वे रोजमर्रा की घटनाओं को साधारण ढंग से डायरी, वार्तालाप, जर्नल, पत्रिका इत्यादि के रूप में लिख सकें।
- वाक्यों की बनावट पर आधारित अभ्यासों को बारबार देना-, ताकि बच्चा शब्दों एवं वाक्यों के प्रयोग को ठीक ढंग से सीख सके। चित्रोंसमसामयि/समाचारों/क घटनाओं से उदाहरणों का प्रयोग करें।
- बच्चों के स्तर के अनुसार उन्हें पाठ्यसामग्री तथा संसाधन प्रदान करना।-
- पाठ में आए मुख्य शब्दों पर आधारित तरह तरह-के अनुभवों को देना।
- कलर कोडिंग )colour coding) प्रयोग करना -स्वर एवं व्यंजन के लिए अलग —जैसे) (अलग रंगों का प्रयोग, कांसेप्ट मैप (concept map) तैयार करना।
- प्रस्तुतिकरण के लिए विभिन्न शैली एवं तरीकों, जैसे दृश्य —, श्रव्य, प्रायोगिक शिक्षण इत्यादि का प्रयोग।
- अनुच्छेदों को सरल बनाने के लिए उनकी जटिलता को कम किया जाए।

- सामग्री को और अधिक आकर्षक बनाने के लिए भिन्नभिन्न विचारों-, नए शब्दों के प्रयोग, कार्डस, हाथ की कठपुतली, वास्तविक जीवन के अनुभवों, कहानी प्रस्तुतिकरण, वास्तविक वस्तु एवं पूरक सामग्री का प्रयोग किया जा सकता है।
- अच्छी समझ के लिए ज़रूरी है कि विषय से संबंधित पृष्ठभूमि के बारे में पूर्व ज्ञान से जोड़ते हुए नई सूचना दी जाए।
- कविताओं का पठन, समुचित भावाभिव्यक्तिगायन के साथ किया जाए //अभिनय/
- पाठों के परिचय एवं परीक्षण खंड अथवा आकलन में विभिन्न समूहों के लिए विभिन्न प्रकार के प्रश्नों की रचना की जा सकती है।
- पठनदो बच्चों के समूह द्वारा पाठ्यसामग्री को प्रस्तुत -कार्य को अच्छा बनाने के लिए दो-करवाया जाए।
- नए शब्दों के लिए शब्दों के अर्थ या पर्यायवाची, उन शब्दों के साथ ही कोष्ठक में लिखे जाएँ। जिन शब्दों की व्याख्या ज़रूरी हो, उन्हें व्याख्यायित किया जाए तथा सारांश को रेखांकित किया जाए।

## सीखने के प्रतिफलकुछ महत्वपूर्ण बिंदु—

- सीखने के प्रतिफल सीखने सिखाने की प्रक्रिया के दौरान शिक्षकों तथा-बच्चों को सिखाने में मदद करने वाले सभी लोगों की सुविधा के लिए विकसित किए गए हैं।
- उच्चतर माध्यमिक स्तर )111–2सिखाने की प्रक्रिया और माहौल में विशेष अंतर -पर सीखने ( सिखाने के विकासात्मक स्तर में अंतर हो सकता है।-नहीं किया गया है। यद्यपि भाषा सीखने
- भाषा सीखने के प्रतिफलों को ठीक ढंग से उपयोग करने के लिए, दस्तावेज़ में प्रारंभिक पृष्ठभूमि दी गई है। इसे पढ़ें, यह विद्यार्थियों की प्रगति को सही ढंग से समझने में मदद करेगी।
- इसमें राष्ट्रीय पाठ्यचर्या की रूपरेखा 2005—के आधार पर विकसित पाठ्यक्रम में ग्यारहवीं और बारहवीं कक्षाओं के लिए हिंदी शिक्षण के उद्देश्यों को दृष्टि में रखते हुए पाठ्यक्रम संबंधी अपेक्षाएँ दी गई हैं।
- इन पाठ्यक्रम संबंधी अपेक्षाओं को विद्यार्थी तभी हासिल कर सकता है, जब सीखने के तरीके और कक्षा में अनुकूल माहौल हो।
- यद्यपि हमारी कोशिश यही रही है कि कक्षावार प्रतिफलों को दिया जाए, लेकिन भाषा की कक्षा में सीखने के विभिन्न चरणों को देखते हुए इस प्रकार का बारीक अंतर कर पाना मुश्किल हो जाता है।
- सीखने के प्रतिफल बच्चे के मनोवैज्ञानिक धरातलको ध्यान में रखते हुए, सीखने की प्रक्रिया के सभी अधिगमानुकूल तथ्यों व आवश्यकताओं को ध्यान में रखकर तैयार किए गए हैं।
- ये प्रतिफल सीखनेसिखाने की प्रक्रिया के दौरान सतत और समग्र आकलन में भी आपकी मदद - करेंगे, क्योंकि सीखनेभी (प्रतिपुष्टि) सिखाने की प्रक्रिया के दौरान ही बच्चे को लगातार फ़ीडबैक- मिलता जाएगा।
- इन प्रतिफलों की अच्छी समझ बनाने के लिए पाठ्यचर्या ओर पाठ्यक्रम को पढ़नासमझना बेहद - ज़रूरी है।
- ये प्रतिफल विद्यार्थी की योग्यता, कौशल, मूल्य, दृष्टिकोण तथा उसकी व्यक्ति गत और सामाजिक विशेषताओं से जुड़े हुए हैं। आप देखेंगे कि विद्यार्थी की आयु, स्तर और परिवेश की भिन्नताओं के अनुसार प्रतिफलों के सिद्धांत परिणाम में भी बदलाव आता है।

- समावेशी कक्षा को ध्यान में रखते हुए पाठ्यक्रम की अपेक्षाओं, सीखने के तरीके और माहौल तथा प्रतिफलों के विकास में सभी तरह के बच्चों को ध्यान में रखा गया है।
- अलग अलग-शिक्षार्थीसमूहों एवं भाषायी परिवेश के अनुसार उल्लिखित एक ही प्रतिफल का - अलग स्तर संभव है-अलग, जैसेपढ़ने या राय व्यक्त करने की दक्षता के अनुसार -लिखने— संबंधित प्रतिफलों का विविध स्तर हो सकता है।
- इस दस्तावेज़ में चिह्नित किए गए प्रतिफलों के अतिरिक्त प्रतिफलों की ओर भी अध्यापकों का ध्यान जाना चाहिए।

### संदर्भ सामग्री

भाषा शिक्षण, भाग 1, एन.टी.आर.ई.सी., नयी दिल्ली

भाषा शिक्षण, भाग 2, एन.टी.आर.ई.सी., नयी दिल्ली

भारतीय भाषाओं का शिक्षण, राष्ट्रीय फोकस समूह का आधार पत्र (1.3), एन.टी.आर.ई.सी., नई दिल्ली

इनसर्विस प्रोफेशनल डेवलपमेंट पैकेज(माध्यमिक स्तर) टीचिंग ऑफ़ हिंदी—, आर .ए.एस.एम. के तहत प्रकाशित (अप्रकाशित प्रशिक्षण पैकेज)

समझ का माध्यममी) .डियम ऑफ़ लर्निंग .(एन.टी.आर.ई.सी., नयी दिल्ली

संस्कृतम्  
अधिगम-प्रतिफलानि (Learning Outcomes)  
उच्चमाध्यमिकस्तरकृते (For Higher Secondary)

DRAFT



विश्वे समुपलब्धासु भाषाषु संस्कृतभाषा प्राचीनतमा । ऋग्वेदादारभ्य इदानीं यावत् भाषेयं अवाधगत्या प्रवहमाना वर्तते । संस्कृतसाहित्ये विद्यमानानां साहित्य-दर्शन-ज्ञान-विज्ञानादीनामध्ययनस्य प्रासंगिकता अद्यापि असंशयतां भजते । भाषाया अस्याः अध्ययनेन न केवलं भारतीय-सांस्कृतिकपरम्परायाः, सुसमृद्धस्येतिहासस्य ज्ञानविज्ञानस्य च अजस्रोतसः ज्ञानं भवति, अपि तु अन्यभारतीयभाषाणां साहित्यस्य ज्ञानेऽपि सहायता लभ्यते । राष्ट्रियैकतादृष्ट्याऽपि संस्कृतस्य महत्त्वपूर्णं स्थानं विद्यते । संस्कृतस्य इदानीन्तनस्वरूपमन्यभाषावत् भारतीयबहुभाषिकतायाः अभिन्नमेकमंगम् । दैनन्दिनजीवनेऽपि भाषेयं सर्वथा उपयोगिन्येव । अस्याः अध्ययनेन न केवलं संस्कृतभाषायाः प्रकृतिः संरचना च ज्ञायेते, अपि तु अन्यभारतीयभाषाणामवबोधने शिक्षणे चापि सारल्यमनुभूयते ।

भाषायाः प्रमुखमुद्देश्यं भवति भावसम्प्रेषणम् । छात्राः यां भाषां पठन्ति तया भाषया स्व-भावान् प्रकाशयितुं सक्षमाः भवेयुस्तथा अपरैः कथिताः वाचोऽवबुध्य प्रत्युत्तरप्रदाने समर्थाः स्युः । एतदतिरिच्य संस्कृतभाषायाः प्राचीनार्वाचीन-साहित्याध्ययनेऽपि दत्तावधानाः स्युरित्येतदर्थं पाठ्यपुस्तकेषु विविधाः पाठाः समाविष्टाः । पाठ्यांशानां भावार्थाः, प्रयुक्ताः व्याकरणबिन्दवः प्रेष्याश्च सन्देशाः विद्यार्थिनां कृते बहूपयोगिनः भवन्ति ।

यथैवान्यभाषाशिक्षणक्रमे संस्कृतं सहायकं भवति तथैव संस्कृतभाषाशिक्षणक्रमेऽप्यन्यासां भारतीयभाषाणां सहायता स्वीकर्तुं शक्यते । षष्ठकक्षायाः आरभ्य संस्कृताध्ययनस्य पंचवर्षात्मके कालावधौ विद्यार्थि नां अस्याम् भाषायाम् आत्मविश्वासे दृढतरे सति अन्यभाषायां निर्भरता न्यूना जायेत इति सामान्या अपेक्षा क्रियते । उच्चमाध्यमिकस्तरे अन्यभाषाभिः सममेव संस्कृतस्य सुदृढसम्बन्धमवबुद्ध्य माध्यमिकस्तरे छात्राः विविध-भाषाकौशलेषु सुपरिचिताः भवेयुरित्येतत्सुस्पष्टं लक्ष्यम् । उच्चमाध्यमिकस्तरे भाषाकौशलज्ञानादतिरिच्य ते विविधाभिः साहित्यिकविधाभिः परिचिताः स्युस्तथा साहित्यांशानां रसास्वादनं कर्तुं शक्नुयुरिति संस्कृतशिक्षणस्योद्देश्यम् । एतत् सहितं संस्कृत साहित्यस्य इतिहासविषयकम् सामान्यज्ञानं अपि अस्मिन् स्तरे अपेक्ष्यते किं बहुना साहित्यांशानां प्रयोगे व्यवहृतैः व्याकरणनियमैः चापि छात्राः अवगताः भवेयुः, तदनुसारं च प्रयोगं कुर्युः इतीयमपेक्षा त्वपरिहार्या ।

## पाठ्यचर्या-प्रत्याशाः

- दैनन्दिनजीवने प्रयुज्यमानानां वाक्यानामवबोधनं सम्भाषणञ्च ।
- कक्षायां शिक्षकैः सहपाठिभिश्च प्रकटितेषु विषयेषु स्व-मतोपस्थापनम्, पश्रोपस्थापनम्, विचारविनिमये च सक्रिय-सहभागिता ।
- सरलसंस्कृतेन समकालीनविषयेषु, समस्यासु घटनासु च स्व-विचाराभिव्यक्तिः ।
- आकाशवाणी-दूरदर्शनादिषु प्रसार्यमाणानां संस्कृतकार्यक्रमाणामवधानपूर्वकं श्रवणम्, अवबोधनं सरलभाषया च
- सारांशप्रकटनम् ।
- पाठान् पठित्वा, अन्येषां विचारान् च श्रुत्वा स्व-शैल्या सरलसंस्कृतेन भावकथनम् ।
- सरल-संस्कृत-सुभाषितानां बोधपूर्वकमुच्चारणं, स्वभाषायां विद्यमानानां संस्कृतपदानामभिज्ञानमवबोधनञ्च ।
- अन्य-विषयेषु समुपलब्ध-पारिभाषिक-पदेषु विद्यमान-संस्कृतपदानामभिज्ञानम् ।
- ग्रन्थालये इन्टरनेट-आदिषु स्वेच्छया संस्कृत-पुस्तक-पत्र-पत्रिकादीनां पठनं सारांशलेखनञ्च ।
- पाठ्यक्रमे पाठ्येतर-पुस्तकेषु च विद्यमानानां पद्यानां पठनम्, अवबोधनं स्व-भाषया तेषां भावार्थवर्णनञ्च ।
- औपचारिकमनौपचारिक-पत्रलेखनम्, संवादलेखनं लघुकथा-लेखनञ्च ।
- व्याकरणदृष्ट्या शुद्धवाक्यप्रयोगसामर्थ्यप्राप्तिः ।
- पाठ्यपुस्तकेषु प्रयुक्तानां छन्दसां लयपूर्वकं सस्वर-वाचनम् ।

- गद्यांशानां समुचितोच्चारणेन सह पठनमवबोधनञ्च ।
- अंग्रेजी-प्रांतीयभाषाभ्यः संस्कृतेन तथा संस्कृताच्च अन्य-भाषाभिः अनुवादः ।
- गद्यांशानां पठनं साहित्यिकसौन्दर्यबोधश्च ।
- पर्यावरणसंरक्षण-सामाजिकमूल्यविषयान् अवगम्य वाक्यरचनाकौशलप्राप्तिः ।
- सुभाषितानां भावार्थं सन्देशञ्च अवबुध्य दैनन्दिनव्यवहारे अनुपालनम् ।
- संस्कृतपद्यानां सान्त्वयार्थावबोधः ।
- नाट्य-संवादात्मकपाठानामवबोधः अभिनयकलासामर्थ्यावाप्तिश्च ।
- जाति-धर्म-वर्ण-लिङ्ग-प्रान्त-शारीरिकक्षमता-निर्विशेषेण संस्कृतं सर्वजनग्राह्यमिति भावनाजागरणम् ।
- संस्कृतसाहित्यांशानाम् अध्ययने श्रद्धा तद्गत-राष्ट्रिय-सामाजिक-वैयक्तिकमूल्यानां जीवने अनुपालनं प्रसारश्च ।
- गद्य-पद्य चम्पू इत्यादि काव्यभेदानाम् अभिज्ञानम् तद्विषयक परिचयबोधश्च तेषाम् लक्षणानां वाचनम् लेखनम् च ।
- नाट्यतत्वानाम् अभिज्ञानम् यथा- नान्दी भरतवाक्यम्, स्वगतम्, प्रकाशम् इत्यादि ।

**शिक्षणशास्त्रीय-प्रक्रिया:अधिगम-प्रतिफलानि च**  
**कक्षा – एकादशी**

<b>शिक्षणशास्त्रीय-प्रक्रिया (Pedagogical Process)</b>	<b>अधिगम-प्रतिफलानि (Learning Outcomes)</b>
<p>1. कक्षायाः वातावरणम् ईदृशम् स्यात् येन छात्राः शिक्षकाः च अधिकाधिकम् संस्कृत भाषायाः प्रयोगं कुर्वन्तु । अनेन विद्यार्थिनः एकादश्याम् कक्षायाम् ईदृक् स्तरम् प्राप्नुवन्ति येन ते सरलसंस्कृतवाक्यानाम् पठने लेखने च समर्थाः भवन्ति । यथा शिक्षणप्रक्रियायाम् आधिक्येन छात्राणां सहभगिता यथा स्यात्, तादृशं वातावरणं निर्मेयम् ।</p> <p>➤ शिक्षणक्रमे भाषायाः सर्वेषां कौशलानाम् (श्रवणम्, भाषणम्, पठनं लेखनञ्च) उपरि बलं दातव्यम् ।</p> <p>शिक्षणक्रमे शिक्षकः सरलसंस्कृतवाक्यैः प्रश्नान् पृच्छेत् । छात्रैः पृष्ठानां प्रश्नानां यथोचितम् उत्तरं दद्यात् । पाठावबोधनकालेऽपि अध्यापकः हिदीभाषया उत क्षेत्रीयभाषया सह सरलं संस्कृतं व्यवहरेत् ।</p> <p>➤ कक्षायामधिकाधिकं संस्कृतमयं वातावरणं कल्पनीयम् । तथा च सामान्य-व्यवहाराय अध्यापकः सततं सरलसंस्कृतवाक्यानां प्रयोगं कुर्यात्, एवञ्च छात्रान् अपि कारयेत् । यथा-सुप्रभातम् । शुभमध्याह्नम् । शुभ सन्ध्या । शुभरात्रिः । भवान् कथमस्ति? अद्य वयं पद्यपाठं पठामः । भवन्तः सन्नद्धाः खलु?</p> <p>➤ अध्यापकः छात्रैः अधिकाधिकप्रश्नान् संस्कृतेनैव पृच्छेत् तथा च संस्कृतेनैव उत्तरं दातुं छात्रान् प्रोत्साहयेत् ।</p> <p>2. संवादकौशलवर्धनाय समूहाभ्यासः तथा च वैयक्तिकाभ्यासः कारयेत् ।</p>	<p><b><u>Listening</u></b></p> <ol style="list-style-type: none"> <li>1. संस्कृतेन प्रदत्तान् निर्देशान् अवगम्य तदनुसारं कार्यम् करोति ।</li> <li>2. कक्षायां शिक्षकाणां संस्कृतेन दीयमानं वक्तव्यं श्रुत्वा प्रतिक्रियां ददाति ।</li> <li>3. रेडियो-दूरदर्शनादि कार्यक्रमेषु प्रस्तुतं संस्कृतं कार्यक्रमान् श्रुत्वा अवगच्छति प्रतिक्रियां च यच्छति ।</li> </ol> <p><b><u>Speaking</u></b></p> <ol style="list-style-type: none"> <li>4. विद्यार्थी संस्कृतभाषया कक्षोपयोगीनि दैनन्दिन-जीवनोपयोगीनि वाक्यानि वदति ।</li> <li>5. औपचारिक प्रश्नानाम् उत्तरं प्रदाने समर्थः अस्ति ।</li> <li>6. कक्षायाम् प्रश्नान् पृच्छति ।</li> <li>7. उत्तराणि अवबुध्य संतोषम् प्रकटयति ।</li> <li>8. प्रश्न-आश्चर्य-उत्साह-दुःख-विनम्रताऽऽदीन् भावान् संस्कृतभाषया वदति लिखति च ।</li> <li>9. कमपि विषयमधि कृत्य संक्षेपेण भाषणम् करोति ।</li> <li>10. वाद-विवादं करोति ।</li> </ol> <p><b><u>Reading</u></b></p> <ol style="list-style-type: none"> <li>11. अपठितगद्यांशं पठित्वा तदाधारितप्रश्नानामुत्तरप्रदाने सक्षमः अस्ति ।</li> <li>12. गद्यांश-पद्यांश-नाट्यांशा धारितानां प्रश्नानाम् उत्तराणि संस्कृतेन वदति लिखति च ।</li> <li>13. संस्कृत-नाट्यांशानां संवादानां उचितोच्चारणं करोति ।</li> <li>14. तेषां भावानुरूपं उचित आरोह-अवरोह पूर्ववकम् शारीरिकक्रियाकलापेन च सह</li> </ol>

3. संस्कृतस्य अधिकाधिकसामग्रीणां प्रयोगं कुर्यात् ।  
यथा- अन्तर्जाले समुपलब्ध-दृश्य-श्रव्यसामग्र्यः,  
कक्षायाः भित्तौ संस्कृतस्य श्लोकवाक्यानि,  
कक्षायां संस्कृतपाठाधारि तानि फलकादीनि ।
4. प्रसङ्गवशात् छात्रैः एतादृशान् प्रश्नान् पृच्छेयुः,  
येन ते चिन्तनस्य अवसरं प्राप्नुयुः तथा च  
कस्मिंश्चिद् निर्णयपर्यन्तं यान्तु । यथा- भवान्  
अस्यां परिस्थितौ यदि भविष्यति तर्हि किं निर्णयं  
स्वीकरिष्यति? पाठस्य नायकेन नायिकया वा  
यन्निर्णयं गृहीतं तद् भवतां दृष्टौ सम्यग् अस्ति  
अथवा नास्ति ।
5. कथमस्ति भवान् ? वयम् कुशलिनः स्मः । अद्य  
किं पठनीयम् अस्ति ? अद्य वयम् पद्यपाठान्  
पठिष्यामः? धन्यवादः महोदय ! अस्माभिः  
सम्यकरूपेण पाठः अवबोधितः ।
6. कृपया शब्दस्यास्य अर्थान् स्पष्टीकुर्वन्तु ।  
एकवारम् पुनः बोधयन्तु । एवं संवादमाध्यमेन  
छात्राणाम् अभिव्यक्तिकौशल वर्धनस्य प्रयासः  
करणीयः ।
7. धन्यवादः महोदय ! अस्माभिः सम्यकरूपेण  
पाठः अवबोधितः । आम् महोदय अस्माभिः  
पाठस्य भावः अवबुद्धः ।
8. महोदय ! किं तदानीम् अपि जलप्रदूषणम्  
आसीत् ?
9. कक्षायां कमपि विषय मधिकृत्य भाषणाभ्यासः  
कार्यः ।
10. पक्षे-प्रतिपक्षे च कथं स्व मन्तव्यं स्थापनीयम्  
इत्यस्यापि अभ्यासः कार्यः ।
11. शिक्षकैः समसामयिक विषयाणाम् उपरि  
कानिचन वाक्यानि लिखि त्वा तदाधारितानां  
प्रश्नानां अभ्यासः कार्यः येन छात्राः  
अपठितानुच्छेदानां भावग्रहणे समर्थाः स्युः,

संवादवाचनम् करोति ।

15. तदाधारितानां प्रश्नानाम् उत्तराणि संस्कृतेन  
वदति लिखति च ।

16. पाठ्यपुस्तकगतान् संस्कृतश्लोकान्  
छन्दोनुगुणम् उच्चारयति ।

### Writing

17. संस्कृत-भाषया औपचारिक-अनौपचारिक-  
पत्रलेखनार्हः भवति ।
18. प्रदत्त विषयोपरि अनुच्छेदं लिखति,  
संवाद-लेखनं च करोति ।
19. छात्रः स्वतंत्रतया रचनात्मक लेखनकौशलम्  
कथामाध्यमेन प्रकटयति ।
20. (i) पाठ्यपुस्तकगतान् गद्यपाठान् अवबुध्य  
तेषां सारांशं वदति लिखति च ।  
(ii) पाठ्यपुस्तकगतान् पद्यपाठान् अवबुध्य तेषां  
सारांशं वदति लिखति च ।  
(iii) पाठ्यपुस्तकगतान् नाट्यांशपाठान् अवबुध्य  
तेषां सारांशं वदति लिखति च ।
21. तेषां भावार्थं प्रकटयति ।
22. शब्दार्थं परं व्यंग्यार्थं च विशदीकर्तुं शक्नोति  
।

### Grammar

23. अंग्रेजी-हिंदी प्रांतीय भाषाभ्यः संस्कृतेन  
अनुवादं करोति संस्कृतात् च स्वभाषया  
अनुवादम् करोति ।
24. गद्यांशे, पद्यांशे, नाट्यांशे च प्रयुक्तानाम्  
संधियुक्त पदानां विच्छेदम् करोति ।
25. गद्यांशे, पद्यांशे, नाट्यांशे च प्रयुक्तानाम्  
समास-विग्रहं करोति ।
26. श्लोकान्वयं करोति ।
27. गद्यांशे, पद्यांशे, नाट्यांशे च प्रयुक्तानाम्  
प्रकृति प्रत्यय विभागम् संयोगम् वा करोति ।  
पाठे प्रयुक्तानां कृदन्त-तद्धित-स्त्री-प्रत्ययान्

सममेव च उत्तरम् लिखितुं वक्तुं च पारयेयुः ।

12. (i) शिक्षकः स्वयम् आदर्शोच्चारणं कुर्यात्, तथा भाषणे लेखने च व्याकरणनियमान् पालयेत्, छात्राणां लुटयः सहजं मत्वा शनैः शनैः सम्यक् कारयेत् ।

यथा- कस्मिन् ग्रामोपान्ते पद्मिनी नाम्नी एका पुष्करिणी आसीत् । तत्र ग्रामस्य जनाः स्नानं कुर्वन्ति । वसनं क्षालयन्ति । तस्या एव जलमानीय पिबन्ति, पाकादिकर्म च कुर्वन्ति । तत्रैव गोमेषच्छागादीनां स्नानमपि सम्पादयन्ति । पुष्करिणीं परितः नाना वृक्षाः सन्ति । केचन वृक्षाः तटसंलग्नाश्च वर्तन्ते । पुष्करिण्याः अपरभागे एकः आश्रमः अस्ति । तत्र एको मुनिः निवसति । सोऽपि तर्पणादिकं कर्म तत्र करोति । सः जनान् अनुनयति । वारं वारमपि उपदिशति । परं न कोऽपि तस्य वचनं शृणोति ।

➤ बोधप्रश्नाः -

1. पुष्करिणी कुत्र आसीत् ?
2. ग्रामस्य जनाः कुत्र स्नानं कुर्वन्ति ?
2. मुनेः चिन्तायाः कारणम् किम् आसीत् ?
3. अस्मिन् गद्यांशे का चिन्ता प्रकटिता ?

(ii) गीतानां पाठनं सस्वरोच्चारणपूर्वकं कुर्यात् । तथा च कदाचित् व्यक्तिगतरूपेण कदाचिच्च समूहात्मकमनुवाचनं कारयेत् ।

काचः काञ्चनसंसर्गाद् धत्ते मारकतीं द्युतिम् ।

तथा सत्सन्निधानेन मूर्खो याति प्रवीणताम् ।

➤ प्रश्न-उत्तर — काचः कस्मात् मारकतीं द्युतिं धत्ते ?

केन मूर्खः प्रवीणः भवति ?

श्लोकेऽस्मिन् कस्य महत्त्वं वर्णितम् ?

(iii) बालः-जृम्भस्व सिंह! दन्तास्ते गणयिष्ये ।

प्रथमा-अविनीत! किं नोऽपत्यनिर्विशेषाणि

अवगम्य समानान्तरं प्रयोगं करोति ।

28. पाठे प्रयुक्तानां कारक-विभक्ति-उपपदविभक्तीः प्रयोगं अवगम्य समानान्तरं प्रयोगं करोति ।

29. कर्तृक्रिया अनविति करोति ।

30. अशुद्धि-संशोधनं करोति ।

31. वाच्य-परिवर्तनं करोति ।

32. पाठे प्रयुक्तानां उपसर्गयुक्तपदानि वाक्येषु व्यवहरति ।

### History

33. नाट्यांशस्य स्रोतसः नाम वदति लिखति च ।

34. पाठानां लेखकस्य नाम जानाति वदति लिखति च ।

35. पाठ्यपुस्तके संकलितानां मूलग्रंथानां रचयितुः च नाम वदति लिखति च ।

36. गद्य-पद्य चम्पू इत्यादि काव्य विधानां परिचयम् प्राप्य तद् विषये लिखति ।

37. नाट्य तत्वानां विषये जानाति ।

षत्त्वानि विप्रकरोषि? हन्त। वर्धते ते  
संरम्भः । स्थाने खलु ऋषिजनेन सर्वदमन  
इति कृतनामधेयोऽसि ।

दुष्यन्तः- किं न खलु बालेऽस्मिन् औरस इव  
पुत्रे स्निह्यति मे मनः? नूनमनपत्यता मां  
वत्सलयति ।

द्वितीया-एषा खलु केसरिणी त्वां लङ्घयिष्यति  
यद्यस्याःपुत्रकं न मुञ्चसि ।

बालः-(सस्मितम्) अहो बलीयः खलु  
भीतोऽस्मि । (इत्यधरं दर्शयति) ।

प्रथमा-वत्स! एनं बालमृगेन्द्रं मुञ्च च, अपरं  
ते क्रीडनकं दास्यामि ।

➤ नाटक-संवादादिपाठानां पाठनं यथासम्भवं  
प्रत्यक्षविधिना एव करणीयम् ।

➤ भावानुसारं आरोहावरोहपूर्वकं वाचनम् करणीयम्  
यथास्थानम् शारीरिक क्रियाकलापानाम् अपि  
प्रदर्शनं करणीयम् । नाटक-संवादसमं पाठं  
साभिनयं पाठनीयम् । एतदर्थमपि यत्नं विधेयं यत्  
नाटकादिषु पालानुसारम् अभिनयमपि स्यात् ।

➤ बोध प्रश्नाः -

दुष्यन्तस्य मनः कस्मिन् स्निह्यति ?

का दुष्यन्तं वत्सलयति ?

सर्वदमन इति नाम केन प्रदत्तम् ?

13. नाटक-संवादादिपाठानां पाठनं यथासम्भवं  
प्रत्यक्षविधिना एव करणीयम् ।

14. भावानुसारं आरोहावरोहपूर्वकं वाचनम्  
करणीयम् यथास्थानम् शारीरिक क्रियाकलापानाम्  
अपि प्रदर्शनं करणीयम् । नाटक-संवादसमं पाठं  
साभिनयं पाठनीयम् । एतदर्थमपि यत्नं विधेयं यत्  
नाटकादिषु पालानुसारम् अभिनयमपि स्यात् ।

15. पर्यायपदानि — सुवर्णः - काञ्चनः

दीप्तिः — द्युतिः

कुशलताम् – प्रवीणताम्

गच्छति – याति

16. गीतानां पाठनं सस्वरोच्चारणपूर्वकं कुर्यात्।  
तथा च कदाचित् व्यक्तिगतरूपेण कदाचिच्च  
समूहात्मकमनुवाचनं कारयेत्।

17. विविधप्रकारकाणां पत्राणां (औपचारिकम्  
अनौपचारिकम् च) प्रारूपस्य, विषयवस्तुनः  
लेखनशैल्याः भावप्रकटनस्य च बोधम् कारयित्वा  
तेषाम् अभ्यासः कार्यः। प्रारंभे संपूर्णपत्रलेखनस्य  
अभ्यास एव अपेक्षितः भवति।

18. कक्षायाम् समासामयिक विषयणामुपरि चर्चा  
भवि तव्या। छात्राः स्वभाषासु अपि तस्मिन्  
विषये स्वविचारान् प्रकटयेयुः इति प्रयासः भवेत्  
पुनः तान् एव प्रकटिते भावानाम् अनुवादाय  
प्रेरयेत्। तदनन्तरं तानि सम्मेल्य संक्षेपेण  
पंचवाक्यात्मकम् अनुच्छेदं लिखित्वा दर्शयेत्।  
यदा छात्राः आत्मनः मुख्यभूमिकानां पश्यन्ति ते  
सोत्साहं वाक्य निर्माणस्य प्रयासं कुर्वन्ति।

19. सामर्थ्यमिममवाप्तुं शिक्षकैः मध्ये-मध्ये कथाः  
श्रावयित्वाः। अनेन संस्कृत-भाषा-परिचिति-  
सममेव कथाकथनस्य प्रकारः अपि ज्ञायते।  
प्रारंभे काश्चन कथाः कथयित्वा ताः स्वभाषया  
वक्तुं लेखितुं च निर्देशः प्रदातव्यः। ततः परं  
अपूर्णा कथां सम्मुखं स्थापयित्वा तां पूरयितुं  
निर्देशः प्रदातव्यः।

20. (i) सारांशः - अस्मिन् गद्यांशे जलस्य  
स्वच्छता विषये प्रकाशः प्रदत्तः। वयं यस्य  
तडागस्य, कूपस्य, नद्याः वा जलं व्यवहरामः तस्य  
तस्याः वा स्वच्छतायाः उपरि अवधानमपि  
दातव्यम् इति तात्पर्यम् अस्ति। जलप्रदूषणेन  
अस्माकं एव स्वास्थ्यं नश्यति अतः प्रदूषणं न  
वर्धनीयम् इति संदेशः अस्ति।



(ii) सतां संगत्या मूर्खः जनः अपि विद्वान् भवति,  
अतएव सदैव सज्जनानां संगे वस्तव्यम् ।

(iii) अस्मिन् नाट्यांशे सर्वदमनस्य निर्भीकता  
दुष्यन्तस्य च वात्सल्यं संक्षेपेण वर्णितमस्ति ।  
आश्रमस्थः अपि सर्वदमनः स्वक्षत्रियोचितां प्रकृति  
प्रकटयति इति भावः ।

21. भावार्थः - सतां संगत्या मूर्खः जनः अपि तथैव  
विद्वान् भवति, अकुशलः अपि कुशलः भवति,  
अविनीतः अपि विनयशीलः भवति यथा स्वर्णस्य  
संगत्या काचस्य अपि द्युतिः स्वर्णमयी भवति ।

22. व्यंग्यार्थ- कोऽतिभारः समर्थानां किं दूरं  
व्यवसायिनाम् ।

को विदेशः सविद्यानां कोऽप्रियः प्रियवादिनाम्  
॥

यहाँ यह स्पष्ट करना आवश्यक है कि  
विद्वानों के लिए कोई देश इसलिए विदेश  
नहीं होती क्योंकि वह अपनी विद्वत्ता से  
सभी को अपना बना लेता है। इसीप्रकार  
मीठा बोलने वाले के लिए कोई पराया  
नहीं होता है।

23. व्याकरणनियमानां कण्ठस्थीकरणमकारयि त्वा  
अनेकोदाहरणमाध्यमेन बोधनीयं येन छात्राः  
स्वयमेव निर्णयपर्यन्तं गच्छेयुः, तादृशं वातावरणं  
कल्पनीयम्। सदैव गद्य-पद्य-नाटकादीनां पाठेषु  
समागतानामुदाहरणानाम् उल्लेखं कृत्वा तेषां ज्ञानं  
सम्पोषणीयम्।

अनुवादकौशलप्रदानाय कर्तृक्रिया अन्वितेः ज्ञानम्  
आवश्यकम् ।

- पुरुषवचनलकाराणां ज्ञानम् अपि प्रदातव्यम् ।
- लिगस्य ज्ञानम् अपि अपेक्षितम् ।
- कारकविभक्तेः, उपपदविभक्तेश्च ज्ञानम्

आवश्यकम् ।

24. (i) सन्धिः -

ग्राम + उपान्ते = ग्रामोपान्ते

एकः + मुनिः = एकोमुनिः

मेष + छाग + आदीनाम् =  
मेषच्छागादीनाम्

(ii) सन्धिः - मूर्खः + याति = मूर्खोयाति

सत् + निधानेन = सन्निधानेन

(iii) सन्धिः - दन्तान् + ते = दन्तास्ते

नामधेयः + असि = नामधेयोऽसि

इति + अधरम् = इत्यधरम्

(iv) सन्धिः - प्र + अञ्जलिम् = प्राञ्जलिम्

कु लीनाः + च = कुलीनाश्च

इंगितज्ञाः + च = इंगितज्ञाश्च

25. (i) समासः - सतां सन्निधानेन - सत्सन्निधानेन

काञ्चनस्य संसर्गाद् - काञ्चनसंसर्गाद्

(ii) समासः - सर्वं दमयति इति सर्वदमनः

कृतं नामधेयं यस्य सः कृतनामधेयः

उरसा निर्मितः औरसः

स्मितेन सहितम् सस्मितम्

(iii) समास-

ग्रामस्य उपान्ते = ग्रामोपान्ते

गावः च मेषाः च छागाः च = गोमेषच्छागाः

तटे संलग्नाः = तटसंलग्नाः

अपरसमि न भागे - अपरभागे

(iv) समासः - आदरेण सहितम् = सादरम्

युगस्य अन्ते = युगान्ते

द्रष्टुम् अशक्यम् = दुर्दर्शम्

आत्मना समाः = आत्मासमाः

26. (i) अन्वयः - काञ्चनसंसर्गाद् काचः मारकतीं

वृत्तिम् धत्ते तथा सत्सन्निधानेन मूर्खो प्रवीणताम्  
याति ।

27. (i) प्रत्यय- वि+ निस + चि + क्त्वा/ ल्यप्  
= विनिश्चत्यि

आ+ रुप्+ ल्यप् =आरोप्य

श्रु + क्तवतु = श्रुतवान्

(ii) अपत्य + तल् = अपत्यता

केसरिन् + डीष् = केसरिणी

भी + क्त = भीतः

प्रवीण + तल् = प्रवीणता

28. कारकोपपदविभक्तीनां शिक्षणात् प्राक्  
प्रत्येकोदाहरणानि तादृशमेव अनेकानि  
उदाहरणानि दातव्यानि येन छात्राः स्वयमेव  
निष्कर्षपर्यन्तं यान्तु। यथा- बालकः जनकेन सह  
आपणं गच्छति। सः मित्रेण सह आलपति। पुत्री  
माता सह क्रीडति इत्यादीनि।

(i) कारक - मुनिकुमारकैः सह तेनैव पथा उपागमत्

(ii) इमं पटं मह्यं देहि

(iii) भरतः रामाय उपहारम् यच्छति

(iv) मूर्खः प्रवीणतां याति

(v) अस्मिन् वाले मे मनः सिंहयति

(vi) ते/तुभ्यम् अपरं क्रीडनकम् दास्यामि ।

29. कर्तृक्रिया - अन्वितिः - त्वं वेतनं  
सम्प्राप्तकालं ददासि

पण्डितः अर्थकृच्छ्रेषु अपि महतीं श्रियं प्रापयेत्

त्वं कर्मसु नियोजयसि

30. अशु द्वि संशोधनम्- सः मित्रस्य सह गच्छति  
-मित्रेण सह गच्छति ।

गृहस्य उभयतः वृक्षौ स्तः - गृहम् उभयतः वृक्षौ स्तः  
।

सः बालकः ह्यः गमिष्यति - सः बालकः ह्यः  
अगच्छत ।

31. वाच्य परिवर्तन - रामः पाणिना परिजग्राह -  
रामेण पाणिना गृहीतम् ।

त्वं मन्त्रिणः कृतवान् – त्वया मन्त्रिणः कृताः ।  
अहम् तद् वाक्यम् कथि तवान् – मया तद्वाक्यम्  
उक्तम् ।

32. उपसर्ग – (i) उप + हार = उपहार

(ii) वि + स्मरति = विस्मरति

(iii) प्रति + आगच्छति = प्रत्यागच्छति

33. स्रोतः - अभिज्ञानशाकुन्तलम् –लेखकः  
महाकविः कालिदासः

34. मूल ग्रन्थ – (i) कुशल प्रशासनम् –  
रामायणम् – महर्षिभवाल्मी किः

(ii) सौवर्णो नकुलः – महाभारतम् – महर्षिः  
वेदव्यासः

35. ऋतुचर्या –चरकसंहिता- महर्षिः चरकः

शुकशावकोदन्तः - कादम्बरी – बाणभट्टः

36. (i) काव्यविधाः –गद्यकाव्यम् -  
दीर्घसमासानां प्रयोगः भवति ।

भेदः - कथा, आख्यायिका आदि

(ii) पद्यकाव्यम्- स्वर- लययुतं काव्यं पद्यकाव्यं  
भवति ।

भेदः - गीतिकाव्यम्, महाकाव्यम्

(iii) चम्पूकाव्यम् – गद्य-पद्य समन्वितं  
काव्यम्

37. नाट्यतत्वानि – नान्दी, भरतवाक्यम्,  
स्वगतम्, प्रकाशम्, जनान्तिकम् ।

शिक्षणशास्त्रीय-प्रक्रिया:अधिगम-प्रतिफलानि च

कक्षा – द्वादशी

शिक्षणशास्त्रीय-प्रक्रिया (Pedagogical Process)	अधिगम-प्रतिफलानि (Learning Outcomes)
<p>1. कक्षायाः वातावरणम् ईदृशम् स्यात् येन छात्राः शिक्षकाः च अधिकाधिकम् संस्कृत भाषायाः प्रयोगं कुर्वन्तु । अनेन विद्यार्थिनः एकादश्याम् कक्षायाम् ईदृक् स्तरम् प्राप्नुवन्ति येन ते सरलसंस्कृतवाक्यानाम् पठने लेखने च समर्थाः भवन्ति । यथा शिक्षणप्रक्रियायाम् आधिक्येन छात्राणां सहभगिता यथा स्यात्, तादृशं वातावरणं निर्मेयम् ।</p> <p>➤ शिक्षणक्रमे भाषायाः सर्वेषां कौशलानाम् (श्रवणम्, भाषणम्, पठनं लेखनञ्च) उपरि बलं दातव्यम् ।</p> <p>शिक्षणक्रमे शिक्षकः सरलसंस्कृतवाक्यैः प्रश्नान् पृच्छेत् । छात्रैः पृष्ठानां प्रश्नानां यथोचितम् उत्तरं दद्यात् । पाठावबोधनकालेऽपि अध्यापकः हिदीभाषया उत क्षेत्रीयभाषया सह सरलं संस्कृतं व्यवहरेत् ।</p> <p>➤ कक्षायामधिकाधिकं संस्कृतमयं वातावरणं कल्पनीयम् । तथा च सामान्य-व्यवहाराय अध्यापकः सततं सरलसंस्कृतवाक्यानां प्रयोगं कुर्यात्, एवञ्च छात्रान् अपि कारयेत् । यथा-सुप्रभातम् । शुभमध्याह्नम् । शुभ सन्ध्या । शुभरात्रिः । भवान् कथमस्ति? अद्य वयं पद्यपाठं पठामः । भवन्तः सन्नद्धाः खलु?</p> <p>➤ अध्यापकः छात्रैः अधिकाधिकप्रश्नान् संस्कृतेनैव पृच्छेत् तथा च संस्कृतेनैव उत्तरं दातुं छात्रान् प्रोत्साहयेत् ।</p> <p>2. संवादकौशलवर्धनाय समूहाभ्यासः तथा च वैयक्तिकाभ्यासः कारयेत् ।</p>	<p><b><u>Listening</u></b></p> <ol style="list-style-type: none"> <li>1. संस्कृतेन प्रदत्तान् निर्देशान् अवगम्य तदनुसारं कार्यम् करोति ।</li> <li>2. कक्षायां शिक्षकाणां संस्कृतेन दीयमानं वक्तव्यं श्रुत्वा प्रतिक्रियां ददाति ।</li> <li>3. रेडियो-दूरदर्शनादि कार्यक्रमेषु प्रस्तुतं संस्कृत कार्यक्रमान् श्रुत्वा अवगच्छति प्रतिक्रियां च यच्छति ।</li> </ol> <p><b><u>Speaking</u></b></p> <ol style="list-style-type: none"> <li>4. विद्यार्थी संस्कृतभाषया कक्षोपयोगीनि दैनन्दिन-जीवनोपयोगीनि वाक्यानि वदति ।</li> <li>5. औपचारिक प्रश्नानाम् उत्तरं प्रदाने समर्थः अस्ति ।</li> <li>6. कक्षायाम् प्रश्नान् पृच्छति ।</li> <li>7. उत्तराणि अवबुध्य संतोषम् प्रकटयति ।</li> <li>8. प्रश्न-आश्चर्य-उत्साह-दुःख-विनम्रताऽऽदीन् भावान् संस्कृतभाषया वदति लिखति च ।</li> <li>9. कमपि विषयमधि कृत्य संक्षेपेण भाषणम् करोति ।</li> <li>10. वाद-विवादं करोति ।</li> </ol> <p><b><u>Reading</u></b></p> <ol style="list-style-type: none"> <li>11. अपठितगद्यांशं पठित्वा तदाधारितप्रश्नानामुत्तरप्रदाने सक्षमः अस्ति ।</li> <li>12. गद्यांश-पद्यांश-नाट्यांशा धारितानां प्रश्नानाम् उत्तराणि संस्कृतेन वदति लिखति च ।</li> </ol>

3. संस्कृतस्य अधिकाधिकसामग्रीणां प्रयोगं कुर्यात्। यथा- अन्तर्जाले समुपलब्ध-दृश्य-श्रव्यसामग्र्यः, कक्षायाः भित्तौ संस्कृतस्य श्लोकवाक्यानि, कक्षायां संस्कृतपाठाधारि तानि फलकादीनि।

4. प्रसङ्गवशात् छात्रैः एतादृशान् प्रश्नान् पृच्छेयुः, येन ते चिन्तनस्य अवसरं प्राप्नुयुः तथा च कस्मिंश्चिद् निर्णयपर्यन्तं यान्तु। यथा- भवान् अस्यां परिस्थितौ यदि भविष्यति तर्हि किं निर्णयं स्वीकरिष्यति? पाठस्य नायकेन नायिकया वा यन्निर्णयं गृहीतं तद् भवतां दृष्टौ सम्यग् अस्ति अथवा नास्ति।

5. कथमस्ति भवान् ? वयम् कुशलिनः स्मः । अद्य किं पठनीयम् अस्ति ? अद्य वयम् पद्यपाठान् पठिष्यामः? धन्यवादः महोदय ! अस्माभिः सम्यकरूपेण पाठः अवबोधितः।

6. कृपया शब्दस्यास्य अर्थान् स्पष्टीकुर्वन्तु । एकवारम् पुनः बोधयन्तु । एवं संवादमाध्यमेन छात्राणाम् अभिव्यक्तिकौशल वर्धनस्य प्रयासः करणीयः।

7. धन्यवादः महोदय ! अस्माभिः सम्यकरूपेण पाठः अवबोधितः । आम् महोदय अस्माभिः पाठस्य भावः अवबुद्धः।

8. महोदय ! किं तदानीम् अपि उत्कोचम् प्रचलितम् आसीत् ?

9. कक्षायां कमपि विषय मधिकृत्य भाषणाभ्यासः कार्यः ।

10. पक्षे-प्रतिपक्षे च कथं स्व मन्तव्यं स्थापनीयम् इत्यस्यापि अभ्यासः कार्यः ।

11. शिक्षकैः समसामयिक विषयाणाम् उपरि कानिचन वाक्यानि लिखि त्वा तदाधारितानां प्रश्नानां अभ्यासः कार्यः येन छात्राः अपठितानुच्छेदानां भावग्रहणे समर्थाः स्युः, सममेव च उत्तरम् लिखितुं वक्तुं च पारयेयुः।

12. (i) शिक्षकः स्वयम् आदर्शोच्चारणं कुर्यात्, तथा भाषणे लेखने च व्याकरणनियमान् पालयेत्, छात्राणां

13. संस्कृत-नाट्यांशानां संवादानां उचितोच्चारणं करोति।

14. तेषां भावानुरूपं उचित आरोह-अवरोह पूर्ववकम् शारीरिकक्रियाकलापेन च सह संवादवाचनम् करोति।

15. तदाधारितानां प्रश्नानाम् उत्तराणि संस्कृतेन वदति लिखति च।

16. पाठ्यपुस्तकगतान् संस्कृतश्लोकान् छन्दोनुगुणम् उच्चारयति।

### Writing

17. संस्कृत-भाषया औपचारिक-अनौपचारिक-पत्रलेखनार्हः भवति।

18. प्रदत्त विषयोपरि अनुच्छेदं लिखति, संवाद-लेखनं च करोति।

19. छात्रः स्वतंत्रतया रचनात्मक लेखनकौशलम् कथामाध्यमेन प्रकटयति।

20. (i) पाठ्यपुस्तकगतान् गद्यपाठान् अवबुध्य तेषां सारांशं वदति लिखति च।

(ii) पाठ्यपुस्तकगतान् पद्यपाठान् अवबुध्य तेषां सारांशं वदति लिखति च।

(iii) पाठ्यपुस्तकगतान् नाट्यांशपाठान् अवबुध्य तेषां सारांशं वदति लिखति च।

21. तेषां भावार्थं प्रकटयति।

22. शब्दार्थं परं व्यंग्यार्थं च विशदीकर्तुं शक्नोति।

### Grammar

23. अंग्रेजी-हिंदी प्रांतीय भाषाभ्यः संस्कृतेन अनुवादं करोति संस्कृतात् च स्वभाषया अनुवादम् करोति।

24. गद्यांशे, पद्यांशे, नाट्यांशे च प्रयुक्तानाम् संधियुक्त पदानां विच्छेदम् करोति।

25. गद्यांशे, पद्यांशे, नाट्यांशे च प्रयुक्तानाम् समास-विग्रहं करोति।

तुटयः सहजं मत्वा शनैः शनैः सम्यक् कारयेत् ।  
यथा- संवृत्ते किञ्चिद्विन्धकारे भुशुण्डीं स्कन्धे निधाय  
निपुणं निरीक्षमाणः आगतं प्रत्यागतं च विद्यानः  
प्रतापदुर्गदौवारिकः कस्यापि पादक्षेपध्वनिमिवाश्रौषीत्  
। ततः स्थिरीभूय पुरतः पश्यन् सत्यपि दीपप्रकाशे  
कमपि अनवलोकयन् गम्भीरस्वरेणैवम् अवादीत् -  
कः, कोऽन्नयोः । कः कोऽन्न भोः इति ।

► बोधप्रश्नाः -

1. कः भुशुण्डीं निदधाति ?

2. दौवारिकः किम् अश्रौषीत् ?

(ii) गीतानां पाठनं सस्वरोच्चारणपूर्वकं कुर्यात् । तथा च  
कदाचित् व्यक्तिगतरूपेण कदाचिच्च  
समूहात्मकमनुवाचनं कारयेत् ।

स्वायत्तमेकान्तगुणं विधात्रा विनिर्मितं छादनमज्ञतायाः  
।

विशेषतः सर्वविदां समाजे विभूषणं मौनमपण्डितानाम्

► प्रश्न-उत्तर - मौनं केन विनिर्मितम् ?

अज्ञतायाः छादनं किम् ?

विभूषणं समाजे मौनं विभूषणम् ?

(iii) रामः -यस्याः शक्रसमो भर्ता मया पुत्रवती च या  
फले कस्मिन् स्पृहा तस्या येनाकार्यं करिष्यति ।

काञ्चकीयः - कुमार! अलमुपहृतासु स्त्री  
बुद्धिषु स्वमार्जवमुपनिक्षेप्तुम् ।

तस्याः एव खलु वचनात् भवदभिषेको निवृत्तः  
।

रामः - आर्य! गुणाः खलु अत्र ।

काञ्चकीयः - कथमिव ?

रामः -श्रूयताम् वनगमननिवृत्तिं  
पार्थिवस्यैतावन्ममपितृपरवत्ता बालभावः स  
एव ।

नव नृपति विमर्शं नास्ति शंका प्रजानामथ च न

26. श्लोकान्वयं करोति ।

27. गद्यांशे, पद्यांशे, नाट्यांशे च प्रयुक्तानाम्  
प्रकृति प्रत्यय विभागम् संयोगम् वा करोति ।  
पाठे प्रयुक्तानां कृदन्त-तद्धित-स्त्री-प्रत्ययान्  
अवगम्य समानान्तरं प्रयोगं करोति ।

28. पाठे प्रयुक्तानां कारक-विभक्ति-  
उपपदविभक्तीः प्रयोगं अवगम्य समानान्तरं  
प्रयोगं करोति ।

29. कर्तृक्रिया अनविति करोति ।

30. अशुद्धि-संशोधनं करोति ।

31. वाच्य-परिवर्तनं करोति ।

32. पाठे प्रयुक्तानां उपसर्गयुक्तपदानि वाक्येषु  
व्यवहरति ।

### History

33. नाट्यांशस्य स्रोतसः नाम वदति लिखति  
च ।

34. पाठानां लेखकस्य नाम जानाति वदति  
लिखति च ।

35. पाठ्यपुस्तके संकलितानां मूलग्रंथानां  
रचयितुः च नाम वदति लिखति च ।

36. गद्य-पद्य चम्पू इत्यादि काव्य विधानां  
परिचयम् प्राप्य तद् विषये लिखति ।

37. नाट्य तत्वानां विषये जानाति ।

परिभोगैर्वञ्चिता भ्रातरो मे ॥

➤ बोध प्रश्नाः -

कैकय्याः भर्ता कीदृशः ?

काञ्चकीयस्य मतानुसारं किं अलम् ?

कस्मिन् प्रजानां शंका नास्ति ?

13. नाटक-संवादादिपाठानां पाठनं यथासम्भवं प्रत्यक्षविधिना एव करणीयम् ।

14. भावानुसारं आरोहावरोहपूर्वकं वाचनम् करणीयम् यथास्थानम् शारीरिक क्रियाकलापानाम् अपि प्रदर्शनं करणीयम् । नाटक-संवादसमं पाठं

साभिनयं पाठनीयम् । एतदर्थमपि यत्नं विधेयं यत् नाटकादिषु पात्रानुसारम् अभिनयमपि स्यात् ।

15. पर्यायपदानि – स्वायत्तम् – स्वाधीन्

बुधाः— पण्डितः

अज्ञता – मूर्खता

16. गीतानां पाठनं सस्वरोच्चारणपूर्वकं कुर्यात् । तथा च कदाचित् व्यक्तिगतरूपेण कदाचिच्च समूहात्मकमनुवाचनं कारयेत् ।

17. विविधप्रकारकाणां पत्राणां (औपचारिकम् अनौपचारिकम् च) प्रारूपस्य, विषयवस्तुनः लेखनशैल्याः भावप्रकटनस्य च बोधम् कारयित्वा तेषाम् अभ्यासः कार्यः । प्रारंभे संपूर्णपत्रलेखनस्य अभ्यासः एव अपेक्षितः भवति ।

18. कक्षायाम् समासामयिक विषयणामुपरि चर्चा भवि तव्या । छात्राः स्वभाषासु अपि तस्मिन् विषये स्वविचारान् प्रकटयेयुः इति प्रयासः भवेत् पुनः तान् एव प्रकटित्वा तभावनाम् अनुवादाय प्रेरयेत् । तदनन्तरं तानि सम्मेल्य संक्षेपेण पंचवाक्यात्मकम् अनुच्छेदं लिखित्वा दर्शयेत् । यदा छात्राः आत्मनः मुख्यभूमिकायां पश्यन्ति ते सोत्साहं वाक्यनिर्माणस्य प्रयासं कुर्वन्ति ।

19. सामर्थ्यमिममवाप्तुं शिक्षकैः मध्ये-मध्ये कथाः



श्रावयित्वाः । अनेन संस्कृत-भाषा-परिचिति-सममेव कथाकथनस्य प्रकारः अपि ज्ञायते । प्रारंभे काश्चन कथाः कथयित्वा ताः स्वभाषया वक्तुं लेखितुं च निर्देशः प्रदातव्यः । ततः परं अपूर्णा कथां सम्मुखं स्थापयित्वा तां पूरयितुं निर्देशः प्रदातव्यः ।

20. (i) सारांशः - अस्मिन् गद्यांशे द्वारपालस्य निष्ठायाः विषये प्रकाशः प्रदत्तः । यस्य राज्ञः दौवारिकाः न्याय पूर्णे पथि चलन्ति कोऽपि शत्रुः तं पराजेतुं न शक्नोति इति आशयः ।

(ii) रामस्य मातुः स्नेहस्य उपरि अखण्डः विश्वासः, मातरम् प्रति तर्कातीता श्रद्धा, मातुः प्रत्येकस्मिन् कार्ये कल्याणस्य विश्वासः एव अस्य नाट्यांशस्य सारः ।

21. भावार्थः - विदुषां समाजे यदि अज्ञानिनः मौनं एव आश्रयन्ति तदेव वरं भवति यतः भाषणे कृते तेषां मूर्खता प्रकटि ता भवति ।

22. व्यंग्यार्थ- वैवस्वतो मनुर्नाम माननीयो मनीषिणाम् ।

मासीन्महीक्षितामाद्यः प्रणावश्छन्दसामिव ॥

हाँ यह स्पष्ट करना आवश्यक है कि जिस प्रकार छंदों में ओम् प्रमुख होता है उसी प्रकार राजाओं में मनु प्रमुख थे ।

23. व्याकरणनियमानां कण्ठस्थीकरणमकारयि त्वा अनेकोदाहरणमाध्यमेन बोधनीयं येन छात्राः स्वयमेव निर्णयपर्यन्तं गच्छेयुः, तादृशं वातावरणं कल्पनीयम् । सदैव गद्य-पद्य-नाटकादीनां पाठेषु समागतानामुदाहरणानाम् उल्लेखं कृत्वा तेषां ज्ञानं सम्पोषणीयम् ।

➤ अनुवादकौशलप्रदानाय कर्तृक्रिया अन्वितेः ज्ञानम् आवश्यकम् ।

- पुरुषवचनलकाराणां ज्ञानम् अपि प्रदातव्यम् ।
- लिगस्य ज्ञानम् अपि अपेक्षितम् ।
- कारकविभक्तेः, उपपदविभक्तेश्च ज्ञानम् आवश्यकम् ।

#### 24. सन्धिः -

कः +अत्र – कोऽत्र

सति +अपि – सत्यपि

सन्धिः - येन + अकार्यम् = येनाकार्यम्

खलु+ अत्र = खल्वत्र

तावत्+ मम = तावन्मम

सन्धिः - वसुधा + अधिपः = वसुधाधिपः

प्रयतेथाः + तथा = प्रयतेथास्तथा

#### 25. समासः - न जानाति इति अज्ञः, तस्य भावः

अज्ञता

र्वं विन्दति इति सर्वविदः तेषां सर्वविदाम् ।

वस्मिन् आयत्तम् स्वायत्तम् ।

समासः - शक्रेण समः = शक्रसमः

वनगमनात् निवृत्ति = वनगमननिवृत्ति

नृपतेः विमर्शः = नृपतिविमर्शः

समासः - वसुधायाः = अधिपः

क्षीरस्य निधिः = क्षीरनिधिः

#### 26. अन्वयः - स्वायत्तम् एकांतगुणं, अज्ञतायाः छादनं

विशेषतः सर्वविदां समाजे अपण्डितानां विभूषणं मौनं विधात्रा विनिर्मितम् ।

#### 27. प्रत्यय -

सम् + वृञ् +क्त – संवृत्ते

निर् + ईक्ष् +शान्य् – निरीक्षमाणः

आ + गम् +क्त – आगतः

दृश् + शत्+क्त – दृष्टः

अव +लोकृ +शत् – अवलोकयन्

वच् + तव्यत् = वक्तव्यम्

परि+ लाण्+ तव्यत् =परिन्नातव्यः

28. कारकोपपदविभक्तीनां शिक्षणात् प्राक् प्रत्येकोदाहरणानि तादृशमेव अनेकानि उदाहरणानि दातव्यानि येन छात्राः स्वयमेव निष्कर्षपर्यन्तं यान्तु। यथा- बालकः जनकेन सह आपणं गच्छति। सः मित्रेण सह आलपति। पुत्री माता सह क्रीडति इत्यादीनि।

मुनिकुमारकैः सह तेनैव पथा उपागमत्  
इमं पटं मह्यं देहि

भरतः रामाय उपहारम् यच्छति

29. . कर्तृक्रिया – दिलीपः - तदन्वये प्रसूतः

त्वं कर्मसु नियोजयसि

30. अशु द्वि संशोधनम्- सः मित्रस्य सह गच्छति – मित्रेण सह गच्छति ।

गृहस्य उभयतः वृक्षौ स्तः - गृहम् उभयतः वृक्षौ स्तः ।

सः बालकः ह्यः गमिष्यति – सः बालकः ह्यः अगच्छत ।

31. वाच्य परिवर्तन – रामः पाणिना परिजग्राह – रामेण पाणिना गृहीतम् ।

त्वं मन्त्रिणः कृतवान् – त्वया मन्त्रिणः कृताः ।

अहम् तद् वाक्यम् कथि तवान् – मया तद्वाक्यम् उक्तम् ।

32. उपसर्ग – उप + हार = उपहार

वि + स्मरति = विस्मरति

प्रति + आगच्छति = प्रत्यागच्छति

33. स्रोतः - प्रतिमानाटक – महाकविः भासः

34. मूल ग्रन्थ – अनुशासनम्– तैत्तिरीय उपनिषद्

नत्वं शोचितुमर्हसि– बुद्धचरितम् – अश्वघोषः

मातुराज्ञा गरीयसी –प्रतिमानाटक- भासः

<p>प्राजानुरंजको नृपः- रघुवंशम्— कालिदासः  दौवारिकस्य निष्ठा — शिवराजविजय —  अम्बिकादत्ताव्यासः  35. नैकेनापि समं गता वसुमती— भोजप्रबन्धः -  बल्लालसेन  हल्दीघाटी —प्रतापविजय - ईशदत्तशास्त्री  मदालसा — पुरन्ध्रीपंचकम् — वेदकुमारी घई  प्रतीक्षा — रमाकान्त रथ  कार्यकार्य व्यवस्थिति - श्रीमद्भगवद्गीता  विद्यास्थानानि — काव्यमीमांसा — राजशेखरः  36. काव्यविधाः — गद्यकाव्यम् - दीर्घसमासानां  प्रयोगः भवति ।  भेदः - कथा, आख्यायिका आदि  पद्यकाव्यम्- स्वर- लययुतं काव्यं पद्यकाव्यं भवति  ।  भेदः - गीतिकाव्यम्, महाकाव्यम्  चम्पूकाव्यम् — गद्य-पद्य समन्वितं काव्यम्  37. नाट्यतत्त्वानि — नान्दी, भरतवाक्यम्, स्वगतम्,  प्रकाशम्, जनान्तिकम्</p>	
--	--

### समावेशीशिक्षणव्यवस्थायाः कृते कानिचन मार्गदर्शकतत्त्वानि -

उपरि लिखितानि शिक्षणप्रतिफलानि समावेशीसंस्कृतशिक्षणाय एव सन्ति, परं कक्षासु एतादृशाः अपि अन्यथा सक्षमाः छात्राः भवन्ति येषाम् आवश्यकता विशिष्टा भवति। तेषाम् आवश्यकता प्रपूर्तये तादृशाः कक्षाप्रविधयः क्रियाकलापाश्च निर्मातव्याः यैः ते पाठ्यांशान् अवगन्तुं समर्थाः भवन्तु। शिक्षकः छात्राणां व्यक्तिगत-आवश्यकतानुसारं शिक्षणप्रविधिषु परिवर्तनं कुर्यात्। यद्यपि कक्षासु सर्वेषां छात्राणां कृते समानपाठ्यचर्या भवति, सर्वेषु गतिविधिषु छात्राणां प्रतिभागिता चापि भवति, तथापि विशिष्टावश्यकतावतां छात्राणां कृते पाठ्यचर्यायां परिवर्तनस्य बहुधा अपेक्षा भवति-

- अध्यापकैः पत्रादीनां (पत्रम्, आवेदनपत्रम्) लेखनस्य प्रारूपं मौखिकरूपेण बोधनीयम्।

- शिक्षकः आदर्शवाचनं कुर्यात् छात्राश्च अनुकरणवाचनं कुर्युः ।
- अध्यापकः कक्षायां वार्तालापमाध्यमेन सम्प्रेषणकौशलं वर्धयितुं शक्यात् ।
- नवशब्दानुक्रमणिकानां सार्थं ज्ञानं ब्रेललिपि-शैल्यां देयम् ।
- प्रतिदिनं मौखिकम् अर्थपूर्णञ्च भाषिकगतिविधीनाम् अभ्यासः भवेत् ।
- शब्दानां मौखिकरूपेण विस्तृतं वर्णनं स्यात् । यथा — निमेषः, विशालः, समुद्रः, लघुजीवजन्तवः, कीटपतङ्गाश्च इत्यादयः ।
- प्रश्नानां निर्माणं कर्तव्यम्, तथा च तेषाम् उत्तरप्रदानाय छात्राः प्रोत्साहनीयाः पुनः छात्राः प्रश्ननिर्माणार्थं प्रेरणीयाः, तथा च तेषां प्रश्नानाम् उत्तरं स्वयमेवान्वेषणार्थं वक्तव्यः ।
- उच्चारणसंशोधनार्थं कथादीनां श्रवणस्य प्रकल्प आचरणीयः । विविधानां ध्वनीनां संग्रहणं कर्तव्यम् । यथा — जलतरङ्गः, जलप्रपातः, नदीप्रवाहः, वायुध्वनिः, झञ्झावातः, पशुपक्षिणां कलरवम्, विभिन्नयानानां ध्वनिः इत्यादयः । अनेन माध्यमेन तेषां सङ्कल्पना-धारणा-विचारादीनाम् अवबोधो वर्धनीयः ।
- परस्परं वार्तालापार्थं छात्राः प्रेरणीयाः ।
- नाटकादिषु साभिनयप्रयोगः स्यात् ।
- पाठ्यविषये दृश्यशब्दकोशस्य फलकप्रारूपं निर्मेयम् । (फलके चित्रमाध्यमेन शब्दान् दर्शयेत् ।)
- फलके (Chalk Board) नवीनशब्दानां लेखनं यदि शक्यते तर्हि शब्दकोशगतशब्दानां प्रयोगः चित्रमाध्यमेन स्यात् ।
- सामान्यव्यवहारे नवीनशब्दानां प्रयोगः कथं स्यात्? इति बोधनीयम्, तथा च विविधप्रसङ्गेषु तेषां प्रयोगोऽपि कर्तव्यः ।
- शीर्षकेण विवरणेन च सहैव दृश्यात्मकविधिना कक्षायां शब्दाः प्रयोक्तव्याः ।
- सारांशार्थं सोदाहरणं पादटिप्पणी (Footnote) लेखनीया ।

- सारांशलेखने सहायतार्थं संवादस्य विविधोपकरणानां प्रयोगः स्यात्। यथा — चित्राणि, विविधसङ्केताः, स्पष्टवस्तूनि विविधसाधनानि च।
- लिखितसामग्रः लघु-लघुवाक्यैः सरलवाक्यैश्च विखण्ड्य संक्षिप्य च लेखनं व्यवस्थापनीयम्।
- विद्यार्थिषु तादृशं सामर्थ्यं वर्धनीयं येन छात्राः प्रत्येकदिवसस्य नैजां क्रियां सामान्यतयैव वार्तालापरूपेण, पत्रिकारूपेण वा टिप्पणीपुस्तिकायां लिखेयुः।
- वाक्याधारिताः अभ्यासाः पुनः-पुनः देयाः येन छात्राः शब्दप्रयोगं वाक्यप्रयोगञ्च साधुतया कर्तुं समर्थाः स्युः। एतदर्थं विविधचित्रैः, समाचारैः, समकालीनघटनाभिश्च उदाहरणानि प्रस्तोतव्यानि।
- छात्रस्तरानुगुणं तेभ्यः पाठ्यसामग्रः संसाधनानि च दातव्यानि।
- पाठे समागतानां प्रधानशब्दानामाश्रयणं कृत्वा अनुभवान् संकेतमाध्यमेन बोधयेत्।
- वर्णसङ्केतस्य (Colour Coding) सङ्कल्पनायाश्च (Concept Map) प्रयोगः करणीयः। यथा — स्वरव्यञ्जनबोधनाय पृथक्-पृथक् वर्णयोः प्रयोगः।
- प्रस्तुतीकरणार्थं विविधोपायानां शैलीनाञ्च प्रयोगः स्यात्। यथा — दृश्यम्, श्रव्यम्, प्रायोगिकशिक्षणम् इत्यादयः।
- अनुच्छेदानां सरलीकरणार्थं तत्र सन्धिविच्छेदादिकं कृत्वा सरलता विधेया।
- पाठ्यसामग्रः अधिकाः आकर्षिकाः स्युः। एतदर्थं विविधविचारैः, नूतनशब्दानां प्रयोगैः, काष्ठपुत्तलिकाप्रयोगैः, वास्तविकजीवनानुभवैः, कथाप्रस्तुतीकरणद्वारा, प्राकृतवस्तुभिः पूरणसामग्रीभिश्च पाठ्यसामग्रः युक्ताः भवन्तु।
- सम्यग् अवगमनाय आवश्यकमस्ति यत् विषयसम्बन्धिपृष्ठभूमिविषये सूचना प्रदेया।
- कवितानाम् अध्यापनं गायनं कृत्वा साभिनयं करणीयम्।
- विविधवर्गार्थम् पाठ्यांशात् आदर्शप्रश्नाः भवेयुः। यथा- परिचयभागतः, मूल्यानतः इत्यादयः।

- पाठ्यवस्तुनः सम्यग्बोधनाय द्वयोः-द्वयोः छात्रयोः समूहनिर्माणं कृत्वा प्रस्तुतीकरणं स्यात् ।
- कठिनशब्दानाम् अवगमनाय सकाशे एव तेषाम् अर्थः पर्यायवाचिशब्दो वा लेखनीयः । आवश्यकं स्यात् चेत् सारांशस्यापि रेखाङ्कनं करणीयम् ।

DRAFT

## सन्दर्भसूचि:

- व्याकरणवीथीं
- व्याकरणसौरभम्
- वेदपारिजात
- सूक्तिसौरभम्, तृतीयपुष्पम्
- संस्कृत साहित्य - परिचय
- संस्कृत वाङ्मय में विज्ञान का इतिहास
- अलंकाराः (वीडियो सामग्री)
- छंदोविलासः (वीडियो सामग्री)



**اعلیٰ ثانوی سطح کے لیے اردو زبان کے آموزشی ماحصل  
(Learning Outcomes for the Urdu Language at Higher  
Secondary Stage)**

**تعارف**

زبان نہ صرف اظہار خیال کا ذریعہ ہے بلکہ اس کے لیے بیش تر علم کا حصول بھی ہوتا ہے۔ یہ ایک ایسا نظام ہے جو بڑی حد تک ہمارے ارد گرد حقیقت کو تشکیل دیتا ہے۔ زبان کے حصول میں سائنسی تفتیش جیسے ڈاٹا کا مشاہدہ، ترتیب سازی اور درجہ بندی، مفروضے قائم کرنا اور اس کی تصدیق کرنا وغیرہ شامل ہوتے ہیں۔

زبان کے متعدد اعمال ہوتے ہیں اس میں دنیا کا مشاہدہ کرنے کی خصوصیت کے علاوہ مختلف افسانوی عناصر شامل ہیں۔ شاعری، نثر اور ڈراما نہ صرف ہمارے ادبی شعور کو خالص بنانے کے مؤثر ذرائع ہیں بلکہ ان سے ہماری جمالیاتی زندگی اور صلاحیت کو تقویت ملتی ہے اور لسانی صلاحیت میں مسلسل اضافہ ہوتا رہتا ہے، خصوصاً پڑھنے کا فہم اور لکھنے کا جذبہ پیدا ہوتا ہے۔ ادب میں لطیفے، طنز، خواب و خیال کی باتیں، کہانی، پیروڈی اور تمثیل وغیرہ شامل ہوتی ہیں جن کا اظہار ہم روزمرہ کی گفتگو میں کرتے ہیں۔

تعلیم کی اس منزل پر قدم رکھنے سے پہلے طلبا دسویں جماعت تک اردو زبان و ادب کا مطالعہ کر چکے ہیں۔ امید کی جاتی ہے کہ ان میں سننے، بولنے، پڑھنے اور لکھنے کی صلاحیتوں کی خاطر خواہ نشو و نما ہو چکی ہوگی۔ وہ اپنے سماجی اور کاروباری کاموں کے لیے حسب ضرورت زبان کا استعمال کرنے کا شعور بھی حاصل کر چکے ہوں گے۔ وہ پچھلی جماعتوں میں چوں کہ اردو ادب کا مطالعہ بھی کر چکے ہیں۔ اس لیے گیارہویں اور بارہویں جماعتوں میں نسبتاً بہتر لسانی اور ادبی قابلیت پیدا کرنا اس تعلیمی نصاب کا بنیادی مقصد ہوگا۔ اس تعلیمی نصاب کے ذریعے طلبا میں ترسیل و ابلاغ، ادب شناسی، تبادلہ خیال، پڑھنے، لکھنے اور مطالعے کی صلاحیتوں میں اضافہ کرنا ہوگا اور زندگی اور اس کے مختلف معاملات کے متعلق انسانی، علمی اور اخلاقی اقدار کو بھی فروغ دینا ہوگا۔ بارہویں جماعت کے بعد طلبا اسکول کے محفوظ ماحول کو چھوڑ کر ایک ایسی دنیا میں داخل ہوتے ہیں جہاں آزادی کے ساتھ ساتھ ذمہ داریاں بھی

وابستہ ہوتی ہیں۔ لہذا دو سال کی اعلیٰ ثانوی سطح زندگی کا سامنا کرنے اور فیصلہ لینے کے لیے ان کی تیاری کا مرحلہ ہوتا ہے۔ تدریسیاتی عمل اور آموزشی ماحصل اسی بات کو تیار رکھتے ہوئے تیار کیے گئے ہیں۔ مجوزہ آموزشی ماحصل اور تدریسیاتی عمل طلبا کو آزاد آموزگار کی حیثیت سے اس کے لیے تیار کرتے ہیں۔ اساتذہ اپنی ضروریات، سیاق اور موجود وسائل کے مطابق تجویز کردہ تدریسیاتی عمل کو تبدیل کرسکتے ہیں، اس میں اضافہ کرسکتے ہیں۔

### **نصابی توقعات (Curricular Expectations)**

- 1- بہتر لسانی اور ادبی قابلیت پیدا کرنا
- 2- ترسیل و ابلاغ کا شعور پیدا کرنا
- 3- موثر اظہار کی صلاحیت کو فروغ دینا
- 4- شعری اور نثری متن پڑھنے کی مشق
- 5- ادب کی تحسین و تفہیم کا شعور پیدا کرنا
- 6- تخلیقی ساخت کا تجزیہ (لفظ کی ترتیب، جملے کی ساخت، مصرعے کی ساخت)
- 7- عام اظہار اور ادبی اظہار کے فرق کو بتانا
- 8- لطف و انبساط حاصل کرنا
- 9- قوت احساس بیدار کرنا
- 10- تخیل کی قوت کو فروغ دینا
- 11- تخلیقی صلاحیت بیدار کرنا
- 12- اخلاقی قدروں کا احساس بیدار کرنا
- 14- خود اعتمادی کے جذبے کو فروغ دینا

## گیارہویں جماعت (Class XI)

آموزشی ماحصل (Learning Outcomes)	مجوزہ تدریسی عمل (Suggested Pedagogical Processes)
<ul style="list-style-type: none"> <li>• تقریروں، لیکچروں اور ریڈیائی تقریروں وغیرہ کو سنتے ہیں اور اپنی تقریر و تحریر میں اس کا اظہار کرتے ہیں۔</li> <li>• سماجی اور علمی امور پر موثر انداز میں گفتگو کرتے ہیں</li> <li>• بولنے والے کے جذبات اور خیالات کو سمجھ کر اپنی رائے قائم کر سکتے ہیں</li> <li>• کسی نکتے کی وضاحت کے لیے دلائل پیش کرتے ہیں اور مثالیں پیش کرتے ہیں۔</li> <li>• مختلف ادبی اصناف پڑھ کر اپنے جذبات، خیالات، تجربات اور اپنی رائے کا تحریری اظہار کر سکتے ہیں</li> <li>• بول چال اور ادبی زبان کا فرق سمجھتے ہیں۔</li> <li>• الفاظ اور اظہار کے مختلف اسالیب کا برمحل استعمال کرتے ہیں۔</li> <li>• رموز اوقاف، موزوں لب و لہجہ کے ساتھ متن کی قرات کرتے ہیں۔</li> <li>• گھر یا پڑوس کے عمر رسیدہ افراد کو خبریں، حالاتِ حاضرہ پر تبصرہ وغیرہ پڑھ کر سناتے ہیں اور ان موضوعات پر گفتگو کرتے ہیں۔</li> <li>• سیاق و سباق کے بغیر قواعد کے اصولوں کی وضاحت کرتے ہیں۔</li> <li>• اردو اور دوسری زبانوں میں موجود فطرت کے مناظر، موسموں، مختلف پیشوں، حب الوطنی وغیرہ پر گیت، نظموں کو جمع کرتے ہیں اور انہیں ترتیب دیتے ہیں۔</li> <li>• روانی اور بے ساختگی کے ساتھ اپنی رائے ظاہر کرتے ہیں۔</li> <li>• آن لائن پلیٹ فارم پر موجود کسی</li> </ul>	<ul style="list-style-type: none"> <li>• سماجی، علمی اور ادبی امور پر روانی کے ساتھ اور بے ساختگی سے اپنی رائے ظاہر کرنے کے لیے کہا جائے۔ انہیں یہ ہدایت دی جائے کہ اپنی آرا میں دلچسپ اور ضرورت کے مطابق کثیر لسانی الفاظ کا استعمال کریں۔</li> <li>• طویل اقتباسات دیے جائیں اور طلبا سے سیاق و سباق، صوتیاتی اشاروں وغیرہ کی مدد سے اندازہ لگا کر ان کی تشریح کرنے کے لیے کہا جا سکتا ہے۔</li> <li>• مشہور و معروف ادبی شخصیات کو اسکول میں بلا کر طلبا کے ساتھ ان کی بات چیت کے مواقع فراہم کرائے جائیں۔</li> <li>• طلبا میں خیال و اسلوب کی شناخت اور موازنے کی صلاحیت پیدا کرنے کے لیے دوسرے ادیبوں اور شاعروں کے فن کو پڑھنے کے مواقع فراہم کرائے جائیں۔</li> <li>• زراعت، عوامی فنون، دست کاریوں کے بارے میں گفتگو کرنے کے مواقع فراہم کیے جائیں اور ان سے متعلق مخصوص لفظیات کو جاننے اور اپنی تقریر اور تحریر میں ان کے استعمال کرنے کی تربیت دی جائے۔</li> <li>• مضامین، ادارے، کہانیوں وغیرہ کا دوسری زبانوں میں اور دوسری زبانوں کے مضامین، ادارے اور کہانیوں وغیرہ کا اردو میں ترجمہ کرنے کی سرگرمیاں کروائی جاسکتی ہیں۔</li> </ul>

<p>موضوع کی حمایت اور مخالفت میں دیے گئے بیانات کو غور سے سنتے/پڑھتے ہیں اور منطقی دلائل کے ساتھ اپنی رائے زبانی/تحریری طور پر پیش کرتے ہیں۔</p> <ul style="list-style-type: none"> <li>• مضمون کی مخصوص اصطلاحات کا استعمال کرتے ہوئے اپنی زبان میں مضمون تحریر کرتے ہیں۔</li> <li>• سماعت سے محروم اپنے ہم جماعت کے ساتھ گفتگو میں علامتی زبان کا استعمال کرتے ہیں۔</li> </ul>	
--	--

<b>بارہویں جماعت (class XII)</b>	
<b>آموزشی ماحصل (Learning Outcomes)</b>	<b>مجوزہ تدریسی عمل (Suggested Pedagogical Processes)</b>
<ul style="list-style-type: none"> <li>• سنی اور پڑھی ہوئی عبارتوں کا خلاصہ لکھ سکتے ہیں اور اشعار کی تشریح کر سکتے ہیں۔</li> <li>• غیر نصابی نثر کا خلاصہ لکھ سکتے ہیں۔</li> <li>• اقتباسات نظم و نثر میں مضمر جذبات و خیالات کو سمجھ کر اہم نکات کا انتخاب کرتے ہیں اور ان کی اہمیت کے پیش نظر ان کو مرتب کرتے ہیں</li> <li>• زبانی اور تحریری طور پر ادب پارے کی لسانی اور ادبی خصوصیات بیان کرتے ہیں۔</li> <li>• لڑکیوں کی تعلیم/تعلیم نسواں ، صحت، امن و انصاف وغیرہ موضوعات پر مختصر ڈرامے تحریر کرتے ہیں اور انہیں اسٹیج کرتے ہیں۔</li> <li>• مختلف موضوعات جیسے صحت، بینک، پوسٹ آفس وغیرہ کے بارے میں بیداری پیدا کرنے کی خاطر والدین، بزرگوں اور معاشرے کے لوگوں کے ساتھ منطقی اور دلائل کے ساتھ گفتگو کرتے ہیں۔</li> <li>• حقائق و واقعات جمع کرنے ، انہیں منظم</li> </ul>	<ul style="list-style-type: none"> <li>• ادبی اور تعلیمی موضوعات پر بنائی گئیں ڈاکیو منٹری اور فلمیں طلبا کو دکھائی جائیں اور ان پر گفتگو کرنے کے مواقع فراہم کیے جائیں جیسے موضوعات کی پیش کش، کردار نگاری، مکالمہ نگاری وغیرہ۔</li> <li>• انٹرنیٹ کے ذریعے اردو میں درسی مواد تک رسائی حاصل کرنے میں طلبا کی رہنمائی کی۔ انہیں یہ مواقع فراہم کرائے جائیں کہ وہ آن لائن پلیٹ فارم کے استعمال کے مختلف طریقوں سے واقف ہوں جیسے آڈیو، ویڈیو، اسکائپ، پاور پوائنٹ پیش کش ، گوگل فارم وغیرہ۔</li> <li>• طلبا کو درسی اور غیر درسی مواد کو فراہم کروایا جائے جیسے نظمیں ، کہانیاں، مضامین، رپورٹیں وغیرہ جنہیں پڑھ کر ان کے تئیں حساس اور بیدار ہوسکیں اور اپنے خیالات اور رد عمل کا اظہار تقریری اور تحریری طور پر کر سکیں۔</li> <li>• طلبا کو ایسے مواقع فراہم کروائے</li> </ul>

کرنے اور تجزیہ کرنے کی مہارتوں کا استعمال کرتے ہوئے زبان و ادب کے کسی موضوع پر پروجیکٹ کا کام انجام دیتے ہیں۔

- مطالعے کی مہارت کا استعمال کرتے ہوئے سوالات اور ان کے جوابات تیار کرتے ہیں جیسے نوٹس لکھنا، خلاصہ لکھنا وغیرہ۔
- تخیل اور تخیلات پر مبنی نظمیں، تحریریں وغیرہ جمع کرتے ہیں اور ان پر نوٹ درج کرتے ہیں۔
- مختلف امور، لوگوں یا ماحول کے بارے میں حساسیت بیدار کرنے والے فقرے، جملے، محاورے وغیرہ کو جمع کرتے ہیں اور ان کا استعمال اپنی نثری اور شعری تخلیق میں کرتے ہیں۔

جائیں کہ وہ حیاتیاتی توازن (Ecological balance) کو تنقیدی زاویہ نگاہ سے دیکھیں اور اس پر اپنے رد عمل کا اظہار کریں، ساتھ ہی ماحول میں موجود خوب صورتی کی تحسین بھی کرسکیں۔ اس کے علاوہ موضوع سے متعلق ذخیرہ الفاظ کو استعمال ماحولیات کے سیاق و سباق میں کرنے سے متعلق سرگرمیاں کروائی جائیں جیسے پروجیکٹ وغیرہ۔

### شمولیتی نظام میں مجوزہ تدریسی عمل

کلاس روم میں نصاب ہر ایک کے لیے ہے۔ اس کا مطلب یہ ہے کہ تمام طالب علم کلاس روم میں فعال طور پر حصہ لے سکتے ہیں۔ وہاں کچھ ایسے طالب علم ہوسکتے ہیں جنہیں زبان، بصری مقامی (Visual-spatial) یا مخلوط پروسیسنگ سے متعلق سیکھنے میں مشکلات ہوسکتی ہیں۔ انہیں نصاب میں اضافی تدریس کی مدد اور کچھ موافقت کی ضرورت ہوسکتی ہے۔ خصوصی ضرورتوں والے بچوں کی مخصوص ضروریات پر غور کر کے اساتذہ کے لیے کچھ مجوزہ تدریسی طریقہ کار ذیل میں دیے جارہے ہیں۔

### بینائی سے محروم بچوں کے لیے

- خطوط نویسی، درخواست وغیرہ کے فارمیٹ کا زبانی تعارف کرایا جاسکتا ہے۔
- طلبا کی مثالی بلند خوانی کے لیے حوصلہ افزائی کی جائے۔ استاد کی مدد سے کلاس روم میں زیادہ سے زیادہ تعامل سے بات چیت گفتگو کی مہارت میں بہتری آئے گی۔
- نئے الفاظ کو بریل میں معنی کے ساتھ لکھا جانا چاہیے۔
- روزانہ کی سرگرمیوں کی مدد سے زبانی مشق کرائی جائے۔
- سوالات بنانے اور بچوں کو اس کا جواب دینے کے لیے آمادہ کیا جائے۔ بچوں سے خود سوال تیار کرنے اور جواب تلاش کرنے کے لیے کہا جائے۔

- تلفظ کو بہتر بنانے کے لیے ٹیپ اور کہانی سنوائی جائے۔ آڈیو ریکارڈنگ کے ذریعے تبصرے سنوائے جائیں۔
- تمام طلبا کی ایک دوسرے سے بات چیت کرنے کی حوصلہ افزائی کی جائے۔
- اداکاری، ڈرامہ اور رول پلے کروائے جائیں۔

### سماعت سے محروم بچوں کے لیے

- پڑھائے گئے موضوع پر ذخیرہ الفاظ کی بصری شیٹ (تصویروں کے ساتھ الفاظ) تیار کرائی جائے۔
- بورڈ پر نئے الفاظ لکھیں۔ اگر دست یاب ہو تو لغت کا استعمال کریں جس میں با تصویر لفظ ہوں۔
- طلبا کی روز مرہ زندگی سے نئے الفاظ کو مربوط کیا جائے اور مختلف سیاق میں اسے دہرایا جائے۔
- کلاس روم میں دکھائی جانے والی اشیا کے اہم نکات کو وضاحت کے ساتھ پیش کیا جائے۔
- تفہیم کے لیے حاشیوں میں مثالوں کا استعمال کرایا جائے۔
- سمجھنے میں مدد کے لیے ترسیل کے مختلف ذرائع (لفظی اور غیر لفظی گرافک کارٹون، اسپیج بیلون، تصاویر، علامات، ٹھوس اشیا اور مثالیں) کا استعمال کیا جائے۔
- جملوں کو توڑ کر مختصر کیا جائے اور متن کو مختصر کر کے دوبارہ لکھا جائے۔
- بچوں کو روز مرہ کی زندگی سے متعلق موضوعات پر روزنامچے، مکالمے، ڈائری وغیرہ جیسی آسان شکلوں میں لکھنے کے لیے کہا جائے۔
- جملے بنوانے کی بار بار مشق کرائی جائے تاکہ بچے جملوں اور محاوروں کا صحیح استعمال سیکھ سکیں۔ تصاویر، خبروں، حالات حاضرہ، اسکرپ بک وغیرہ سے مثالیں دی جائیں۔
- پڑھنے کی مہارت کو فروغ دینے کے لیے بچہ کے معیار کے مطابق ضروری مواد اور وسائل مہیا کرائے جائیں۔
- کلر کوڈنگ (مصوتی اور مصمتی حروف کے لیے الگ الگ رنگ) اور کنسپیٹ میپ کا استعمال کیا جائے۔

### وقوفی اور ذہنی اعتبار سے معذور بچوں کے لیے

- پیش کش کے مختلف انداز اور طریقے (حسی، حرکی، سمعی، بصری وغیرہ) استعمال کرائے جائیں۔

- شعری اور نثری اقتباسات کی تشریح/وضاحت آسان لفظوں میں کی جائے۔
- کارڈ، کٹھ پتلیوں، اصل زندگی کے تجربات، ڈرامہ، اداکاری، کہانیوں، حقیقی اشیا اور امدادی اشیا کے ذریعے نظریات اور نئے الفاظ کی وضاحت کی جائے اور مواد کو جاذب بنایا جائے۔
- بہتر سمجھ کے لیے تصورات سے متعلق پس منظر کی معلومات فراہم کی جائیں۔
- قرأت کے دوران نظم کو اداکاری کے ذریعہ پیش کیا جائے اور مختلف حرکات و سکنات کے ساتھ اس کی بلند خوانی کی جائے۔
- سبق کے مختلف حصوں جیسے تعارف، مواد، اندازہ قدر وغیرہ سے متعلق سوالات بنوائے جائیں۔
- پڑھنے میں روانی کو فروغ دینے کے لیے دو بچوں کو ساتھ ساتھ جوڑیوں میں پڑھنے کے لیے کہا جائے۔
- مشکل لفظوں کے معنی اور مترادفات لکھوائے جائیں۔ معنی اور مترادف لفظوں کو بریکٹ میں دیا جائے اور انہیں نمایاں کیا جائے۔

### آموزشی ماحصل کے استعمال کے لیے مشورے:

- درس و تدریس کے دوران اساتذہ اور بچوں کو آموزش میں مدد کرنے اور آسانیاں فراہم کرنے کے لیے گیارہویں اور بارہویں جماعتوں کے لیے نصابی توقعات، تدریسی مراحل اور آموزشی ماحصل تیار کیے گئے ہیں۔ انہیں استعمال کرنے کے لیے ذیل میں چند مشورے دیے گئے ہیں۔
- مجوزہ تدریسی عمل اور آموزشی ماحصل کو جدول میں پیش کیا جائے۔
- پہلے کالم یعنی دائیں طرف مجوزہ تدریسی عمل اور دوسرے کالم یعنی بائیں طرف آموزشی ماحصل کو درج کیا گیا ہے۔ جس میں طلبا کی سیکھنے کی سرگرمیوں کو ملحوظ رکھا گیا ہے۔
- پہلے اردو زبان کی تدریس کے مقاصد کے پیش نظر قومی درسیات کا خاکہ۔ 2005 کے مطابق نصابی توقعات کو درج کیا گیا ہے۔ ان نصابی توقعات کو طلبا تبھی حاصل کرسکتے ہیں جب آموزش کے طریقے اور جماعت/ اسکول کے ماحول میں مطابقت ہو۔
- یہ آموزشی ماحصل درس و تدریس کے دوران اندازہ قدر میں بھی آپ مدد کریں گے۔ کیوں کہ درس و تدریس کے دوران فیڈ بیک بھی ملتا ہے۔
- آموزشی ماحصل کو اچھی طرح سمجھنے کے لیے درسیاتی خاکہ اور نصاب کو بھی اچھی طرح سمجھنا چاہیے۔
- آموزشی ماحصل بچوں کی قابلیت، مہارت، تصور اور ان کی ذاتی معاشرتی اقدار سے تعلق رکھتے ہیں۔

- شمولیتی کلاس کو نظر میں رکھتے ہوئے نصابی توقعات دیکھنے کے طریقے اور ماحول، نیز آموزشی ماحصل میں سبھی طرح کے بچوں کو اہمیت دی گئی ہے۔

DRAFT



**LEARNING OUTCOMES FOR THE  
MATHEMATICS  
HIGHER SECONDARY STAGE**

**Introduction**

The higher secondary stage is the launching pad from which the student is guided towards career choices, whether they imply university education or otherwise. By this time, the student's interests and aptitude have been largely determined, and mathematics education in these two years can help in sharpening her abilities. They are expected to undertake work which will enable them to extend and deepen their mathematical knowledge and understanding. Higher secondary students are increasingly expected to engage in mathematical practices to help develop mathematical habits of their minds.

At this stage students can gain good mathematical insight by studying some topics like sets, relations, logic, sequences and series, linear inequalities, combinatorics etc. Students should be able to become competent to critically analyse various processes and to create newer algorithms.

This document lays emphasis on the learning outcomes in terms of competencies and skills that every child is expected to acquire in Classes XI and XII. The classroom interaction therefore, must provide opportunities to students to achieve learning outcomes in Mathematics and other subject areas. This section deals with the overall vision of Mathematics, expectations of the mathematics curriculum, variety of suggested pedagogic processes along with the learning outcomes. The suggested pedagogic processes and activities are presented merely as exemplars. Users may think of more such processes in a given situation.

At the higher secondary stage, students gain even greater depth in perceiving the structure of mathematics as a discipline. They become familiar with the characteristics of mathematical communication: carefully defined terms and concepts, the use of symbols to represent them, precisely stated propositions and proofs justifying them. Thus they acquire proficiency in this special language which serves as a medium of thought that involves a combination of words, symbols having logical reasoning, formulas, etc.

## Curricular Expectations

At this stage learners are expected to develop ability and attitude for —

1. mathematisation (ability to think logically, formulate and handle abstractions) rather than knowledge of procedures (formal and mechanical).
2. mathematical vocabulary.
3. exploring concepts / series of concepts in several ways to develop and elaborate her understanding of them and the interrelationship between them.
4. developing the processes involved in mathematical reasoning
5. developing the processes of dealing with greater abstractions, moving from particular to general to particular.
6. movement with facility from one representation to another of a concept or process.
7. solving and posing problems.
8. realising as to how and why mathematics is all around us by establishing linkages with one's life and experiences and across the curriculum.
9. seeing connections with what she has studied so far, consolidate it and begin to try to understand the formal thought process involved.

**Class XI**

<b>Pedagogical Processes</b>	<b>Learning Outcomes</b>
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to —</b></p> <ul style="list-style-type: none"> <li>• perform activities of the following type to get an idea of Sets                             <ul style="list-style-type: none"> <li>→ Students may Collect (write the names) different materials such as kitchen utensils, materials in a school bag, furniture etc</li> <li>→ They may identify objects which are in this collection and those objects which are not a part of it.</li> <li>→ The idea of <i>sets, representation of sets, elements of a set, subsets, super sets, number of elements in a set</i>, etc could be constructed by the learners by discussing on the above objects.</li> <li>→ Later on the collection of different numbers, geometrical shapes etc can be given.</li> </ul> </li> <li>• Do an activity where, one child can write a set in one of the forms ,say roster form,, the others can change it into other form.</li> <li>• Solve puzzles of the following type to introduce the concept of Cartesian products.  <i>A team consists of three players a,b,c and the second team consists of players d,e. Every player from first team will play a game of chess with all the members from second team. Then how many games of</i> </li> </ul>	<p><b>Learner</b></p> <ul style="list-style-type: none"> <li>• develops the idea of Set from the earlier learnt concepts in number system , geometry etc.</li> <li>• identifies relations between different sets.</li> <li>• relates earlier learnt concept of trigonometric ratios to functions and evolves the idea of trigonometric functions.</li> <li>• Demonstrates deductive thinking by using technique of mathematical induction for establishing generalized mathematical statements.</li> <li>• Extends the idea of real numbers to a larger system of complex numbers.</li> <li>• Demonstrates strategies for solving systems of linear inequalities.</li> <li>• Applies the ideas of permutations and combinations to daily life situations of arranging and grouping the objects.</li> <li>• Develops the idea of Binomial theorem for a positive integral index from the earlier learnt concepts of finding squares and cubes of binomials.</li> <li>• Extends the ideas related to Arithmetic</li> </ul>

*chess will happen and who will be playing?*

- develop through discussions, on the examples of the above type, the concept of relation, domain and range .
- understand the concept of a function through group activities such as

→ *One member from the first group will tell a natural number, and then the opposite group will tell a corresponding number related to the first number in some way (say, double of the number or triple or square, etc) and the game will continue with the groups interchanging their roles. After every step, the first group needs to tell the relation.*

→ *One of the students can write the numbers given by both the teams under separate column.*

The concept of domain, range etc could be Developed through this activity.

- consolidate the trigonometric ratios learnt in the earlier classes and relate them with the concept of functions by introducing the concept of an angle in radian measures.
- use appropriate software such as geogebra and let the learner explore the different graphs and properties of trigonometric functions.
- use different examples, to get an idea of the principal of mathematical induction use it as a tool for deductive thinking while solving mathematical problems

progressions learnt earlier to new types of sequences and their series.

- Constructs different forms of a straight line using the earlier learnt concepts of coordinate geometry.
- Analyses different curves like circles, ellipses, parabolas and hyperbolas based on the ideas developed for straight lines using coordinates.
- Develops strategies of locating a point in three dimensions based on the concepts of two dimensional coordinate geometry.
- Evolves the concepts of limit and derivative of a function by analyzing the behaviour of functions when the corresponding variable approaches a certain value.
- Relates deductive reasoning to the mathematical statements studied so far.
- Applies Measures of dispersion to get a better interpretation of data of different daily life situations.
- Builds up the axiomatic approach to Probability through the terms, random experiment, Sample space, events etc.

- find solution of different quadratic equations such as  $x^2 + 2x + 1 = 0$ ,  $2x^2 - x - 1 = 0$ ,  $x^2 - x - 6 = 0$ ,  $x^2 + 1 = 0$ . This may give them an idea of numbers which could be solutions other than real numbers. The concept of Complex number could then be introduced. The properties of complex numbers and their representation may then be done with the help of examples.
- Consolidate the idea of linear equations in one variable and two variables by asking students to frame examples. These examples could be used for conceptualizing the inequalities such as  $<$ ,  $>$ ,  $\neq$ ,  $\geq$  and  $\leq$ .
  - Learners may be encouraged to create situations, which involves such inequalities.
  - Students could be find the solutions of inequalities such as  $4x - 2 < 8$ , when  $x$  is an integer and natural number with the help of number line.
- To perform the following activity to get an idea of the arrangement of objects in different ways :
  - *Take two sheets of papers say,  $S_1$  and  $S_2$ .*
  - *To colour these sheets with ,say, three different coloured pens say,  $C_1, C_2, C_3$*
  - *They may explore the possible pairs of sheets and colours. For e.,g.  $S_1 C_1, S_1 C_2, S_1 C_3$  etc.*
  - *They may be asked to count all the possible such pairs.*
  - *Students may be encouraged to choose different objects and their number. For e.g. putting pens, pencils and erasers in two*

boxes.

→ From concrete objects they can be guided to think of letters/numbers etc. For e.g. The number of ways in which words can be formed from the letters say, a,r,f.

→ After discussion on each of these situations the formal principle can be arrived at called the **Fundamental Principle of Counting**.

- think of situations related to arrangements of objects. Through activities like the following the idea of classification of two broad categories may be arrived at.

→ Students are lined up in a row. The maximum number of such possible arrangements by shuffling the position of students.

→ A team of say, 4 students has to be made out of 7 probables for participation in a quiz competition(considering that all are equally capable) . The maximum number of such possible teams.

→ After enough discussions students may be introduced to the two broader categories of, *Permutations* and *Combinations*.

- revisit the binomial expansions upto the index 3 [ say,  $(a + b)^3$ ] and extend it further to higher indices.

→ observe the pattern in these expansions and may be motivated to generalize it.

→ A formal way of Binomial expansion to the nth power may then be established through discussions.

→ The related terms like General term etc.

may then be thought of.

- recall the concept of Arithmetic Progressions, done in earlier classes, through some questions based on it. This will initiate in them the process of thinking about sequences.

→ The concept of  $n$ th term studied in a particular sequence i.e. arithmetic progression, can be extended to any sequence. Given an  $n$ th term students may be encouraged to write successive terms of that sequence by putting  $n=1,2,3,\dots$ . For e.g. if  $a_n = n + 5$  then the successive terms would be  $1+5, 2+5, 3+5, \dots$  i.e.  $6, 7, 8, \dots$ . The students will realise the role of patterns in forming newer types of sequences.

- recall, through different tasks, the use of Coordinate Geometry in establishing different forms of a straight line. It may be brought to their notice that these forms were mainly related to length of the line. A question can be asked whether it is possible to determine the rotation of the straight line using Coordinate geometry.

→ The discussion on the above question may evolve the concept of slope of a line. This can then lead to the different concepts related to the orientation of a line with respect to other lines including the coordinate axes.

→ Students may be motivated to discuss as to under what conditions can the position of a line in a coordinate plane be fixed. Having evolved one condition using the coordinates of a point on a line, other

<p>forms can be evolved by thinking of modifying the previous condition.</p> <p>→ Students may be guided to realize that a straight line is one of the curves that is formed under certain conditions discussed above. They can explore what other types of curves they might get if the conditions vary.</p> <ul style="list-style-type: none"> <li>• Explore using Coordinate geometry, different conditions on different shapes like, circle, ellipse, parabola and hyperbola.</li> </ul>	
<b>Class XII</b>	
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to —</b></p> <ul style="list-style-type: none"> <li>• differentiate between different examples of relations given to them. Learners after observing the relations should discuss their observations with the teacher. The discussion on these comments should lead to different types of relations.</li> <li>• Identify about one-oneness and onto-ness of functions by discussing various examples of functions and drawing their graphs.</li> <li>• Discuss trigonometric functions on different domains like <math>(0, \pi)</math> or <math>(-\pi, \pi)</math>. Learners may comment on which domain the trigonometric function is one-one and <b>onto</b>, one-one or simply onto. The exchange of ideas may lead to the concept of inverse trigonometric function. Learners may be motivated to make decisions and give reasons for that.</li> </ul>	<ul style="list-style-type: none"> <li>• identifies different types of relations and functions.</li> <li>• explores the values of different inverse trigonometric functions</li> <li>• Evolves the idea of matrices as a way of representing and simplifying mathematical concepts.</li> <li>• Evaluates determinants of different square matrices using their properties.</li> <li>• Demonstrates ways to relate differentiability and continuity of a function with each other.</li> <li>• Develops the processes in Integral calculus based on the ideas of differential calculus learnt earlier.</li> <li>• Applies the concepts of Integral calculus to calculate the areas enclosed by curves.</li> <li>• Develops the concepts of differential equations using the ideas of differential</li> </ul>



- download the open source software Geogebra and try exploring graphs of different functions including trigonometric functions. Other ICT material including the e resources on NROER can be used for discussing the concepts in groups.

- Discuss examples of the following type to evolve the idea of different types of matrices.

*If six students have pens only, then a matrix with only one column can be created. With similar contexts matrices with one column having different entries may lead to the idea of a type of matrix for which a name 'column matrix' can be introduced.* Students may be guided to relate the idea of arrangement of objects to the order of matrix.

- observe graphs of different functions in terms of their continuity. For example the graph of  $f(x) = x$  is an unbreakable line, however the graph of

$$f(x) = 1 \text{ if } x \leq 0$$

$$= 2 \text{ if } x > 0$$

breaks at  $x=0$ . The graphs of several such functions can be discussed to get a major classification of functions as continuous and not continuous. Different ICT material including Geogebra can be used to get generate different types of functions and their graphs.

- apply the properties of continuous functions while discussing those functions that are a

and integral calculus.

- Constructs the idea of vectors and their properties and relates them to earlier learnt concepts in different areas of mathematics such as geometry, coordinate geometry etc.
- Evolves newer concepts in three dimensional geometry from that learnt earlier, in the light of vector algebra, such as, direction cosines, equations of lines and planes under different conditions etc.
- Formulates and solves problems related to maximization/ minimization of quantities in daily life situations using systems of inequalities/inequations learnt earlier.
- Calculates conditional probability of an event and uses it to evolve Baye's theorem and multiplication rule of probability.
- Determines mean and variance of a probability distribution using the concept of random variable.

combination of functions which are individually continuous. For e.g. 1)  $f(x) = (3x+1)(2x+5)$ , for  $x \neq -5/2$ , both  $p(x)$  and  $q(x)$  are polynomial functions which are continuous. 2)  $f(x) = \tan x = \sin x / \cos x$  with  $\cos x \neq 0$ .

- Explore and verify in groups the techniques of differentiating functions of a different nature using the earlier learnt concepts. For e.g application of the concept of logarithms can be shown when a need for differentiating functions of the form  $u(x)^{v(x)}$  (such as,  $(x+1)^{\tan x}$ ) arises. Also derivatives of parametric functions can be explored and discussed with others.
- Discuss the second derivative of a function as an application of the technique of differentiation of functions.
- Observe the visual representation of mean value theorems using Geogebra software and e-resources on NROER portal of NCERT. Students may be encouraged to comment on the statements of these theorems and their use in analyzing different functions.
- Do an activity to get an idea of integration of a function: *having given some simple functions they may explore those functions whose derivatives result in the given functions. For e.g. given  $f(x) = x+2$ , students after discussion may come out with a function  $g(x) = x^2/2 + 2x$  such that  $g'(x) = f(x)$ .*
- draw the graphs of functions obtained as indefinite integrals of another function by varying the values of constant of integration, say,  $c$ . They may observe the graphs and

comment on the pattern , if any, in the graphs, observed by them.

- explore methods of integrating functions of a more complex nature that involve multiplication , division and square roots of functions . Through discussion they may realize that the methods of integrating learnt so far cannot be used for such functions and relevant methods have to be found.
- share in groups the different equations, they have studied in the previous classes. They may be motivated to extend this concept to those equations that involve derivative of a function. The concept of differential equations can then be evolved.
- It may be brought to their notice how the concepts of differentiation and integration could be applied to solve these equations.
- Discuss strategies that could lead to the concept of a vector. One of these could be, they may mark different points in a plane. Joining these with the origin will give rays with different angles made with the X-axis and their lengths from the Origin to the marked point can be calculated. Variation in angles will vary the directions of the rays . Thus they using coordinate geometry students may get a better idea of a vector.
- discuss these concepts of vectors with reference to three dimensions. It may be discussed that to determine the position of a vector in a solid, three components along X,Y,Z axes are required. Students may use material on NROER

for better visualisation and understanding.

- draw graphs for different linear equations and then discuss the region represented by its corresponding inequality. For e.g. the graph of  $x=2$  is a straight line parallel to Y-axis at a distance 2 from it whereas students should realize that  $x<2$  or  $x>2$  are regions to left and right respectively of  $x=2$ .
- Discuss in groups different situations and find solutions for maximizing/minimizing the object function through graphs of inequalities involved.

### **Suggested Pedagogical Processes in an Inclusive Setup**

Physical activity plays an important role in maintaining health, well-being and quality of life. Children may have physical problems leading to mobility restriction in exploring the environment and may require a number of adaptations in the physical environment and sports depending on the level of support needed and functioning. They may experience loss (partial or full) of bodily functions like walking, speech, fine motor skills, bladder control, hand movements, etc. What is important is that the child should not be left out of any activities which are enjoyed by other students, including engaging the child in sports and other physical and cultural activities. There may also be children in the class with health issues requiring constant checkups and medical attention. Levelling of all areas of school with ramps and also building a ramp from class to the playground would help these children to participate. There may also be children who cannot see and hear like other children. They may require adaptations by substituting visual inputs with sound inputs or vice versa. Encouraging physical activities and sports for children with disabilities can be done by setting up a buddy system, making contacts with others to complete specified levels of physical activity, or setting up walking groups or other groups to provide friendship and support; finding fitness and health professional who can provide physical activity options that match their specific abilities would also be a supportive move. A teacher shall strive to establish clear ground rules for classroom and field activities that demonstrate respect and motivation for diverse ability levels. The physical education teacher may build an encouraging classroom climate that enables students to relate to one another in positive, respectful, and supportive ways.

Also the teacher should be well equipped to learn to read students' non-verbal cues. The teacher should, as far as possible, avoid giving over attention. Touching should be avoided in Physical Education instruction unless others are present and watching. Adaptations may be made in areas, such as, skill learning, sequence, methodology, materials and equipment, technology, markings, and setting .A few pedagogical processes are suggested below:

1. Adapt evaluation criteria (rubrics) to accommodate individual student needs.
2. Increase or decrease the number of activities the student is expected to complete.
3. Adapt to the student's response to instructions.
4. Increase or decrease the group members such that each group has at least one special child with matching disability without compromising on the challenge that is posed to each group.

DRAFT

**LEARNING OUTCOMES FOR THE**  
**BIOLOGY**  
**HIGHER SECONDARY STAGE**

**Introduction:**

Biology is the story of life on earth. It is the science of life forms and living processes. Biological systems, often appear to challenge physical laws that govern the behaviour of matter and energy in our world. Historically, biological knowledge was ancillary to knowledge of human body and its function. The latter as we know, is the basis of medical practice. However, parts of biological knowledge developed independent of human application. Fundamental questions about origin of life, the origin and growth of biodiversity, the evolution of flora and fauna of different habitats, etc., caught the imagination of biologists.

The very description of living organisms, be it from morphological perspective, physiological perspective, taxonomical perspective, etc., engaged scientists to such an extent that for sheer convenience, if not for anything else, the subject matter got artificially divided into the subdisciplines of botany and zoology and later into even microbiology. Meanwhile, physical sciences made heavy inroads into biology, and established biochemistry and biophysics as new subdisciplines of biology. Mendel's work and its rediscovery in the early twentieth century led to the promotion of study of genetics. The discovery of the double-helical structure of DNA and the deciphering of three dimensional structures of many macromolecules led to the establishment of and phenomenal growth in the dominating area of molecular biology. In a sense, functional disciplines laying emphasis on mechanisms underlying living processes, received more attention, support, intellectual and social recognition. Biology, unfortunately, got divided into classical and modern biology. To the majority of practising biologists, pursuit of biological research became more empirical rather than a curiosity and hypothesis driven intellectual exercise as is the case with theoretical physics, experimental physics, structural chemistry and material science. Fortunately and quietly, general unifying principles of biology were also being discovered, rediscovered and emphasised.

In the nineteenth and twentieth centuries, Physics and Chemistry were applied to Biology and the new science of Biochemistry soon became the dominant face of biology. On one hand

Biochemistry was integrating with Physiology, becoming almost synonymous with it. On the other hand it gave rise to Structural Biology (structure of biomacromolecules), originally called Molecular Biology. The work of eminent biologists established a modern version of Molecular Biology dealing with life processes at molecular level.

Physics and Chemistry dominated public perception of science for a long time. Day-to-day life of man was influenced by developments in Physics, Chemistry and their respective manufacturing industries. Slowly and steadily, Biology, not to be left behind, demonstrated its utility for human welfare. Medical practice, especially diagnostics, green revolution and the newly emerging biotechnology and its success stories made the presence of biology felt by the common man. Patent laws brought biology into political domain and commercial value of biology became obvious.

Thus, the subject Biology has emerged as one of the separate disciplines of science at higher secondary level. Although the nature of biology and nature of physical sciences share many common aspects, however, focus of biology creates unique philosophical, methodological and ethical premises on which biology should be understood and assessed. The curriculum in Biology should provide learners with sufficient conceptual clarity of biological phenomena which will provide the basic understanding required to further learn about the intricacies of the concepts by developing higher order thinking skills.

### **Curricular expectations:**

At higher secondary stage learners who have opted for biology as one of the disciplines for study, are expected to:

1. Identify and develop understanding of concepts, principles, theories, and laws governing the physical world around a biological entity.
2. develop ability to acquire and use the methods and processes of science, such as observing, questioning, planning investigations, hypothesising, collecting, analysing and interpreting data, communicating explanations with evidences, justifying explanations, thinking critically to consider and evaluate alternative explanation, etc., in the biological perspectives.
3. Build upon the perceptive of basic tools and techniques used in concepts to analyse various issues in biology.
4. conduct experiments, also involving quantitative measurements in biology.

5. appreciate how concepts of biology evolve with time giving importance to its historical prospective.
6. develop scientific temper with respect to biological phenomena (objectivity, critical thinking, creative skills, freedom from fear and prejudice, etc.).
7. nurture natural curiosity, aesthetic sense, and creativity in biological processes and phenomena.
8. imbibe the values of honesty, integrity, cooperation, concern for life and preservation of environment.
9. develop respect for human dignity and rights, equity and equality.
10. Connect biological concepts to real life problems and develop innovative problem-solving abilities to solve problems related to life situations through understanding of biological concepts.
11. Widen skills to illustrate linkages of elementary aspects of biology with complex phenomena.
12. Apply biological discoveries/ innovations in everyday life.
13. Integrate and interrelate the biological concepts with other areas of knowledge by underlying common principles.



## Class XI

Suggestive Pedagogical Processes	Learning Outcomes
<p>The learners may be provided with opportunities individually or in groups and encouraged to —</p> <ul style="list-style-type: none"> <li>• explore surroundings and observe, group or classify organisms, phenomena and processes based on certain characteristics and salient features, such as; cell types, cell walls, mode of nutrition, etc., by performing various activities/ experiments/ investigations. Based on the observations, a discussion may be facilitated to help arrive at the appropriate conclusions.</li> <li>• ask questions on the basis of observations such as how to group organisms in various taxonomic categories? How to do Hydroponic plant production?</li> <li>• design and carry out activities/experiment/investigations to find the answer to their queries, such as, Separating the mixture of plant pigments using paper chromatography and their absorption spectrum using spectrophotometer, or effect of light intensity on the rate of photosynthesis, followed by peer group discussion to generalise.</li> <li>• connect with the daily life</li> </ul>	<p>Learner</p> <ol style="list-style-type: none"> <li>1. differentiates organisms, phenomena and processes based on certain characteristics and salient features, such as, prokaryotes and eukaryotes, plant cell and animal cell, diffusion and osmosis, meristematic tissues and permanent tissues; squamous epithelium and cuboidal epithelium, diploblastic and triploblastic organisation; metacentric, submetacentric, acrocentric and telocentric chromosomes; etc.</li> <li>2. classifies organisms, phenomena and processes, based on certain characteristics / salient features systematically in more scientific and organized manner; such as five kingdom classification system of organisms under various hierarchical structural organizations; natural resources, etc.</li> <li>3. relates processes and phenomena with causes and effects, such as, characteristics of living with cell as basic unit of life, transpiration pull with absorption of water by roots of plants; tissues with their functions, deficiency symptoms of essential elements, pumping of heart with circulation of blood,</li> </ol>

<p>experiences, through interdisciplinary approach by using various available resources including textbooks, newspapers, internet etc; such as; using leaves of neem (<i>Azadirachta indica</i>) in storing food grains due to the presence of bioactive compounds in neem leaves as result of secondary metabolism and their pesticidal effects.</p> <ul style="list-style-type: none"> <li>• conduct survey to understand the process of spreading of diseases. They may be encouraged to collect data from doctors and nurses about various diseases. They can prepare a report on spread, causes, prevention, and cure of diseases. They may share their findings with the community through role plays, skits and also campaign in the community for prevention.</li> <li>• present their observations/ ideas/ learning through flow charts/ concept maps/ graphs/ floral diagram and ICT tools, etc.</li> <li>• gather data for calculating different physical quantities, such as determination of population density, productivity, percentage of pollen germination, etc, which can be shared and discussed in groups or with peers. Uses rubrics to assess the conversion of units and reporting</li> </ul>	<p>hormones with various physiological functions, digestive enzymes electrocardiograph (ECG) and heart diseases; smoking and lung diseases; etc.</p> <ol style="list-style-type: none"> <li>4. applies scientific terminology for organisms, processes, and phenomena based on internationally accepted conventions, such as, systematic technical description of flowers, taxonomic study of plants and animals; Binomial nomenclature of organisms; coelom, bisymmetric body etc; bisexual and unisexual organisms, actinomorphic and zygomorphic flowers, aestivations, placentations, physiological processes, cardiac cycle; organ structures; SA node; AV node; etc.</li> <li>5. explains efficiently systems, relationships, processes and phenomena such as; organ systems in frog, cockroach and earthworms, structures and function of cell organelles, photosynthesis, respiration, mechanism of contraction of skeletal muscles, etc.</li> <li>6. describes contribution of scientists/researchers all over the world in systematic evolution of concepts, scientific discoveries and inventions in the field of biology based on historical scientific events/ timelines etc; such as; Anton Von Leeuwenhoek described a</li> </ol>
---	--

<p>results.</p> <ul style="list-style-type: none"> <li>• Draw diagrams / sketches/ flow charts, concept maps, floral diagrams, painting etc, of organisms and processes etc; may be sometimes by using software tools such as paint and brush etc</li> <li>• collect and analyse wide variety of graphs from newspapers, magazines or the internet. They may be encouraged to draw, analyse and interpret the graphs, for example, substrate concentration graphs, growth versus time graphs, etc.</li> <li>• write chemical formulae of biomolecules, bio-chemical equations, etc., using 3-D models.</li> <li>• write floral formulae of flowers using live specimens, etc.</li> <li>• select and use appropriate devices for understanding of structural and physiological and other intricacies of living organisms.</li> <li>• collect information from books, e-books, magazines, journals, libraries, internet, etc., to appreciate the efforts of scientists made over time, for example, discovery of microscope, etc., and showcase it in the form of a project or role play.</li> <li>• observe various technological devices and innovative exhibits such as waste management kits, water filtration</li> </ul>	<p>live cell and later, Robert Brown discovered the nucleus; in classification systems of living organisms, Aristotle was the earliest and then Linnaeus proposed two kingdom classification and later R. H. Whittaker proposed five kingdom classification, etc.</p> <ol style="list-style-type: none"> <li>7. makes linkages at the interface of Biology with other disciplines by relating various interdisciplinary concepts such as; mathematical models on arithmetic and geometric growth rates in plants/organisms, absorption and transfer of light energy in photosynthesis; secondary metabolites, structure of protein, structure of DNA, etc.</li> <li>8. draws labelled diagrams, flow charts, concept maps, graphs and <b>floral diagrams</b>, such as, floral diagrams of given flowers, parts of flowers, modified roots external features of earthworm, cockroach and frog, Z-scheme of light reaction, calvin cycle, etc.</li> <li>9. writes floral formulae in technical language based on floral diagrams of different flowers such as flowers of pea, mako and onion etc</li> <li>10. prepares slides for study the structural intricacies of life forms and structural organisations, such as, transverse sections of root, stem and leaves,</li> </ol>
---	--

<p>system, using low-cost or no-cost eco-friendly materials, develop them and showcase it in science exhibitions, clubs and parent-teacher meets.</p> <ul style="list-style-type: none"> <li>• share and discuss their beliefs and views regarding myths, taboos, superstitions, etc., by initiating an open ended debate, discussion/arguments leading to the alignment of their beliefs to the scientifically proven facts. They may also be involved in awareness campaigns in the community.</li> </ul>	<p>mitosis and meiosis; pollen germination, etc.</p> <p>11. handles laboratory tools, and apparatuses, instruments and devices properly for performing activities/ experiments/ investigations such as; uses foldscope/microscope for observing internal structure of transverse section of root, stem and leaves, intricacies of chloroplasts, stomata, etc.; digital balance/scale for weighing chemicals; pipette for drawing liquid, etc.</p> <p>12. plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, or to seek answers to queries on their own, such as, what is the pattern and structure of organisms in nature?, Does <i>Pisum sativum</i> carry bisexual and zygomorphic flowers, how do plants grow in length?, Do plants breath?, What does (mainly which gas) our breath contains?, What happens to cooked rice when we chew and when we do not chew? etc.</p> <p>13. analyses and interprets graphs and figures such as, Enzyme activity-temperature, pH and substrate concentration graphs, growth versus time graphs, oxygen dissociation curve etc.</p> <p>14. uses scientific conventions, symbols, and equations to represent various</p>
---	---

	<p>quantities, elements, and units, such as, SI units, symbols of elements, formulae of simple compounds, pathways of aerobic and anaerobic respiration, organic compounds in living organisms, etc.</p> <p>15. draws conclusion on the basis of data collected in activities / experiments and investigatory projects conducted by them, such as, roots, stem and leaves modify to perform various functions, deficiency of nutrients affect physiological processes in plants, deficiency of protein in diet causes protein-energy malnutrition (PEM), etc.</p> <p>16. communicates the findings and conclusions effectively, such as, those derived from experiments, activities, and projects both in oral and written form using appropriate figures, tables, graphs, and digital forms, takes part in the discussions, argumentations etc.</p> <p>17. applies scientific concepts of Biology in daily life and solving problems, such as; by mowing the grass of a lawn assuming that due to lateral meristem grass will regrow, determine the age of a fallen tree by counting concentric rings present on the transverse cut of tree trunk, drinking less/more water changes the concentration and volume of urine, etc.</p> <p>18. appreciates technological applications</p>
--	--

and processes in Biology towards the improvement in the quality of life and sustainable development, such as, Hydroponic plant production, uses of algae as commercially like *Algin* (brown algae), *Carrageen* (red algae), *Agar*; *Chlorella* uses as food supplement in space; dialysis for kidney failure patients; uses of artificial arms and limbs, etc.

19. exhibits creativity in designing models using eco-friendly resources / preparing charts / paintings / sketching/ etc. on different topics; such as; structure of cockroach, etc.
20. exhibits ethics and values of honesty, objectivity, rational thinking and freedom from myth and superstitious beliefs while taking decisions, such as, reports and records experimental data accurately, reveals respect for life by using weed plant for investigatory studies/ activities, etc.,
21. makes efforts to conserve environment realizing the inter- dependency and inter-relationship in the biotic and abiotic factors of environment, such as, by appreciating use of weed plants in the study, using eco-friendly waste material, etc.
22. applies learning to hypothetical situations, such as, possibility of life on other planets, etc.

## Class XII

Suggestive Pedagogical Processes	Learning Outcomes
<p>The learners may be provided with opportunities individually or in groups and encouraged to —</p> <ul style="list-style-type: none"> <li>• explore surroundings and differentiate organisms, phenomena and processes based on certain characteristics and salient features, such as; types of reproduction, etc., by performing various activities/ experiments/ investigations. Based on the observations, a discussion may be facilitated to help arrive at the appropriate conclusions.</li> <li>• ask questions on the basis of observations such as What are the different types of pollination strategies in plants? Which term is used for growing plants using artificial media?</li> <li>• design and carry out activities/experiment/investigations to find the answer to their queries, such as, Separating the mixture of plant pigments using paper chromatography and their absorption spectrum using spectrophotometer, or effect of light intensity on the rate of photosynthesis, followed by peer group discussion to generalise.</li> <li>• connect with the daily life experiences, through interdisciplinary approach by</li> </ul>	<p>Learner</p> <ol style="list-style-type: none"> <li>1. differentiates organisms, phenomena and processes based on certain characteristics and salient features, such as, reproduction in organisms, reproductive parts of commonly available flowers; autogamy and geitonogamy, cytokinesis in plant and animal cells, innate and acquired immunity, vaccination and immunisation, divergent and convergent evolution; homologous and analogous organs; transcription and translation; in-breeding and out-breeding; <i>in-vitro</i> and <i>in-vivo</i> fertilization; genotype and phenotype; etc.</li> <li>2. relates processes and phenomena with causes and effects, such as, diseases with symptom, production with use of fertilisers, menstruation and hygiene; pregnancy and embryonic development, etc.</li> <li>3. applies scientific terminology for organisms, processes, and phenomena based on internationally accepted conventions such as, parthenocarpic fruits polyembryony seminiferous tubules, parthenogenesis, pericarp, microsporangia, geitonogamy,</li> </ol>

<p>using various available resources including textbooks, newspapers, internet etc; such as; using leaves of neem (<i>Azadirachta indica</i>) in storing food grains due to the presence of bioactive compounds in neem leaves as result of secondary metabolism and their pesticidal effects.</p> <ul style="list-style-type: none"> <li>• conduct survey to understand the process of spreading of diseases. They may be encouraged to collect data from doctors and nurses about various diseases. They can prepare a report on spread, causes, prevention, and cure of diseases. They may share their findings with the community through role plays, skits and also campaign in the community for prevention.</li> <li>• present their observations/ ideas/ learning through flow charts/ concept maps/ graphs/ floral diagram and ICT tools, etc.</li> <li>• gather data for calculating different physical quantities, such as determination of population density, productivity, percentage of pollen germination, etc, which can be shared and discussed in groups or with peers. Uses rubrics to assess the conversion of units and reporting results.</li> <li>• Draw diagrams / sketches/ flow charts, concept maps, floral diagrams, painting etc, of organisms and processes etc;</li> </ul>	<p>albuminous seeds, apomixis, medical termination of pregnancy (MTP); Acquired Immuno Deficiency Syndrome (AIDS); mutation; pleiotropy; sex determination; syndrome; plasmid; vectors; genetically modified organisms (GMO); biomass; ecological pyramids; biomagnification, etc.</p> <p>4. explains efficiently systems, relationships, processes and phenomena, such as; double fertilisation, flower is a modified shoot, process of embryonic development in mammals, adaptations in animals living in xeric and hydric conditions, sexually transmitted infections, mendalian and chromosomal disorders, human genome project, replication of retrovirus, population interactions, energy flow in ecosystem, succession of plants, use of DNA finger printing in forensic science, process of evolution etc.</p> <p>5. describes contribution of scientists/researchers all over the world in systematic evolution of concepts, scientific discoveries and inventions in the field of biology based on historical scientific events/ timelines etc; such as; Mendalian genetics to Morgans work for linkage and recombination, Hershey and Martha Chase's experiment to establish the concept that the DNA is</p>
--	---



<p>may be sometimes by using software tools such as paint and brush etc</p> <ul style="list-style-type: none"> <li>• collect and analyse wide variety of graphs from newspapers, magazines or the internet. They may be encouraged to draw, analyse and interpret the graphs, for example, substrate concentration graphs, growth versus time graphs, etc.</li> <li>• write chemical formulae of biomolecules, bio-chemical equations, etc., using 3-D models.</li> <li>• write floral formulae of flowers using live specimens, etc.</li> <li>• select and use appropriate devices for understanding of structural and physiological and other intricacies of living organisms.</li> <li>• collect information from books, e-books, magazines, journals, libraries, internet, etc., to appreciate the efforts of scientists made over time, for example, discovery of microscope, etc., and showcase it in the form of a project or role play.</li> <li>• observe various technological devices and innovative exhibits such as waste management kits, water filtration system, using low-cost or no-cost eco-friendly materials, develop them and showcase it in science exhibitions, clubs and parent-teacher meets.</li> <li>• share and discuss their beliefs and views regarding myths, taboos, superstitions, etc., by initiating an open ended debate,</li> </ul>	<p>genetic material, Watson and Crick model of DNA, etc</p> <ol style="list-style-type: none"> <li>6. makes linkages at the interface of Biology with other disciplines by relating various interdisciplinary concepts such as; using mathematical models of monohybrid and dihybrid cross; pedigree analysis; molecular basis of DNA and RNA, recombinant DNA technology, bioprocess engineering, population growth curve, etc</li> <li>7. draws labelled diagrams, flow charts, concept maps, graphs, such as, reproductive parts of flowers, decomposition cycle in terrestrial ecosystem, nutrient cycles, male and female reproductive system of human; ecological pyramids; life cycle of <i>Plasmodium</i>, etc.</li> <li>8. prepares slides for study the structural intricacies of life forms and structural organisations, such as, staining of nucleic acid by acetocarmine, etc</li> <li>9. plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, or to seek answers to queries on their own, such as, How many daughter cells are produced at the end of meiosis?, At which stage of follicular development, is ovum released?, How is independent assortment of alleles important from the point of view of variation?, Which</li> </ol>
---	--

<p>discussion/arguments leading to the alignment of their beliefs to the scientifically proven facts. They may also be involved in awareness campaigns in the community.</p>	<p>type soil has poor nutrient status and high leaching?, How can water-holding capacity of soil be improved?, What is the importance of succulent leaves and stem for a xerophytic plant?, etc.</p> <ol style="list-style-type: none"> <li>10. handles laboratory/ agricultural tools, and apparatuses, instruments and devices properly for performing activities/ experiments/ investigations such as; uses agarose gel electrophoresis, pH meter, spectrophotometer, etc.</li> <li>11. analyses and interprets graphs and figures such as, species-area relationship graphs, crop yield with stipulated time graph after use of fertilisers, effect of sewage discharge on some important characteristics of a river, etc.</li> <li>12. uses scientific conventions, symbols, and equations to represent various quantities, elements, and units, such as, SI units, symbols of elements in macromolecules, genetic code, formulae of simple compounds, biochemical equations, etc.</li> <li>13. draws conclusion on the basis of data collected in activities/ experiments and investigatory projects conducted by them, such as, only one pollen tubes reach the ovules, algal bloom and biochemical oxygen demand, etc.</li> <li>14. communicates the findings and</li> </ol>
--	--

	<p>conclusions effectively, such as, takes part in the discussions, participate and present the experiments, activities, projects and investigations using appropriate figures, tables, graphs, and digital forms, etc.</p> <p>15. applies scientific concepts in daily life and solving problems, such as; maintain hygiene and sanitation during menstruation, organic farming, coping up with the plastic and e-waste, <b>etc.</b></p> <p>16. appreciates technological applications and processes in Biology towards the improvement in the quality of life and sustainable development, such as; multiple ovulation embryo transfer technology for herd improvement; plant breeding for development of resistant varieties of plants; plant tissue culture; microbial fermentation for industrial production, waste water treatment, biogas production technology, using vehicles having standard mass emission norms to control air pollution, etc.</p> <p>17. exhibits creativity in designing models using eco-friendly resources / preparing charts / paintings / sketching/ etc. on different topics; such as; water purification systems, electrostatic precipitator, etc.</p> <p>18. exhibits ethics and values of honesty, objectivity, rational thinking and freedom from myth and superstitious</p>
--	--

	<p>beliefs while taking decisions, respect for life, etc., such as, reports and records experimental data accurately, myth that sexually transmitted diseases are spread by casual physical contact, belief that vaccination is not important for prevention of diseases, ethical arguments for conservation of biodiversity and conducts plantation drive of endangered species?, etc.</p> <p>19. applies/ makes efforts to conserve environment realizing the inter-dependency and inter-relationship in the biotic and abiotic factors of environment, such as, by appreciating use of weed plants in the study, solid waste management, etc.</p> <p>20. calculates using the data given, such as, percentage of pollen germination, determination of population density, productivity, etc.</p> <p>21. applies learning to hypothetical situations, such as, what will happen if there is no producer as biotic component on the earth?, etc.</p>
--	---

**Development Team:**

Professor Dinesh Kumar, DESM, NIE, NCERT

Dr. C. V. Shimray, DESM, NIE, NCERT

Dr. Pushp Lata Verma, DESM, NIE, NCERT

Professor Sunita Farkya, DESM, NIE, NCERT (Member Coordinator)

**LEARNING OUTCOMES FOR THE  
CHEMISTRY  
HIGHER SECONDARY STAGE**

**Introduction**

The Higher Secondary Stage of education is the most crucial and challenging stage of school education because at this stage specialised discipline based, content oriented courses are introduced. Students reach this stage after 10 years of general education and opt for Chemistry with a purpose of mostly for pursuing their career in basic sciences or professional courses like medicines, engineering, technology and studying courses in applied areas of science and technology at tertiary level. Therefore, at this stage, there is a need to provide learners with sufficient conceptual background of Chemistry, which will make them competent to meet the challenges of academic and professional courses after higher secondary stage. National Curriculum Framework - 2005 recommends a disciplinary approach with appropriate rigour and depth with the care that syllabus is not heavy and at the same time it is comparable to the international level. It emphasizes a coherent focus on important ideas within the discipline that are properly sequenced to optimize learning. It recommends that theoretical component of Chemistry at Higher Secondary Stage should emphasize on problem solving methods and the awareness of historical development of key concepts of chemistry be judiciously integrated into content. Hence, the pedagogy must be a judicious mix of approaches laying emphasis on process of science rather than outcome only. However, integration and continuity with the secondary stage should be reflected while dealing with the concepts at higher secondary stage. At this stage there should be strong emphasis on experiments, technology and investigative projects.

Pedagogical process in chemistry should facilitate learners to get engaged with various scientific processes such as observing, questioning, planning investigations, hypothesising, collecting, analysing and interpreting data, constructing and communicating explanations with evidences, justifying explanations, thinking critically to consider and evaluate alternative explanation, etc. A wide range of strategies and their imaginative combinations such as activities, experiments, projects, field visits, surveys, problem solving, group discussions, debates, etc. can comprise pedagogical processes. Teacher may craft an apt learning environment offering space for individual learner to learn at her/his own pace and style; including children with special educational needs \*. Assessment as, for and of learning

should be an integral part of learning process. Teacher may further plan, design, and carry out assessment as per the competency to be assessed.

In a progressive society, chemistry can play a truly liberating role helping people out of the vicious circle of poverty, ignorance and superstition. Learners at this stage should be encouraged to reflect on the societal issues so that chemistry learning becomes meaningful in social context. Therefore, participation in various curricular activities including projects that bear on local issues and problem solving approach using science and technology must be regarded equally important.

### **Curricular Expectations:**

- Develops an interest in students to study chemistry as discipline;
- Promotes understanding of basic principles in chemistry while retaining the excitement in chemistry;
- Develops perception for chemistry not only as a discipline of science but make them realise the need and importance in the world around us;
- Strengthens the concepts developed at the secondary stage and to provide firm foundation for further learning of Chemistry at tertiary level more effectively;
- Develops ability to acquire and use the methods and processes of science, such as, observing, questioning, planning investigations, hypothesising, collecting, analysing and interpreting data, communicating explanations with evidences, justifying explanations, thinking critically to consider and evaluate alternative explanation, etc.
- Develops positive scientific attitude and appreciate contribution of Chemistry towards the improvement of quality of human life;
- Appreciates how concepts of Chemistry evolve with time giving importance to its historical prospective
- Develops problem solving skills and nurture curiosity, aesthetic sense and creativity;
- Inculcate values of honesty, integrity, cooperation, concern for life and preservation of the environment;
- Makes the learner realise the interface of Chemistry with other disciplines of science such as Physics, Biology, Geology, Geography, Pharmaceutical Science etc;
- Equips students to face challenges related to health, nutrition, environment, population, whether, industries, agriculture etc;
- Develops respect for human dignity and rights, equity and equality.

- Develops an appreciation for chemistry as a career option in future.

To meet curricular expectations at higher secondary stage in chemistry, the chemistry curriculum is largely organized around theory, practicals and projects. The course is self-contained and broadly covers fundamental concepts of Chemistry. Attempt has been made to see discipline of Chemistry does not remain only the science of facts but becomes related to modern applications in the world around us. The syllabus provides logical sequencing of the 'Units' of the subject matter with proper placement of concepts with their linkages for better understanding. Practical syllabus has two components. There are core experiments to be undertaken by the students in the classroom and will be part of examination while each student will carry out one investigatory project and submit the report for the examination. Integrating theory, practical and project work in chemistry will have a deeper impact on students learning.

### Pedagogical Processes and Learning Outcomes for Class XI

Suggested Pedagogical Processes	Learning outcomes
<p>The learners maybe provided with opportunities in pairs/ groups/ individually in an inclusive setup* and encouraged to –</p> <ul style="list-style-type: none"> <li>• observe, compare and group materials, such as elements, compounds and mixtures by carrying out experiment and recognise them on the basis of their properties; place elements into <i>s, p, d</i> and <i>f</i> blocks on the basis of their characteristics. A discussion may be facilitated to help arrive at the appropriate conclusions. Students with special needs should be given equal opportunity to perform the experiment and also participate in the discussion.</li> <li>• design and carry out activities/ experiments, for example, Comparison of</li> </ul>	<p><b>The learner –</b></p> <ul style="list-style-type: none"> <li>• <b>differentiates technical terms/ phenomena/ processes, based on, properties/ characteristics,</b> such as, gaseous state and vapours; atomic and molecular masses; extensive and intensive properties; close, open and isolated systems; alkanes, alkenes and alkynes; aliphatic and aromatic compounds etc.</li> <li>• <b>classifies materials/ phenomena/ processes, based on, properties/characteristics,</b> such as, elements, compounds and mixtures; elements into metals, metalloids and non – metals; <i>s, p, d, f</i> blocks; organic compounds on the basis of functional groups; substances as acids or bases</li> </ul>

pH of various fruit juices. Students may be encouraged to do the experiment by using universal indicator to compare the pH of various juices. How to analyse evaporation of different liquids? Students may be encouraged to compare the rate of evaporation of various liquids under different conditions by performing experiment. Learners may be encouraged to adopt micro-scale method of activities/experimentations to reduce pollution, experiment time and resources. Micro-scale method is also a safe way of experimentation. This may be followed by peer/ group discussion to conclude the findings.

- investigate the daily life experience, such as, increase of acidity in stomach and then getting relief after consuming antacid. Students may be encouraged to search for the composition of various antacids, their formulae and also the reason that how they help in relieving pain. Students can also measure the pH of various antacids and find out which antacid is best.
- conduct survey to find out for which purpose the water of the available water bodies (such as, river, well, bore-well municipality etc) is being used in the locality. Students can also find the Total Salt Dissolved (TDS) and pH of the collected samples of water. To conduct

according to Arrhenius, Bronsted -Lowry and Lewis concepts etc.

- **plans and conducts investigations/ experiments/projects to arrive at and verify the facts/ principles/ phenomena or to seek answers to queries on their own**, such as, What will be the melting point of oxalic acid? Is there any difference in the pH of apple juice and pine apple juice? What is the effect of dilution on pH of acid / base? Does rate of evaporation of different liquids depend on density, mass, surface tension, viscosity, humidity and temperature of the surroundings? etc.
- **takes appropriate precautionary measures (do's and don'ts) while handling apparatus, chemicals during laboratory work** such as use of safety glasses; wearing of laboratory coat; handling chemicals safely and judiciously; handling glass wares; performs reactions with harmful gases in fuming hood; discard or disposal of chemicals and broken glass wares properly etc.
- **relates processes and phenomena with causes/ effects**, such as, variation of pH of the solution with the hydrogen ion concentration; water is liquid whereas hydrogen sulphide is gas; ozone layer depletion causes skin cancer, eutrophication and its adverse effects;



this survey, students may be encouraged to visit and collect different samples of water from various water bodies. They can prepare a report and suggest for which purpose the collected sample of water can be used by analysing TDS and pH value of the water samples. For wider dissemination, they may share their findings with the community by organising a seminar.

- represent their observations/ ideas/ findings through tables/ flow charts/ concept maps/ graphs/ figures etc.
- examine the wide variety of graphs from books or e-books or internet. Students may be encouraged to draw, analyse and interpret the graphs. For example, periodic trends of elements in the Periodic Table; geometry of molecules etc. Visually impaired students may be provided with embossed graphs/figures etc.
- write formulae of simple compounds, chemical equations, nomenclature of organic compounds etc, using paper and pen or interactive ICT simulations or games of cards.
- select and use appropriate devices for measuring physical quantities. Students may be encouraged to find the minimum and maximum value that can be measured by instrument and note down

process of evaporation causes cooling etc.

- **explains scientific terms/ factors / laws / theories governing processes and phenomena**, such as, bonding in three states of matter; various laws of chemical combination; discovery of electron, proton and neutron; photoelectric effect; Periodic Law; characteristic of metals, non-metals and metalloids; VSEPR Theory to explain the shapes of molecules; Types of hydrogen bonding; ionization of water and its dual role as acid and base; ; hard and soft water; bonding in allotropic forms of carbon; spontaneous and nonspontaneous processes; various factors affecting the equilibrium state of a reaction; preparation of hydrocarbons; aromaticity; mechanism of substitution reactions; cause of atmospheric pollution etc.
- **draws diagrams/ flow charts/ concept map/graphs**, such as, Lewis structures of simple molecules; draw shapes of simple covalent molecules based on different types of hybridisation involving *s*, *p* and *d* orbitals; geometry of simple molecules on the basis of VSEPR theory; setup of experiments; flow chart of classification of matter, organic compounds etc.; graphs on pressure-volume relationship, volume-temperature relationship, pressure-temperature relationship etc.
- **derives equations**, such as, gas laws; second law of thermodynamics etc.

the readings correctly.

- explore, collect information from books, e-books, magazines, internet, etc., to appreciate the efforts of scientists made over the time, for example, Thomson, Rutherford, Bohr gave various models of atoms; Johann Dobereiner, John Alexander Newlands, Dmitri Mendeleev and Henry Moseley developed Periodic Table. Collect information about their findings and showcase it in the form of a project.
- design and develop technological devices/ innovative exhibits/ protocols, such as, use of green chemistry in day-to-day life; green chemistry kit; control of environmental pollution ( water, soil, air pollution, waste management kit etc., using eco-friendly materials and showcase it in science exhibitions/ clubs/ parent-teacher meets, online and offline.
- share/ discuss beliefs and views regarding myths/ taboos/ superstitious beliefs, by initiating an open ended debate, leading to the alignment of their beliefs to the scientifically proven facts. They may also be involved in awareness campaigns in community.
- report their observations/ findings of the activities/ experiments/ surveys in oral/written form by using appropriate technical terms/ figures/ tables/graphs, etc., honestly. They may be encouraged

- **analyses and interprets graph/figure**, such as variation of atomic radius with atomic number; variation of ionization enthalpies with atomic number; geometry of molecules etc.
- **calculates using the data given**, such as, mass per cent of different elements constituting a compound; wavelength of electromagnetic radiation; energy changes as work and heat contributions in chemical systems; enthalpy changes for various types of reactions; solubility product constant etc.
- **uses scientific conventions, symbols, chemical formulae, chemical equations as per international standards** such as, SI units; symbols and names of elements; formulae of chemical compounds; chemical equations; electronic configurations of atoms; names of organic compounds (according to IUPAC) etc.
- **measures physical quantities using appropriate apparatus**, such as, mass of chemical/object using analytical balance; volume of liquid using pipette, burette, volumetric flask, measuring cylinder; temperature using thermometer etc.
- **takes initiative to know about scientific discoveries/ inventions**, such as, fundamental particles in an atom; discovery of various atomic models; development of Periodic Table; discovery

to use ICT tools for reporting.

**\* For Children with Special Needs**

Children with special needs require to be taken along with class and it is desired to design alternate activities/ experiments keeping in view the learning objectives similar to those to the others. The teacher should take into account the specific problem of the child and plan alternate strategies for teaching- learning process. A healthy inclusive classroom environment provides equal opportunity to all the students; those with and those without learning difficulties can learn together. The measures to be adopted may include:

- developing process skills through group activities and using ICT for simulation, repeated practices and evaluation.
- assessing learning progress through different modes taking cognizance of the learner's response.
- observing of the child's engagement in multiple activities, through varied ways and levels of involvement.
- using of embossed diagram, models in the pedagogical process and learning progress.
- using of adapted equipment in observation and exploration (for example: visual output devices should have aural output and vice versa).
- using multiple choice questions to get

of VSEP; synthesis of urea R; etc.

- **appreciates the contribution of ancient chemistry of India and its role in different spheres of life** such as, ancient India knowledge of chemistry was applied in metallurgy, medicine, manufacture of cosmetics, glass, dyes, baked bricks, pottery etc.
- **realizes and appreciates the interface of chemistry with other disciplines**, such as with Physics, Biology, Mathematics, Geology, Geography; Pharmaceutical Science etc. Chemistry helps in understanding the chemical reactions happening inside the living organisms; chemical composition of rocks, soil; simple mathematical equations etc.
- **applies scientific concepts in daily life and solving problems**, such as weather patterns; manufacturing fertilisers; alkalis, acids, salts, dyes, polymers, drugs, soaps, detergents; metals; alloys; health care products; effects of pesticides; acid rain, green houses gases; use of heavy metals etc.
- **exhibits creativity in designing models using eco- friendly resources and out of box thinking in solving problems**, such as, 3-D model of sodium chloride structure; 3 D molecular models of organic molecules; models of Periodic Table; water purification; garbage

responses from children who find difficult to write or explain verbally.

management etc.

- **exhibits values of honesty/ objectivity/ rational thinking/ freedom from myth/superstitious beliefs while taking decisions, respect for life, etc.**, such as, records and reports experimental data honestly; listens to others patiently; open-mindedness; questioning attitude.
- **communicates the findings and conclusions effectively**, such as, those of experiment/ activity/ project orally and in written form using appropriate figures/ tables/ graphs/ digital forms, etc.
- **makes efforts to conserve environment** such as, causes of ozone layer depletion; reasons for water pollution; causes of soil pollution; appreciates the importance of green chemistry; responsibility as a human being to protect environment; judicious use of chemical; use of micro-scale experimental techniques wherever possible s etc.

## Pedagogical Processes and Learning Outcomes for Class XII

Suggested Pedagogical Processes	Learning outcomes
<p>The learners maybe provided with opportunities in pairs/ groups/ individually in an inclusive setup* and encouraged to –</p> <ul style="list-style-type: none"> <li>observe, compare and group materials, such as, amorphous and crystalline solids; primary, secondary and tertiary alcohols, amines; type of polymers based on source, structure, mode of polymerization and molecular force. A discussion may be facilitated to help arrive at the appropriate conclusions. Students with special needs should be given equal opportunity to participate in the discussion.</li> <li>design and carry out activities/ experiments, for example, How many pigments are present in the spinach leaves or rose flower or marigold flower? Students may be encouraged to perform the experiment with leaves of spinach, petals of flowers and find out the components present in them. Similarly functional groups in organic compounds can be identified experimentally. Learners may be encouraged to adopt micro-scale method of activities/experimentations to reduce pollution, experiment time and resources. Micro-scale method is also a safe way of experimentation. Discussion may be</li> </ul>	<p><b>The learner –</b></p> <ul style="list-style-type: none"> <li><b>differentiates technical terms /phenomena/ processes, based on properties/ characteristics,</b> such as molecularity and order of a reaction; ionic and electrical conductivity; ideal and non-ideal solutions; amorphous and crystalline solids; DNA and RNA etc.</li> <li><b>classifies materials/ phenomena/ processes, based on, properties/ characteristics</b> such as, crystalline solids on the basis of their properties ;primary, secondary and tertiary alcohols; primary, secondary and tertiary amines; various types of polymers etc.</li> <li><b>plans and conducts projects/ investigations/ experiments/ to arrive at and verify the facts/ principles/ phenomena or to seek answers to queries on their own,</b> such as, How many pigments are present in the spinach leaves or rose flower or marigold flower? What will be the amount of oxalate ions in guava fruit at different stages of ripening? What are the functional groups present in an organic compound? Whether different samples of milk contain same or different quantity of casein? etc.</li> <li><b>takes appropriate precautionary measures (do's and don'ts) while</b></li> </ul>

<p>followed by peer/ group to conclude the findings.</p> <ul style="list-style-type: none"> <li>investigate the daily life experience, such as, cleaning action of soap; tranquilizers to treat stress; antibiotics to treat infection; artificial sweetening agents for diabetics or calorie conscious people ; food preservatives prevent food spoilage; etc. Students may be encouraged to search for their composition, formulae and action. Students may also compare the cleaning capacity of various soap samples and find out which soap sample worked best.</li> <li>conduct a survey to different industries to find out the process of extraction of various metals from their ores. To conduct this survey, students may be encouraged to visit various industries such as copper, iron aluminium etc., and find out the process which industries are using for metal extraction. They can prepare a report and discuss the findings in the class.</li> <li>represent their observations/ ideas/ findings through tables/ flow charts/ concept maps/ graphs/ figures etc.</li> <li>examine the wide variety of graphs/ figures from books or e-books or internet .Students may be encouraged to draw, analyse and interpret the graphs/ diagrams such as for rate of reaction; order of reaction; effect of catalyst on</li> </ul>	<p><b>handling apparatus, chemicals during laboratory work</b> such as use of safety glasses; wearing of laboratory coat; handling chemicals safely and judiciously; handling glass wares; performs reactions with harmful gases in fuming hood; discard or disposal of chemicals and broken glass wares properly etc.</p> <ul style="list-style-type: none"> <li><b>relates processes and phenomena with causes/ effects</b>, such as, the electrical and magnetic properties of solids and their structure; physical properties of alcohol, phenol and ethers with their structures; physical and chemical reactions of aldehyde, ketones and carboxylic acids with their structures etc.</li> <li><b>explains scientific terms/ factors/ laws/ theories governing processes and phenomena</b>, such as, the terms minerals, ores, roasting, calcification ,refining etc; close packing of particles; Henry's law and Raoult's law; preparation, properties and uses of di-oxygen, ozone, chlorine and some important compounds ; allotropic forms of sulphur; properties and characteristics of <i>d</i>-block and <i>f</i>-block elements; preparation and properties of haloalkanes, haloarenes, alcohols, phenols, ethers , aldehydes, ketones etc; structure of carbohydrate, proteins and nucleic acids; types of polymers and their functions etc.</li> <li><b>draws structures of molecules/ diagrams/ flow charts/ concept map/graph/tables,</b></li> </ul>
--	--

<p>activation energy; trends in melting points, atomic radii of transition elements, ionic radii of lanthanoids; structure of various organic or inorganic compounds etc. Visually impaired students may be provided with embossed graphs/figures etc.</p> <ul style="list-style-type: none"> <li>• write formulae of simple compounds ,chemical equations, nomenclature of organic compounds etc, using paper and pen and interactive ICT simulations or games of cards.</li> <li>• select and use appropriate devices for measuring physical quantities. Students may be encouraged to find the minimum and maximum value that can be measured by an instrument and note down the readings correctly.</li> <li>• explore, collect information from books, e-books, magazines, internet, etc., to appreciate the efforts of scientists made over the time, for example, Werner showed optical and electrical differences between complex compounds based on physical measurements; Victor Grignard reported about Grignard reagent; Har Gobind Khorana worked for cracking the genetic code. etc. Collect information about their findings and showcase it in the form of a project.</li> <li>• design and develop technological devices/ innovative exhibits/ innovative</li> </ul>	<p>such as, Daniell cell, Cottrell smoke precipitator; set up of froth flotation process; Blast furnace; structure of sulphuric acid, sulphurous acid, manufacture of sulphuric acid; structures of protein, DNA etc.; flow chart for the manufacture of ammonia and extraction of metals etc ; electronic configuration of outer shell of transition elements in tabular form; properties of different type of solids in tabular form; Freundlich adsorption isotherm in graphic form; etc.</p> <ul style="list-style-type: none"> <li>• <b>derives/ writes expression for equations</b>, such as, integrated rate law for the zero order and first order reactions; Raoult's law; etc.</li> <li>• <b>analyses and interprets data/graph/figure</b>, such as interprets graph for predicting order of reaction; interprets figure showing effect of catalyst on activation energy; analyses data to explain trends in melting points of organic compounds , atomic radii of transition elements, ionic radii of lanthanoids etc.</li> <li>• <b>calculates using the data given</b>, such as, packing efficiency of different types of cubic unit cells; concentration of solutions; Henry's law constant; emf of galvanic cells using Nernst equation; calculates values for standard electrode potential ; calculates rate constant of a reaction etc.</li> <li>• <b>uses scientific conventions, symbols, chemical formulae, chemical equations as</b></li> </ul>
---	--

protocols, such as, 3-D model of sodium chloride structure, graphite, diamond; 3 D molecular models of organic compounds; DNA model etc., using eco-friendly materials and showcase it in science exhibitions/ clubs/ parent-teacher meets online and offline mode.

- share/ discuss their beliefs and views regarding myths/ taboos/ superstitious beliefs, by initiating an open ended debate, leading to the alignment of their beliefs to the scientifically proven facts. They may also be involved in awareness campaigns in community.
- report their observations/ findings of the activities/ experiments/ surveys in oral/written form by using appropriate technical terms/ figures/ tables/graphs, etc., honestly. They may be encouraged to use ICT tools for reporting.

#### \* For Children with Special Needs

Children with special needs require to be taken along with class and it is desired to design alternate activities keeping in view the learning objectives similar to those to the others. The teacher should take into account the specific problem of the child and plan alternate strategies for teaching- learning process. A healthy inclusive classroom environment provides equal opportunity to all the students; those with and those without

**per international standards** such as, SI units; symbols and names of elements; formulae of chemical compounds; chemical equations; electronic configurations of atoms; name the compounds according to IUPAC system etc.

- **measures physical quantities using appropriate apparatus**, such as mass of chemical/object using analytical balance; volume of liquid using pipette, burette, volumetric flask, measuring cylinder; temperature using thermometer etc.
- **takes initiative to know about scientific discoveries/ inventions** such as in ancient India chemistry was called *Rasayan Shastra, Rastantra, Ras Kriyaor Ras vidya.*, discovery of optical activity in certain coordination compounds; Grignard reagents; structure of DNA; cracking the genetic code etc.
- **appreciates the contribution of ancient chemistry of India and its role in different spheres of life** such as, ancient India knowledge of chemistry was applied in metallurgy, medicine, manufacture of cosmetics, glass, dyes, baked bricks, pottery etc.
- **realizes and appreciates the interface of chemistry with other disciplines**, such as with Physics, Biology, Mathematics, Geology, Geography etc . Chemistry helps in understanding the role of bio molecules in



learning difficulties can learn together. The measures to be adopted may include:

- developing process skills through group activities and using ICT for simulation, repeated practices and evaluation.
- assessing learning progress through different modes taking cognizance of the learner's response.
- observing of the child's engagement in multiple activities, through varied ways and levels of involvement.
- using of embossed diagram in the pedagogical process and learning progress.
- using of adapted equipment in observation and exploration (for example: visual output devices should have aural output and vice versa).
- using multiple choice questions to get responses from children who find difficult to write or explain verbally.

bio-system; chemical composition of rocks, soil etc

- **applies scientific concepts in daily life and solving problems**, such as role of alcohol as hand sanitizer; role of polymers ( polyester, rubber, nylon etc); antacids to treat acidity; tranquilizers to treat stress; antibiotics to treat infection; antifertility drugs to control population; artificial sweetening agents for diabetic people; food preservatives prevent food spoilage; cleaning action of soap etc.
- **exhibits creativity in designing models using eco- friendly resources and out of box thinking in solving problems**, such as, 3-D model of graphite, diamond; 3 D molecular models of organic compounds; Daniell cell; DNA model etc.
- **exhibits values of honesty/ objectivity/ rational thinking/ freedom from myth/superstitious beliefs while taking decisions, respect for life, etc.**, such as, records and reports experimental data honestly; listens to others patiently; open-mindedness; questioning attitude.
- **communicates the findings and conclusions effectively**, such as, those of experiment/ activity/ project orally and in written form using appropriate figures/ tables/ graphs/ digital form, etc.
- **makes efforts to conserve environment**, such as, judicious use of chemicals; keep surrounding clean; use of biodegradable

	soaps and polymers; use of micro-scale experimental techniques wherever possible etc.
--	---

**Development team:**

- R K Parashar, Professor, DESM, NCERT, New Delhi
- Alka Mehrotra, Professor, DESM, NCERT, New Delhi
- Ruchi Verma, Professor, DESM, NCERT, New Delhi
- Pramila Tanwar, Associate Professor, DESM, NCERT, New Delhi
- Anjni Koul, Professor, DESM, NCERT, New Delhi, **Coordinator**

# LEARNING OUTCOMES FOR THE

## PHYSICS

### HIGHER SECONDARY STAGE

#### Introduction

Science is the outcome of human endeavour to build conceptual models to understand the nature. It is a dynamic, expanding body of organized knowledge, covering newer domains of experience every day. However, the laws of science are empirical and thus never viewed as fixed eternal truths. Even the most established and universal laws of science are always regarded as provisional, subject to modification in the light of new observations, experiments and analysis.

In our country, science up to Class X is learnt as a composite subject, however at the higher secondary stage, science is introduced as separate disciplines, such as, physics, chemistry and biology. This stage of school education is crucial and challenging as it is a transition from general science to discipline-based curriculum. Students are given the option of choosing the subjects of their interest. At this stage, the students take up Physics, as a discipline, with a purpose of pursuing their future careers in basic sciences or professional courses like medicine, engineering, technology and studying courses in applied areas of science and technology.

Physics is basic to the understanding of almost all the branches of science and technology. As one goes from secondary to higher secondary stage and beyond, physics involves mainly four components, (a) mathematical base, (b) technical words and terms, whose normal English meanings could be quite different, (c) new intricate concepts, and (d) experimental foundation. Mathematics is needed in physics to develop objective description of the world around us and express our observations in terms of measurable quantities. Physics discovers new properties of particles and a name has to be created for each one. The words are picked up normally from common English or Latin or Greek, but may sometimes give entirely different meanings to these words. Physics develops intricate concepts to explain the behaviour of particles. The special nature of physics demands, apart from conceptual understanding, the knowledge of certain conventions, basic mathematical tools, numerical values of important physical constants, and systems of measurement units covering a vast range from microscopic to galactic levels. Finally, it must be remembered that entire physics is based on observations, experiments, investigations, inquiry and reasoning without which a

theory does not get acceptance into the domain of physics.

The intricate concepts of physics must be understood, comprehended and appreciated. Students must learn to ask questions like ‘why’, ‘how’, ‘how do we know it’. They will find almost always that the question ‘why’ has no answer within the domain of physics and science in general. For example, a negatively charged electron is attracted by the positive charged plate or light behaves like a wave and it is not possible to answer ‘why’. But that itself is a learning experience. On the other hand, the question ‘how’ has been reasonably well answered in physics in the case of most natural phenomena. In fact, with the understanding of how things happen, it has been possible to make use of many phenomena to create technological applications for the use of humans.

In the learning of physics, there should be stress upon the learner acquiring inquiry and process skills of science. This is necessary since the inquiry and process skills are more enduring and enable the learner to cope with the ever changing and expanding field of science and technology. Of course, this does not mean that the content can be ignored. Facts, principles, theories and their applications to understand various phenomena are at the core of physics and the curriculum must obviously engage the learner with them appropriately. However, rote learning should be discouraged. Inquiry skills should be supported and strengthened by investigative, reasoning and quantitative skills. The theoretical component of higher secondary physics should strongly emphasize problem solving, awareness of conceptual pitfalls, linkages among various concepts and critical interrogation of different topics. Narratives giving insights on the historical development of key concepts of physics should be integrated into the content judiciously. The teaching of the theoretical aspects and the experiments based on them should be closely integrated and dealt together. Well-equipped laboratories are an integral part of learning physics at Hr. Secondary stage and all students should be provided with the necessary hand-on experience of equipment and experiments given in their curriculum. Some of the experiments must be open-ended, where there are no standard procedures with expected results and there is scope for making hypotheses and interpretation of results. The experimental skills and process-skills developed together with conceptual Physics knowledge prepare the learners for more meaningful learning experiences and contribute to the significant improvement of quality of life. Various opportunities may be provided to learners to relate concepts of physics to real life situations for making learning of physics relevant and meaningful. It is also important to exploit the enormous potential of ICT in physics pedagogy for achieving curricular goals. The use of

simulations in deepening the understanding of abstract concepts of physics should be particularly explored. Assessment as, for, and of learning should be an integral part of the teaching-learning process. Schools should place much greater emphasis on co-curricular and extra-curricular activities aimed at stimulating investigative ability, inventiveness and creativity, even if these are not part of the external examination system.

There is a need to provide the learners with sufficient conceptual background of Physics which would eventually make them competent to meet the challenges of academic and professional courses after the higher secondary stage. In physics at higher secondary stage, the syllabus is arranged in units spread over two year's duration. The units are so sequenced as to provide different dimensions of physics as a discipline. The units for class XI are physical world and measurement; kinematics; laws of motion; work, energy and power; motion of a system of particles and rigid body; gravitation, properties of bulk matter; thermodynamics; behavior of perfect gas and kinetic theory; oscillations and waves. For class XII, the units are electrostatics; current electricity; magnetic effects of current and magnetism; electromagnetic induction and alternating currents; electromagnetic waves; optics; dual nature of matter and radiation; atoms and nuclei; electronic devices. The syllabus also includes content related experiments, activities and suggested investigatory projects. The core topics of physics have been identified carefully taking into account recent advances in the field, and treated with appropriate rigour and depth. Due care has been taken that the syllabus is not heavy and at the same time, it is comparable to the international standards.

### **Curricular Expectations**

At this stage learners are expected to:

1. develop interest to study physics as a discipline;
2. strengthen the concepts developed at the secondary stage to acquire firm ground work and foundation for further learning of Physics more effectively and learning the relationship with real life situations;
3. apply reasoning to develop conceptual understanding of Physics concepts;
4. realize and appreciate the interface of Physics with other disciplines
5. get exposure to different processes used in Physics-related industrial and technological applications;
6. develop process-skills and experimental, observational, manipulative, decision-making and investigatory skills;

7. synthesize various science/physics concepts to solve problems and thinking critically in the process of learning Physics;
8. understand the relationship between nature and matter on scientific basis, develop positive scientific attitude, and appreciate the contribution of Physics towards the improvement of quality of life and human welfare;
9. comprehend the contemporary knowledge and develop aesthetic sensibilities.
10. appreciate the role and impact of Physics and technology, and their linkages with overall national development.

### Class XI

Suggested Pedagogical Processes	Learning Outcomes
<p>The learners may be provided with opportunities individually or in groups and encouraged to –</p> <ul style="list-style-type: none"> <li>• explore surroundings, natural processes, phenomena and attempt to understand the various concepts of physics on their own, using the textbook and the web resources, such as PhET interactive simulations.</li> <li>• ask questions and attempt to find answers through reflection, discussion, designing and performing appropriate activities/ experiments, investigatory projects, debates, use of ICT, etc., and share their findings with each other.</li> <li>• record the observations during the activities, experiments, surveys, field trips, etc.</li> <li>• analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults</li> </ul>	<p>The learner</p> <ol style="list-style-type: none"> <li>1) <b>recognises the concepts of Physics related to various natural phenomena;</b> such as, force, momentum, mechanical properties of solids and fluids, simple harmonic motion, greenhouse effect, variation in speed of sound in different media.</li> <li>2) <b>differentiates between certain physical quantities;</b> such as, between distance and displacement; speed and velocity; rectilinear and curvilinear motions; average, relative, and instantaneous velocity and speed; stress and strain; Young’s modulus, shear modulus and bulk modulus.</li> <li>3) <b>uses International system of units (SI Units), symbols, nomenclature of physical quantities and formulations, conventions;</b> such as, common SI prefixes and symbols for multiples and sub-multiples; important constants;</li> </ol>

<ul style="list-style-type: none"> <li>• solve concept based problems given in the resources (in-text examples, exercises at the end of the chapter in textbook, Exemplar problems, etc)</li> <li>• collect information from internet about discoveries and inventions as well as newer researches and explain it in their own words</li> <li>• make creative toys/ models to further explore science concepts and deepen their understanding</li> <li>• internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, punctuality, etc.</li> </ul> <p><b>Some exemplar pedagogical processes, specific to different learning outcomes, are given below:</b></p> <ul style="list-style-type: none"> <li>– Students should be encouraged to think on their own the possible causes of various natural phenomena occurring around them. They may be engaged in a discussion within the class for recognizing the cause behind any natural phenomena.</li> <li>– Various questions may be posed before the students which need differentiation between different physical quantities.</li> <li>– Collect data from various sources such as internet, library, etc. regarding the use of SI units, symbols, convention and nomenclature for describing physical</li> </ul>	<p>conversion factors; mathematical formulae; SI derived units (expressed in SI base units); SI derived units with special names; guidelines for using symbols for physical quantities, chemical elements and nuclides; guidelines for using symbols for SI units e.g newton, pascal, joule, watt, hertz, kelvin, dimensional formulae of physical quantities.</p> <p><b>4) explains processes, phenomena and laws with the understanding of the relationship between nature and matter on scientific basis;</b> such as, need of accuracy, precision, errors and uncertainties in measurement; fundamental forces in nature – gravitational, electromagnetic, strong and weak nuclear forces; and unification of forces; various laws such as laws of motion, friction, lubrication, conservation laws, change in velocity due to acceleration, acceleration due to gravity of earth, why a seasoned cricketer draws in her/his hands during a catch; isothermal, isobaric, isochoric and adiabatic processes; formation of beats due to interference of sound waves.</p> <p><b>5) derives formulae and equations,</b> such as, dimensional formulae and dimensional equation; kinematic equations for uniformly accelerated</p>
---	---

<p>quantities. Discuss with peers and teachers, get familiarize and internalize it by using in solving numerical problems and other relevant situations in daily life.</p> <ul style="list-style-type: none"> <li>– Encourage students to practice derivation of formulae and equations taking into consideration the principles and assumptions made in deriving these formulae and equations. Derive equations to explain processes and phenomena of mechanics, heat, thermodynamics, waves and oscillations and make interpretations of the equations. Use them for solving numerical problems. They should be made to practice deriving them till they are confident.</li> <li>– Mechanics is the study of moving objects and therefore its principles can find applications in our day-to-day life rather easily. Besides relating common experiences in class rooms, students may also be advised either individually or in group to visit science parks, science centers or science museums where they can see different rotating objects viz. levers, roller coasters, energy maize, newton's cradle, rotating chairs, marry-go-round etc. to realize the application of different scientific principles such as transformation of energy, work-energy theorem, rolling motion, conservation of</li> </ul>	<p>motion; equation of path of a projectile; equation of motion of an object in a plane with constant acceleration, potential energy of a spring, proof of work-energy theorem for a variable force, work done by a torque, efficiency of Carnot engine, different harmonics in stretched strings/pipes; Bernoulli's equation, Equation for pressure of an ideal gas, equations for velocity, acceleration, energy of a particle executing SHM.</p> <p><b>6) analyses and interprets data, graphs, and figures, and draws conclusion;</b> such as, motion in a plane; analysis of the function of time to identify periodic and non-periodic motion; behavior of a material from its stress-strain curve; isothermal and adiabatic processes from P-V curves; variation of resonance peak with damping from the graph of amplitude versus angular frequency.</p> <p><b>7) handles tools and laboratory apparatus properly; measures physical quantities using appropriate apparatus, instruments, and devices;</b> such as, scales, vernier calipers, screw gauge, spherometer, beam balance, stop clock/watch, inclined plane, sonometer, resonance tube, an arrangement for determining Young's modulus of the material of a wire.</p> <p><b>8) plans and conducts investigations and</b></p>
--	---



<p>linear and angular momentum, energy, collisions, moments of inertia, strength of materials, demonstration of universal testing machine etc.</p> <ul style="list-style-type: none"> <li>– Daily life experiences of heating liquids (water or milk or any other liquid) may be suggested for understanding the concept of heat (specific) capacities and latent heat. Boyle’s law can be demonstrated using a syringe may be of 20 mL or so. Similarly for realizing Charles’ law, one can perform a controlled experiment of expanding an air-filled balloon!</li> <li>– Design activities to demonstrate and explain some ways to reduce friction, to find centre of gravity of an irregular body, to explain dynamics of rotational motion, design innovative models to illustrate hydrostatic paradox, phenomena of greenhouse effect, use technology to demonstrate phenomena of waves and oscillations.</li> <li>– Solves numerical problems based on the concepts of mechanics, heat, thermodynamics, waves, oscillations ; apply concepts of Physics to make models and design activities</li> <li>– Students may be asked to read latest science magazines such as Science Reporter, Vigyan Pragati and some day may be fixed in a week or fortnight on which students may be given time to</li> </ul>	<p><b>experiments to arrive at and verify the facts, principles, phenomena, relationship between physical quantities, or to seek answers to queries on their own;</b> such as, study the effect of detergent on surface tension of water; determine terminal velocity of a spherical body; study the effect of changing the mass of bob or length of pendulum, on its time period; study the factors affecting the rate of loss of heat of a liquid; find the coefficient of friction between surface of a moving block and that of a horizontal surface.</p> <p><b>9) communicates the findings and conclusions</b> in oral/written/ICT form that shows critical thinking, such of plotting a suitable graph between load and extension for finding force constant of a helical spring.</p> <p><b>10) exhibits creativity and out-of-the-box thinking in solving challenging physics problems;</b> such as, minimum speed required by a motorcyclist at the uppermost position to perform a vertical loop in a death well in a circus; a pillar with distributed shape at the end support more load.</p> <p><b>11) applies concepts of physics in daily life with reasoning while decision-making and solving problems;</b> such as, maximum possible speed of a car on a banked road; in which direction to hold</p>
---	--

<p>present about any new development in science. This may attract students towards learning more and more about newer researches and developments.</p> <p>– Teachers may like to give emphasis on different properties of materials when they are in bulk or in the form of a rather smaller number of particles. Examples of carbon in different allotropic forms (including nano-systems such as kajal) may be given. The importance of studying properties of materials may be emphasized for having applications in civil, mechanical and polymer engineering and science. Students may be advised to visit scientific or industrial laboratories to experience the working of universal testing machine for studying different bulk properties of solids (elastic moduli), (scanning) electron microscopes both in reflection as well as in transmission (tunneling).</p> <p>– Try to identify the concepts/areas of physics which are directly or indirectly related to other disciplines of science. Assess the relationship of those identified concepts/areas and established the nature of relationship and how these concepts/areas are dealt in other disciplines.</p>	<p>the umbrella if rain is falling vertically and wind is blowing in certain direction; during blood transfusion the height at which the blood container be placed so that blood may just enter the vein through the needle inserted in vein; a spinning ball deviates from its parabolic trajectory; changing the tension in the wire of sitar for changing frequency of sound emitted by it.</p> <p><b>12) takes initiative to learn about the newer researches, discoveries and inventions in physics;</b> such as, about space programme of India and other countries; research to increase the strength of a material, increase the efficiency of engines.</p> <p><b>13) recognises different processes used in Physics-related industrial and technological applications;</b> such as, knowledge of strength of materials used for structural design of columns, beams and supports while designing a building; hydraulic machine for lifting heavy objects; knowledge about beats for tuning musical instruments.</p> <p><b>14) realises and appreciates the interface of Physics with other disciplines;</b> such as, application of Doppler effect in medical science to study heart beats and blood flow in different parts of body; mechanism of conversion of heat into work for different heat engines;</p>
--	--

	<p>properties of materials in different branches of engineering.</p> <p><b>15) develops positive scientific attitude, and appreciates the role and impact of Physics and technology towards the improvement of quality of life and human welfare, such as, nuclear radiation techniques for diagnosis and treatment, nuclear power.</b></p> <p><b>16) exhibits values of honesty, objectivity, respect for life, rational thinking, and freedom from myth and superstitious beliefs while taking decisions, etc.</b></p>
--	--

DRAFT

## Class XII

Suggested Pedagogical Processes	Learning Outcomes
<p>The learners may be provided with opportunities individually or in groups and encouraged to –</p> <ul style="list-style-type: none"> <li>• explore surroundings, natural processes, phenomena and attempt to understand the various concepts of physics on their own, using the textbook and the web resources, such as PhET interactive simulations</li> <li>• ask and attempt to find answers through reflection, discussion, designing and performing appropriate activities/ experiments, investigatory projects, debates, use of ICT, etc., and share their findings with each other.</li> <li>• record the observations during the activities, experiments, surveys, field trips, etc.</li> <li>• analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults</li> <li>• solve concept based problems given in the resources (in-text examples, exercises at the end of the chapter in textbook, Exemplar problems, etc)</li> <li>• collect information from internet about discoveries and inventions as well as newer researches and explain it in their own words</li> </ul>	<p>The learner</p> <ol style="list-style-type: none"> <li>1) <b>recognises the concepts of Physics related to various natural phenomena;</b> such as, electrostatic force; electric and magnetic fields and flux; electrostatic potential; drift of electrons; electric current; resistance of materials; magnetic properties of materials; electromagnetic induction; reflection, refraction, interference, diffraction and polarization of light; formation of rainbow; radioactivity; <b>nuclear fusion and nuclear fission.</b></li> <li>2) <b>differentiates between certain physical quantities;</b> such as, between electric field and electric potential; electrical resistance and resistivity; potential difference and emf of a cell; interference and diffraction; wave and particle nature of light; half-life and average life; Nuclear fusion and nuclear fission; conductors and bad conductors or dielectrics.</li> <li>3) <b>uses International system of units (SI Units), symbols, nomenclature of physical quantities and formulations, conventions;</b> such as, coulomb (C), farad (F), ampere (A), ohm (<math>\Omega</math>), tesla</li> </ol>

- make creative toys/ models to further explore science concepts and deepen their understanding
- internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, punctuality, etc.

**Some exemplar pedagogical processes, specific to different learning outcomes, are given below:**

- Students should be encouraged to think on their own the possible causes of various natural phenomena occurring around them. They may be engaged in a discussion within the class for recognizing the cause behind any natural phenomena.
- Various questions may be posed before the students which need differentiation between different physical quantities.
- Collect data from various sources such as internet, library, etc. regarding the use of SI units, symbols, convention and nomenclature for describing physical quantities. Discuss with peers and teachers, get familiarize and internalize it by using in solving numerical problems and other relevant situations in daily life.
- Encourage students to practice derivation of formulae and equations taking into consideration the principles and assumptions made in deriving these formulae and equations. Derive equations

(T), degree ( $^{\circ}$ ); Becquerel (Bq).

- 4) explains processes, phenomena and laws with the understanding of the relationship between nature and matter on scientific basis;** such as, force between charges, electric field and potential due to charges; force on charges in an electric field; forces on moving charges in a magnetic field, torque on a rectangular current loop in a uniform magnetic field; eddy currents; formation of secondary rainbow; red shift and blue shift in Doppler effect; energy produced due to fusion, generation of emf by solar radiation.
- 5) derives formulae and equations,** such as, electrostatic forces and fields due to charge distributions; potential energy of system of charges; torque on a dipole in uniform electric field; effective capacitance of combination of capacitors in series and in parallel; energy stored in a capacitor; magnetic field on the axis of a circular current loop; resonant frequency in series LCR circuit; thin lens formula, de Broglie wavelength; equations for nuclear fission and fusion, beta decay, mass defect; fringe width in Young's double slit experiment.
- 6) analyses and interprets data, graphs, and figures, and draws conclusion;** such as, field due to a uniformly charged thin spherical shell is zero at all points

<p>for the force acting on charges in a magnetic field, torque on a rectangular current loop in a uniform magnetic field and make interpretation of the equations, draws ray diagram to explain formation of secondary rainbow. Use them for solving numerical problems. They should be made to practice deriving them till they are confident.</p> <p>– The applications of electromagnetic induction can easily be correlated and demonstrated in classrooms with simple models and appliances like motors (fan), generators and transformers. Visit to a power station and seeing the functioning of a turbine would be useful. Response of resistors to ac current may be explained using a fan regulator. Students may also be encouraged to design a transformer of desired properties.</p> <p>– Instructors may advise students to make a close smoke box to realize the bending of light rays (<i>laser beams can be used</i>) when they interact with a mirror (reflection) or with a glass slab or lens (for refraction). The ray diagrams can be <i>seen</i> for all the mirrors and lenses or glass slabs, and also in different media (<u>also</u> the total internal reflection). For viewing ray diagram in a prism, a hollow prism filled with highly diluted milk (or any other suspension) can be used. Some simple optical instruments like microscopes and telescopes may also</p>	<p>inside the shell; hysteresis loop; direction of induced current in the figure; position of image in ray diagrams; fringe pattern due to diffraction at single slit; V-I characteristics of a p-n junction diode; effect of potential on photoelectric current and effect of frequency of incident radiation on stopping potential for a given photosensitive material; plot of binding energy per nucleon versus mass number; logic gates.</p> <p><b>7) handles tools and laboratory apparatus properly; measures physical quantities using appropriate apparatus, instruments, and devices;</b> such as, an electroscope to detect charge on a body; power supplies; voltmeter; ammeter; multimeter; rheostat; galvanometer; meter bridge; potentiometer; sonometer; travelling microscope; concave and convex lens, prism, glass slab.</p> <p><b>8) plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, relationship between physical quantities, or to seek answers to queries on their own;</b> such as, verification of Ohm's law; determining specific resistance of a material; finding frequency of ac mains; designing an automatic traffic signal system using logic gates; study the image formation by</p>
--	---

<p>be demonstrated in classrooms.</p> <ul style="list-style-type: none"> <li>- It is rather difficult to show demonstrations or to give analogies in micro-science as the common sense does not necessarily apply in such regimes. Some thought experiments for creation of planets etc. would help in understanding radioactivity, fission, fusion, transmutation of elements etc. A possible visit to a nuclear power station would also help.</li> <li>- Students may be asked to read latest science magazines such as Science Reporter, Vigyan Pragati and some day may be fixed in a week or fortnight on which students may be given time to present about any new development in science. This may attract students towards learning more and more about newer researches and developments.</li> <li>- Try to identify the concepts/areas of physics which are directly or indirectly related to other disciplines of science. Assess the relationship of those identified concepts/areas and establish the nature of relationship and how these concepts/areas are dealt in other disciplines.</li> </ul>	<p>concave and convex lens; designing a voltage regulator circuit using zener diode; determine refractive index of a liquid using a convex lens and a plane mirror; draw I-V characteristics curves of a p-n junction diode.</p> <p><b>9) communicates the findings and conclusions</b> in oral/written/ICT form that shows critical thinking, such as, appropriately conveying the critical angle in internal reflection by drawing ray diagrams to describe it.</p> <p><b>10) exhibits creativity and out-of-the-box thinking in solving challenging physics problems;</b> such as, calculating the required range of variable capacitor of LC circuit of a radio for the radio to be able to tune over a given frequency range of broadcast band; assessing the depth of a pond in clear water using the knowledge of refractive index of water; calculating the energy released in fission or fusion process.</p> <p><b>11) applies concepts of physics in daily life with reasoning while decision-making and solving problems;</b> such as, if a certain capacitance is required in a circuit across a certain potential difference then suggesting a possible arrangement using minimum number of capacitors of given capacity which can withstand a given potential difference; selecting the appropriate wire for doing</p>
--	--

wiring at home keeping in view all considerations; use of polarized glass in spectacles; connecting LEDs properly in a circuit, using solar cells in circuits.

**12) takes initiative to learn about the newer research, discoveries and inventions in Physics;**

such as, accelerators, thermistors, electrical properties of materials, India's atomic energy programme; research on the possibility of static electricity charging electronic devices; improving magnetic bottles to keep high energy plasma in fusion under control, researches in the area of optics to increase the resolution power of microscope and telescope; newer designs of nuclear reactors.

**13) recognises different processes used in Physics-related industrial and technological applications;**

such as, using electrostatic shielding in protecting sensitive instruments from outside electrical influences; use of superconducting magnets for running magnetically levitated superfast trains; applications of optical fibers for transmission of optical signals; use of controlled chain reaction in nuclear.

**14) realises and appreciates the interface of Physics with other disciplines;**

such as, with Chemistry as various materials give rise to interesting properties in the presence or absence of electric field,



	<p>making light sensitive cells using the applications of photoelectric effect; use of atomic and nuclear physics in medicine, use of electromagnetic radiations in communication, use of optical phenomenon in entertainment.</p> <p><b>15) develops positive scientific attitude, and appreciates the role and impact of Physics and technology towards the improvement of quality of life and human welfare.</b></p> <p><b>16) exhibits values of honesty, objectivity, respect for life, rational thinking, and freedom from myth and superstitious beliefs while taking decisions, etc..</b></p>
--	---

### **Suggested Pedagogical Processes in an Inclusive Setup**

The curriculum in a classroom is same for everyone. This means all students can actively participate in the classroom. There can be some students who may face learning difficulties including language, visual-spatial, or mixed processing problems. They may require additional teaching support and some adaptation in the curriculum. By considering the specific requirements of children with special needs, a few pedagogical processes for the teachers are suggested:

- Use multisensory approach for integrating information from auditory, olfactory, tactile as well as visual sources.
- Provide learning experiences through touching objects, materials, organisms, models, etc., to experience size, shape, texture, pattern, and changes.
- Use embossed line diagrams for explaining texts, pictures, graphs and flow charts, etc.
- Use direct sensory experiences for developing concepts like temperature, volume, etc.
- Give opportunities to work with peers during experiments. Rotating partners for the entire class would be a good strategy.
- Allow students to record classroom presentation and lectures or the text in audio format.

- Label the pictures within the text, whenever possible. This can be done by the students as an activity.
- Relate the projects and experiments to real life experiences.
- Encourage group task and peer assistance for project and experiment work.
- Give the project and experiment in fewer steps and sequence the steps through visual cues. Display the examples of completed projects and experiments in classroom or laboratory for better understanding.
- Consider alternative or less difficult activities and exercises for the students, with same or similar learning objectives.
- Write all homework or assignments and laboratory procedural changes on the chalkboard. Give the student time to finish a step in an experiment and wait until the student indicates that she/he is ready for further work.
- Topics can be taught through class projects, experiments, examples, etc. Activities can be conducted through multisensory modes before explaining any theory and concept.
- Peer support can be used wherever a figure or table has to be drawn. Peer partner can draw with a carbon paper (for copying).
- Highlight and underline the key concepts.
- Provide extra time to complete an experiment and understand a concept.
- Always provide proper guidelines to arrange the task in a planned way. Make use of visual aids, graphic organisers and explain the steps of experiments and assignment repetitively till the child learns.
- Sequence maps with visual cues can be provided to the students to understand the sequence of events.

**Development Team:**

- Ashish Kumar Srivastava, Assistant Professor, DEK, NCERT, New Delhi
- Gagan Gupta, Associate Professor, DESM, NCERT, New Delhi
- R.R. Koireng, Associate Professor, Curriculum Group, NCERT, New Delhi
- Shashi Prabha, Professor, CIET, NCERT, New Delhi
- Rachna Garg, Professor, DESM, NCERT, New Delhi (Coordinator)

**LEARNING OUTCOMES FOR THE  
ECONOMICS  
HIGHER SECONDARY STAGE**

**Introduction**

At present, at the higher Secondary Stage, there are 4 textbooks in Economics. These are ‘Statistics for Economics’ and ‘Indian Economic Development’ for Class XI, and ‘Introductory Microeconomics’ and ‘Introductory Macroeconomics’ for Class XII. Thus, the course at the higher secondary stage is a combination of economic theories and their application in the real situation of Indian Economy. The application of theories may require some of the statistical tools for analysis; hence, Statistics. However, over the years, the experience gained from various researches, training programmes, field visits and analysis of assessment in the subject suggests that these four books appear to be in watertight compartments and the linkage between them is not clear to the learners. This is more pronounced in the case of ‘Statistics for Economics’ where the applicability of the statistical tools and techniques to the Indian economic issues discussed in the other three textbooks is not evident.

The issues of Indian economy and world economy may be integrated with the content in the two books. The essential tools of statistics and mathematics needed for analysis may also be integrated. The objective of such restructuring is to enable the learners to understand the relevance of the economic theories and their application by using the statistical and mathematical skills, as appropriate. The proposed structure may help the textbooks in becoming more compact while enabling the learners at higher secondary stage to acquire knowledge without sacrificing the essential skills and tools of analysis.

**Rationale**

- Economic reality in India and worldwide has undergone significant changes in the last decade.
- New issues and new ways of perceiving these issue and policies responses has emerged recently.
- There is also at the level of discipline of economics – a strong sense of introspection enforced by development in both advanced countries and Indian Economy.

- Together these necessitate relook at the way economics is to be taught and learnt at the secondary level.
- Finally with the explosion of media the discourse on the economy has reached a new level of sophistication.
- It is imperative that school students today are in a position to captured the contemporary discourse.

### Curricular Expectation

After going through the course in economics student will be able to :-

- Develop themselves as responsible citizen of the country
- Understand concepts, processes, terms, facts of economy
- Apply the knowledge of economy to take informed decision
- Describe various level of economic activities
- Understand the contemporary challenges faced by the economy
- Appreciate diversity including inclusiveness
- Develop skills to explore argue logically with reasoning, draw confusion conclusion & communicate on economic ideas & decisions.

### Inclusive Setting

Use support material for students with disabilities (divyangjan) with appropriate accommodations and formats such as tactile and Braille, videos with captions and ready to use materials available for teachers.

Suggested Pedagogical Processes	Learning Outcomes
<p>The learners should be encouraged to explore on their own or work in a team</p> <p>Formulate different types of questions to investigate into foundation of economics</p> <p>For e.g how PPC can be used to analyse economic decisions related to allocation of resources</p>	<p>Examine the foundation of an economy and inquires the basic economic problems</p> <p>Explain the nature, scope and methodology of economics and find out the difference between micro and macroeconomics</p> <p>Discuss the three central problems of an economy and how does it determines the resource allocation-what , how and for whom to produce</p> <p>Describe the movement along a PPC and</p>

	<p>opportunity cost and shifts its economy's PPC to the right or left and is caused by changes in investment, technology</p> <p>Analyse and explain how the opportunity cost influence the decision made by the consumer and producer</p>
<p>Familiarise learners with different national and international sources like Economic Survey, Reserve Bank of India-Handbook of Statistics on the Indian Economy, Report of the National Family Health Survey, United Nations Development Programme-Human Development Report and World Bank-World Development Indicators, Report by IMF etc.. The statistical tables available as Appendix in the Economic Survey would be immensely helpful in understanding various issues of Indian Economy</p>	<p>Analyses and interprets data related to various issues/events related to Indian economy</p> <p>Discuss critical issues of the Indian economy since independence</p> <p>Evaluate five year plan and the role of NITI Ayog in planning, allocation of funds to various sectors like agriculture, industry, services for the specific cases such as removal of poverty and unemployment</p> <p>Comprehends the various attributes of poverty &amp; the diverse dimensions relating to the concept of poverty and appreciates the way poverty is estimated</p>
<p>Listen to news on T.V or read newspapers to make informed judgement or prediction about the economic issues</p>	<p>Investigate the relationship between India and its neighbours</p> <p>Explain the macroeconomic events in India and neighbouring countries and visualize the economic future of India</p>

<p>Use different concepts in economic thinking for analyzing economic issues</p> <p>Collect information on various issues of Indian economy from different sources like government documents, economic survey which may be used as important inputs for understanding a particular topic. These can be displayed in classroom like clippings from newspapers and magazines relating to different topics.</p>	<p>Explain and suggest measures for the determination of income and employment</p> <p>Discuss aggregate demand and aggregate supply, propensity to consume and propensity to save (average and marginal) and measures to correct excess and deficient demand</p> <p>Discuss wage determination, the influence of demand and supply, relative bargaining strength and government policy, including the fixation of minimum wage; basic concepts relating to employment such as economic activity, worker, workforce and unemployment and distinguishes between disguised and seasonal unemployment</p> <p>Describe the role of government with respect to economic growth, full employment/low unemployment, stable prices/low inflation, equilibrium in the balance of payment, redistribution of income</p>
<p>Interpret and explain diagrams of demand and supply with respect to Indian economy and promote approaches to economic inquiry</p> <p>Explain with the help of appropriate terminology, for example extension and contraction in demand</p>	<p>Illustrate decision making and problem solving skills related to consumers satisfaction and analyse the theory of demand and supply</p> <p>Discuss consumer equilibrium with the help of indifference curve</p> <p>Draw a demand curve, supply curve and how is it used to illustrate movement, extension, contraction in demand and supply</p> <p>Explain elasticity of demand and supply</p>

<p>Use tables, diagrams and charts to promote economic thinking and understand the advantages and disadvantages of market system</p>	<p>Demonstrates inquisitiveness and raise questions related to market equilibrium</p> <p>Describe advantages and disadvantages of market economic system. Explain market failure with respect to public goods, merit and demerit goods.</p> <p>Explain market equilibrium, draw and interpret demand and supply schedules and curves used to identify disequilibrium prices and shortages (demand more than the supply) and excesses (supply more than the demand)</p>
<p>Use reports and data published by the Government sources to understand the role of government in restoring stability in the economy</p>	<p>Demonstrate the role of Government in overcoming the limitations of market system</p> <p>Explain market failure with respect to public goods, merit and demerit goods, social, external and private benefits, social, external and private cost.</p> <p>Discuss the effectiveness of government intervention in overcoming the drawbacks of a market system</p>
<p>Find out the signature of an authority on Rs. 10, 50 and 100.</p> <p>Visit banks and procure their leaflets, brochures and reports to understand the role and function of central and commercial banks. Make a table to understand the services offered by various</p>	<p>Inquires money, types of money and functions of banks</p> <p>Describe the forms, function and characteristics of money</p> <p>Discuss the role and importance of central banks and commercial banks for government, consumer and producers</p>

financial institutes	
<p>Draw and interpret diagrams of total, average and marginal with respect to product, cost and revenue. The diagrams can be drawn on blackboard, ground or walls of the school boundaries</p>	<p>Explain firms' costs and revenue goals- using total, average and marginal</p> <p>Total cost(TC), average total cost (ATC), fixed cost (FC), variable cost (VC), average fixed cost (AFC), average variable cost(AVC)S and MC</p> <p>Explain total revenue (TR), average revenue(AR) and marginal revenue (MR)</p>
<p>Prepare a table highlighting the feature of different forms of market, advantages and their disadvantages. Discuss which form of market should be promoted to ensure efficiency in your economy</p>	<p>Evaluate the forms of market to maximize consumers satisfaction and producers profit</p> <p>Explain competitive markets and use diagram to show the effect of large number of firms on price, quantity, choice and profit</p> <p>Explain monopoly markets- its characteristics, advantages and disadvantages</p> <p>Find out the features of oligopoly market</p>
<p>Discuss reports like economic survey, NSSO and other official documents, listen to the news on radio or T.V to understand fiscal policies of the government</p>	<p>Emphasize economic decisions by highlighting the role of government</p> <p>Explain budget and reason out the main areas of government spending and its impact on those areas</p> <p>Discuss the role of government in an economy through budgetary process and different types of taxes</p> <p>Discuss fiscal policy measures with respect to change in tax and spending, that cause balance or imbalance budget and calculate the size of a budget deficit or surplus</p>



	<p>Discuss monetary policy measures with respect to change in interest rates, money supply and foreign exchange rates</p>
<p>Compare the tables on GDP, human development index, gender development index of different countries , prepare a brief write up and present in the classroom</p>	<p>Communicate economic information and ideas related to National income, Human development index and sustainable development</p> <p>Explain gross domestic product (GDP) can be used to measure economic growth</p> <p>Discuss the three methods of measuring the National Income</p> <p>Describe the limitations of using GDP as an indicator of development</p> <p>Examine alternative indicator of development and use Human Development Index as a case study</p> <p>Discuss the strategies adopted for sustainable development in India</p>
<p>Read policy documents or reports presented on the three sectors of the Indian economy. Suggest measures to have more employment, low inflation, stabilize growth, gender equality and better social and economic infrastructure</p>	<p>Predict and evaluate the challenges facing Indian economy</p> <p>Explain employment, employment in the primary and organized sector in Indian context; feminization of workforce; migrant labour and decline in public sector</p> <p>Explain how is inflation is measured using the different index numbers</p> <p>Explain a few important economic challenges facing Indian economy using statistical evidence</p> <p>Discuss the state of infrastructure with</p>

	<p>respect to energy and health</p> <p>Discuss the need and main features of liberalization, globalization and privatization</p>
<p>Engage in arguments in the form of debate, discussion or one minute talk to understand the India's trend in the foreign trade</p>	<p>Analyse reasons for change and consequences of trade with other countries</p> <p>Discuss the role of multinational companies (MNCs) and the costs and benefits to their host and home countries and the role of government in regulating the economic activities in an economy</p> <p>Discuss the benefits of free trade for the consumers, producers and the economy in a variety of countries</p> <p>Differentiate between floating and the fixed system</p> <p>Analyse the demand for and supply of a currency in the foreign exchange market</p> <p>Define and explain a few important terms and concepts associated with balance of payments in Indian context</p>

**For Children with Special Needs- Different disciplines in Social Sciences at the Higher Secondary stage may require materials for better understanding of subjects.**

- In order to achieve learning Outcomes in Social Sciences, some students may require support in the form of prepared tapes, talking books/daisy books to access text; help in writing to communicate their ideas through alternative communication method such as ICT or speech; adaptation of content and activities; education aids to manage visual information; and/ or support to understand various geographical concepts and features and the environment.
- Group activities such as projects and assignments done through cooperative learning will enable students with SEN to participate actively in all classroom activities.
- For Children with Special Needs (CWSN), resources such as tactile diagrams/maps, talking books, audio-visual materials, Braille, etc. may be used. Pedagogical processes and learning outcomes in the document are not exhaustive. Teachers are expected to design and follow appropriate pedagogical processes along with assessment tasks to assess their students to continuously improve learning outcomes.

**For Visually Impaired Children**

- Verbal content including geographical terms and concepts, for example, latitude, longitudes, directions etc. This may be followed for other subjects.
- Graphic and visual descriptions like map reading, graphs, diagrams, paintings, inscriptions, symbols and monumental architecture etc.
- Making observations of environment and space- land, climate, vegetation and wildlife, distribution of resources and services.
- Reference material like spelling lists, study questions, important references, and other information students may need to refer can be provided in enlarged, tactile or embossed formats to redrawn with proper contrasts.

**For Hearing Impaired Children**

- Understanding of terminologies/technical terms, abstract concepts, facts, comparisons, cause effect relationships and chronology of events etc.
- Reading heavy text (textbooks/source materials) especially in History and Civics.
- Making inferences from the text.

### **For Children with Cognitive Impairments, Intellectual Disability**

- Accessing written work, illustrations, charts, graphs and maps (especially for students with cognitive processing problems- visual spatial/visual processing/ perceptual)
- Extracting relevant information from bulk information. Text heavy subjects like History are a challenge for students with reading difficulties
- Remembering the sequence of events and connecting them
- Understanding and interpreting abstract concepts

Generalisation and relating information in the textbooks with the environment or society.

DRAFT

**LEARNING OUTCOMES FOR THE  
GEOGRAPHY  
HIGHER SECONDARY STAGE**

Geography is introduced as an elective subject at the higher secondary stage. After ten years of general education, students branch out at the beginning of this stage and are exposed to the rigours of the discipline for the first time. Being an entry point for the higher education, students choose geography for pursuing their academic interest and, therefore, need a broader and deeper understanding of the subject. For others, geographical knowledge is useful in daily lives because it is a valuable medium for the education of young people. Its contributions lie in the content, cognitive processes, skills and values that geography promotes and thus helps the students explore, understand and evaluate the environmental and social dimensions of the world in a better manner.

Since geography explores the relationship between people and their environment, it includes studies of physical and human environments and their interactions at different scales — local, state/region, nation and the world. The fundamental principles responsible for the varieties in the distributional pattern of physical and human features and phenomena over the earth's surface need to be understood properly. Application of these principles are taken up through selected case studies from the world and India. Thus, the physical and human environment of India and study of some issues from a geographical point of view have been covered in greater detail. Students are exposed to different methods used in geographical investigations.

**Curricular Expectations**

At this stage learners are expected to:

- explain the terms, key concepts and basic principles of geography;
- Search for, recognise and understand the processes and patterns of the spatial arrangement of the natural as well as human features and phenomena on the earth's surface;
- Understand and analyse the inter-relationship between physical and human environments and their impact;
- Apply geographical knowledge and methods of inquiry to new situations or problems at different levels — local/regional, national and global;

- Develop geographical skills, relating to collection, processing and analysis of data/ information and preparation of report including maps and graphics and use of computers wherever possible;
- Develop Geospatial skills i.e. Remote Sensing (RS), Geographical Information System (GIS) and Global Navigation Satellite System (GNSS) to understand and analyse various geographical concerns;
- Utilize geographical knowledge in understanding issues concerning the community such as environmental issues, socio-economic concerns, gender and become responsible and effective member of the community.

DRAFT

**Class XI**

Suggested Pedagogical Processes	Learning Outcomes
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to —</b></p> <ul style="list-style-type: none"> <li>• Teacher may initiate discussion by asking students about topic and themes they might have studied up to class X in Geography.</li> <li>• Teacher may narrate stories of ancient philosophers of the world who have contributed in the area of Geography and discuss about nature of Geography and its importance in different areas relevant to the present day world.</li> <li>• Students may be asked to collect newspaper clippings on different topics and teacher may help them to understand inter-linkages of physical geography with other subjects i.e. natural and social sciences.</li> <li>• Models, diagrams, audio-visual materials, maps, atlas, satellite images, etc. may be used to explain about natural features and phenomena.</li> <li>• Learner may be encouraged to identify</li> </ul>	<p><b>The learner-</b></p> <ul style="list-style-type: none"> <li>• <b>Explains nature of Geography and its importance</b></li> <li>• <b>Draws inter-linkages of physical geography with other disciplines</b></li> <li>• <b>Identifies natural features, and phenomena, on the earth surface and on maps and diagrams, e.g. landforms, rocks, climate, drainage, ocean floor configuration, etc.</b></li> </ul>

<p>physical features of India/ State,</p> <ul style="list-style-type: none"> <li>• Diagrams on black board, animation, or audio-visual materials may be used to explain processes like earthquakes, erosion, landslides, diastrophism, etc.</li> <li>• Students may identify the natural disasters which may affect their state and prepare a mitigation plan for their locality.</li> <li>• Quiz, puzzles, games, MCQs may be given to identify and differentiate between phenomena and processes.</li> <li>• Locate the areas in India which are affected by cyclones and anti-cyclones during different seasons.</li> <li>• The world map (Physical, Political), Globe, Atlas, Map of India/ Region may be used in the classroom to discuss about spatial patterns of features and phenomena.</li> <li>• The outline maps of the world/ India/ State/ Region/ may be given to show spatial distribution of features and phenomena.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Classifies processes which bring changes on the earth surface</b> i.e. endogenic &amp; exogenic, earthquake, volcanic eruption, weathering, erosion, mass wasting, etc.</li> <li>• <b>Distinguishes between natural phenomena and processes on the basis of their characteristics</b> e.g. ocean currents, rocks and minerals, plate boundaries, earthquake waves, cyclone and anticyclone</li> <li>• <b>Shows spatial distribution of natural features and phenomena on the map</b> e.g. relief, earthquake, ocean currents, climates, etc.</li> <li>• <b>Describes technical terms and theories</b> related to origin of the universe and earth, continental drift theory, plate tectonic, climatic regions, etc.</li> </ul>
--	--



<ul style="list-style-type: none"> <li>• With the help of sketches, photographs, audio-visuals, Dictionary of Geography, maps, etc. theories and technical terms related to different topics may be discussed.</li> <li>• Models may be used in the classroom to explain concepts. Students may be asked to demonstrate model in the group. Local available resources may also be used to explain the concepts.</li> <li>• Students may be encouraged to make and demonstrate simple weather instruments.</li> <li>• Students may be asked to locate different heat regions on the world map and teacher may explain their characteristics with reference to biodiversity.</li> <li>• Students may be encouraged to collect information about loss of biodiversity from people, newspapers, internet sources, magazines, etc. of their own area and sensitize others towards its conservation.</li> <li>• Data related to temperature, rainfall, landforms, resources, etc. may be displayed in the classroom through maps, diagrams, graphs, table etc.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Demonstrates through models or diagrams e.g.</b> interior of the earth, structure of the atmosphere, hydrological cycle, movement of Plates, drainage patterns, etc.</li> <li>• <b>Justifies importance of biodiversity</b> by giving examples of flora and fauna from local to global</li> <li>• <b>Represents geographical information in suitable forms e.g. maps, diagrams, graphs, table, etc.</b></li> <li>• <b>Demonstrates Geospatial skills (RS, GIS, and GNSS) as well as interprets Topographic sheets, Weather maps, etc.</b></li> <li>• <b>Illustrates decision making and problem solving skills, e.g.</b> initiatives at local level to minimize environmental</li> </ul>
---	--

<ul style="list-style-type: none"> <li>• Students may be given data related to humidity, rainfall, temperature, cyclone, disasters etc. to represent in suitable form.</li> <li>• Special features of Topographic sheets, Weather maps, Remote Sensing imageries, any free GIS software, and GPS/Smart mobile phone may be used to discuss in the classroom.</li> <li>• School Bhuvan NCERT Geoportal, IMD website, etc. may be used to discuss about Remote Sensing Imageries, GIS, and weather maps.</li> <li>• Student may take initiatives to make aware people of their own locality towards environmental pollution such as water, air, noise, etc.; global warming, climate change and their impact on the life; arrange mock drills with peers to mitigate natural hazards and disasters, and prepare placards, slogans, charts, posters, etc.</li> </ul>	<p>pollution, mitigation of natural hazards and disasters and combat climate change.</p>
---	--

**Class XII**

Suggested Pedagogical Processes	Learning Outcomes
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to —</b></p> <ul style="list-style-type: none"> <li>• Make a list of elements which human beings have created through their activities on the stage provided by the physical environment.</li> <li>• Discuss how physical environment has been modified by the human beings and vice versa.</li> <li>• Collect examples of naturalisation of humans and humanisation of nature</li> <li>• Correlate various fields of human geography with other disciplines, for example, population geography with demography, historical geography with history, geography of tourism with tourism and travel management, political geography with political science etc and observe its close interface with these disciplines in order to explain human elements on the surface of the earth.</li> <li>• Discuss how various geographical, economic, socio cultural factors affect the distribution of population, settlement,</li> </ul>	<p><b>The learner —</b></p> <ul style="list-style-type: none"> <li>• <b>Explains nature of human geography and its importance</b></li> <li>• <b>Draws interlinkages of Human Geography with other disciplines</b></li> <li>• <b>Analyses the interrelationship between physical and human environment and</b></li> </ul>

<p>trade in India and the world</p> <ul style="list-style-type: none"> <li>• Observe the urban and rural settlement patterns on satellite images, topographic sheets, photographs, etc. collected from India and the world and classify them on various criteria.</li> <li>• Gather information about types of economic activities e.g. agriculture, mining, manufacturing, trade and commerce from varied sources from the world and India ; settlement types; population composition, growth, distribution ,etc. and discuss their characteristics with the peer.</li> <li>• Study features of demographic transition theory, Malthus theory and write down the observations in their own words.</li> <li>• Teacher may encourage students to discuss about criteria for Human Development Index and status of their own State/ India.</li> <li>• Geography dictionary and textbooks may be used to understand technical terms.</li> <li>• Audio-visual materials, case studies, narratives may be used to discuss change in migration, agricultural practices, development of transport and</li> </ul>	<p>their impact from local to global</p> <ul style="list-style-type: none"> <li>• <b>Recognise spatial pattern</b> of natural and human phenomena</li> <li>• <b>Compare and contrast</b> various economic activities, trade, population, settlement, transport etc</li> <li>• <b>Describe technical terms and theories</b> related to population, Human Development Index etc</li> <li>• <b>Explain cause and effect relationship</b></li> </ul>
---	--

<p>communication , trade practices over time and space in India and the world.</p> <ul style="list-style-type: none"> <li>• Various data related to population, production, rainfall, etc. may be given to find out central tendency as it provides the value that is an ideal representation.</li> <li>• Data may be provided to prepare line graph, bar diagram, pie diagram, flow chart, thematic maps, etc.</li> <li>• Shows the areas of varied activities, distribution of minerals, agriculture, population, transport routes etc. on the outline map of India and the world. Indicate the headquarters of regional trade blocks on the world map.</li> <li>• School Bhuvan NCERT portal may be used to draw online digital thematic maps based on population , environmental issues, etc. at local/state/ India</li> <li>• Opportunities may be provided to draw digital maps of any area / neighbourhood on any free GIS Software/ School <i>Bhuvan NCERT</i> portal.</li> <li>• Use computers for processing of data. Analyse interactive thematic maps of India e.g. agriculture, minerals, industry, etc., on School <i>Bhuvan NCERT</i> portal.</li> </ul>	<p>on human environment interaction such as population distribution, migration, cropping patterns, transportation &amp; communication, trade, etc.</p> <ul style="list-style-type: none"> <li>• <b>Calculate statistical data and represent data</b> in the suitable form e.g. map, diagram, table etc</li> <li>• <b>Exhibits map skills by</b> drawing manually or digitally such as location, interpretation and analysis</li> <li>• <b>Demonstrates Geospatial Skills (RS, GIS, GNSS) for geographical studies at Global/Regional/Local level.</b></li> </ul>
---	--

<ul style="list-style-type: none"> <li>• Raise questions on environmental pollution, urban-waste disposal, migration, problem of slums, land degradation. Identify the factors causing these problems and decide creatively and critically to arrive at solution(s)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Exhibit problem solving and decision making ability</b> e.g. environmental and socio-economic issues</li> </ul>
--	---

### Suggested Pedagogical Processes in an Inclusive Setup

The curriculum in a classroom is same for everyone. This means all students can actively participate in the classroom. There may be some students who have learning difficulties including language, visual-spatial or mixed processing problems. They may require additional teaching support and some adaptation in the curriculum. By considering the specific requirements of children with special needs, few pedagogical processes for the teachers are suggested below:

- Use detailed verbal descriptions of graphical representations and pictures like maps. These can also be made tactile with proper contrasts.
- Use models and block paintings.
- Use examples from everyday life for explaining various facts/concepts.
- Use audio visual materials like films and videos to explain abstract concepts; for example, coordinate system, structure of atmosphere, etc.
- Organise group work involving debates, quizzes, map reading activities, etc.
- Organise excursions, trips and visits to places (educational tour).
- Involve students in exploring the environment using other senses like smell and touch.
- Give a brief overview at the beginning of each lesson.
- Provide photocopies of the relevant key information from the lesson.
- Highlight or underline the key points and words.
- Use visual or graphic, flow charts, posters, etc.
- Organise group work involving activities like cut and paste, and make use of pictorial displays, models, pictures, posters, flash cards or any visual items to illustrate the facts and

concepts.

- Plan occasions with real life experiences.
- Use films or documentaries and videos.
- Use magazines, scrapbooks and newspapers, etc., to help learners understand the textual material.
- Draw links with what has been taught earlier.
- Make use of multisensory inputs.
- All examples given with pictures in the textbook can be narrated (using flash cards, if required).
- Maps should be enlarged and colour coded.
- Asking relevant questions frequently to check how much the learner has learnt as it helps in assimilating information.

DRAFT

**For Children with Special Needs- Different disciplines in Social Sciences at the Higher Secondary stage may require materials for better understanding of subjects.**

- In order to achieve learning Outcomes in Social Sciences, some students may require support in the form of prepared tapes, talking books/daisy books to access text; help in writing to communicate their ideas through alternative communication method such as ICT or speech; adaptation of content and activities; education aids to manage visual information; and/ or support to understand various geographical concepts and features and the environment.
- Group activities such as projects and assignments done through cooperative learning will enable students with SEN to participate actively in all classroom activities.
- For Children with Special Needs (CWSN), resources such as tactile diagrams/maps, talking books, audio-visual materials, Braille, etc. may be used. Pedagogical processes and learning outcomes in the document are not exhaustive. Teachers are expected to design and follow appropriate pedagogical processes along with assessment tasks to assess their students to continuously improve learning outcomes.

**For Visually Impaired Children**

- Verbal content including geographical terms and concepts, for example, latitude, longitudes, directions etc. This may be followed for other subjects.
- Graphic and visual descriptions like map reading, graphs, diagrams, paintings, inscriptions, symbols and monumental architecture etc.
- Making observations of environment and space- land, climate, vegetation and wildlife, distribution of resources and services.
- Reference material like spelling lists, study questions, important references, and other information students may need to refer can be provided in enlarged, tactile or embossed formats to redrawn with proper contrasts.

**For Hearing Impaired Children**

- Understanding of terminologies/technical terms, abstract concepts, facts, comparisons, cause effect relationships and chronology of events etc.
- Reading heavy text (textbooks/source materials) especially in History and Civics.
- Making inferences from the text.



### **For Children with Cognitive Impairments, Intellectual Disability**

- Accessing written work, illustrations, charts, graphs and maps (especially for students with cognitive processing problems- visual spatial/visual processing/ perceptual)
- Extracting relevant information from bulk information. Text heavy subjects like History are a challenge for students with reading difficulties
- Remembering the sequence of events and connecting them
- Understanding and interpreting abstract concepts

Generalisation and relating information in the textbooks with the environment or society.

DRAFT

## **LEARNING OUTCOMES FOR THE HISTORY**

### **HIGHER SECONDARY STAGE**

Through a graduating scheme that progresses from the elementary stage onwards, the basis of teaching and learning of history at this stage becomes one of historiography-based approach to develop an innate understanding of the subject both across domains as well as time and space. Therefore, the syllabus in this instance not only re-affirms its emphasis on the fundamental idea of how historical knowledge is constituted through critical appraisals and re-appraisals of sources, but also takes the students on a journey along various themes to demonstrate it in actuality both in relation to the World (Class XI) and Indian (Class XII) history. Thus, the themes have been organised in such a manner that the students instead of digesting only the grand narratives of history as it usually happens in case of chronological histories, find in them ample opportunities to delve deeper into their many-sided realities to uncover for themselves the general process of historical development. This rationale envisaging history as a critical discipline that relies on certain rigorous methods of source-based enquiry to learn about the past at this stage can only be justified from a set of connected learning outcomes that are outlined hereafter. It thus goes without saying that these learning outcomes are integrally linked to their learning objectives as set in terms of curricular expectations below.

#### **Curricular Expectations:**

- As the first principle of studying history at this stage, the curriculum expects the students to develop an understanding of how historians write history. Thus, to start with, they are expected to appreciate the way historians follow the trails that lead to the past by way of selecting, assembling and then reading their sources critically. Secondly, as a part of this process, they are expected to figure out what different types of sources can reveal and what they cannot. Finally, they are expected to acquire an overall understanding of how the historians analyse different types of sources, the various problems and difficulties they encounter

while interpreting each type of source, and at the end, the way they draw a larger picture of the past by connecting different events and processes.

- Secondly, having gone through the process of studying history through a thematic approach, the students are expected to have a capacity of relating and comparing developments in different situations, understanding connections between similar processes located in different time periods, and finding out the contributions of various methods of social inquiry which feed into historical investigations. In addition, the students are also expected to have an idea of the specific debates that surround each theme even as they acquire a sense of the wider historical processes, which connect them.
- Finally, the students are also expected to understand the utility of different pedagogical tools and techniques such as maps, timelines, flow-charts, pictorial illustrations, numbering of figures, citations, colour coding different activities and use of proper terms and concepts that are innate to delineating history and use them appropriately.

## Class XI

Suggested Pedagogical Processes	Learning Outcomes
<p><b>The teaching and learning processes in regard to different themes outlined for this class may follow the pedagogical steps as indicated below:</b></p> <ul style="list-style-type: none"> <li>➤ It is imperative for each theme to be discussed with the help of an appropriate map. Some of these maps have been provided in the textbook theme-wise. However, a general World Map, showing physical features, broad geographical regions and current political boundaries will help in better grasping the developments in world history.</li> <li>➤ While discussing a particular theme with the help of such a map, it will be instructive to point out the influence of given geographical conditions on the specific historical developments. For example, while discussing the ‘views on the origin of human beings’ or the ‘rise of early urban societies’, it will be necessary to discuss the role of hills and caves as well as forests and river valleys in shaping such developments.</li> <li>➤ Maps also facilitate an easier comprehension of the changing dynamics of political history such as the rise, growth and decline of empires, relations between states, geographical explorations, colonisation and confrontations of cultures, history of displacements, nature of trade and</li> </ul>	<p><b>With the completion of their study of different themes outlined for this Class, the students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Demonstrate their understanding of the various theories of human evolution.</li> <li>• Identify the various anatomical structures that are associated with the development of the human species.</li> <li>• Explain the various stages of evolution of human societies.</li> <li>• Elucidate the progress of human civilisation with the growth of city life.</li> <li>• Explain the connection between the growth of human civilisation and the tradition of writing.</li> <li>• Explain the phenomena of the rise, growth and fall of Empires in specific reference to the Roman and the Mongol Empires.</li> <li>• Explain the circumstances leading to the birth and growth of religions and the parts they played in shaping the course of history by giving rise to new ideas,</li> </ul>

<p>commerce, growth of urbanisation and industrialisation, spread of religions and various paths of modernisation taken by different nations and regions.</p> <ul style="list-style-type: none"> <li>➤ Timelines are other important pedagogical tools, which enable students to grasp developments in reference to time and place. Such timelines can be prepared for specific events such as the ‘industrial revolution or for particular period like ‘Europe from the 9<sup>th</sup> to 16<sup>th</sup> century’ when feudalism held sway over its western part or for a dynastic account like that of the Mongols or even for a particular aspect of history like ‘trends in ideas, literature and arts’.</li> <li>➤ Flow-charts are particularly useful in simplifying complex phenomena such as the ‘tools used by hunter-gatherers for different activities’ or the ‘organisational structure of the Roman state’ or ‘humanism’ as a philosophical system.</li> <li>➤ Pictures and discussions held around them such as the ‘renaissance paintings’ or ‘slave trade’ or religious structures like ‘churches and cathedrals’ clear up ideas associated with their respective historical developments.</li> <li>➤ Finally, use of fact-sheets, debates and group-discussions on such issues as the ‘uses of writing’, ‘the institution of slavery’, ‘decline of feudalism’ and notions of ‘renaissance’, ‘industrial revolution’ and ‘modernisation’ will be of great help in</li> </ul>	<p>institutions, cultural traditions and through wars and peace in reference to religions such as Christianity and Islam.</p> <ul style="list-style-type: none"> <li>• Make assessments of prominent historical figures like Julius Caesar and Genghis Khan, whose contributions to the shaping of history of their times make important case-studies.</li> <li>• Explain important historical phenomena like feudalism, renaissance and reformation, geographical discoveries and confrontation of cultures happening on account of such discoveries and subsequent colonisation and the debates surrounding these phenomena.</li> <li>• Demonstrate an understanding of the 14<sup>th</sup> century crisis and the rise of the nation states in Europe.</li> <li>• Display an understanding of the innovations and the technological changes that came about in 18<sup>th</sup> and 19<sup>th</sup> century England and the debates surrounding the idea of the Industrial Revolution there.</li> <li>• Demonstrate an understanding of the concept of modernisation and its application in various forms in East Asia during the 19<sup>th</sup> and 20<sup>th</sup> centuries.</li> </ul>
---	---

fostering understanding of world history.	
---	--

**Measuring the Above-stated Learning Outcomes based on Competency-based Assessments as exemplified below:**

- Did the human species originate in Africa? Or, did they originate in multiple regions of the Earth? Which of these theories is historically more sustainable in terms of the evidences we have? (An essay-type question that will evaluate analytical competency.)
- Which of the following was not an outcome of bipedalism?
  1. Freer hands
  2. Upright walking
  3. Energy efficiency in walking
  4. Energy efficiency in running
 (It is a multiple-choice type question that will evaluate cognitive ability.)
- Is it possible to explain the archaeological remains of the past hunting and gathering societies using our knowledge of the present-day hunters and gatherers? Give reasons for your answer. (A short-answer type question that will evaluate reasoning ability.)
- How far did the geography of the Mesopotamian region help in the development of an urban civilisation in the Middle East? Elucidate its historical significance. (An essay-type question that will evaluate reflective understanding.)
- The tradition of writing in Mesopotamia cannot be associated with
  1. Need to keep records of transactions
  2. Need to represent verbal communication in tangible form

3. Definitive progress of human civilisation

4. Mass literacy

(It is a multiple-choice type question that will evaluate the ability to draw inference.)

- Explain the reasons leading to the collapse of the Roman Empire in the West by the 5<sup>th</sup> century CE? (A short-answer type question that will evaluate the ability to link cause and effect.)
- Account for the rise and expansion of Islam between 600 and 1200 CE. (An essay-type question that will evaluate understanding of connection between a spiritual aspiration and temporal power.)
- Make an assessment of Genghis Khan as an empire builder during the 13<sup>th</sup> and 14<sup>th</sup> centuries CE. (An essay-type question that will evaluate the ability to make an assessment based on an understanding of the biographical approach to writing history.)
- Explain the role of Christianity in ensuring the entrenchment of feudalism in medieval Europe. (A short-answer type question that will evaluate the ability to explain a complex historical phenomenon like feudalism.)
- Law was a popular subject of study in the Italian universities during the 11<sup>th</sup> and 12<sup>th</sup> centuries because
  1. Commerce was the chief activity in those cities
  2. There was an increasing demand for lawyers and notaries
  3. Large scale trade required interpretation of rules and written agreements
  4. Feudalism ensured large scale litigation

(It is a multiple-choice type question that will evaluate contextual understanding of systems and processes.)

- The discovery of the sea-route to America led to the obliteration of the local civilisations. Comment. (A short-answer type question that will evaluate the ability to explain a complex historical phenomenon like confrontation of cultures.)
- Britain was the first country to experience modern industrialisation. Why? (A short-answer type question that will evaluate the ability to explain a complex historical phenomenon like industrial revolution.)

- Japanese scholars use the term ‘emperor system’ because
  1. The Emperor was considered a direct descendant of the Sun Goddess
  2. The Emperor established the system of administration
  3. The Emperor was an integral part of the system of administration
  4. The Emperor was shown as the leader of westernisation

(It is a multiple-choice type question that will evaluate contextual understanding of systems and processes.)

## Class XII

Suggested Pedagogical Processes	Learning Outcomes
<p><b>The pedagogical processes outlined for employment in case of Class XI are also applicable in this Class. In addition, the following schemes can also be adopted:</b></p> <p>➤ To set the ball of teaching and learning of a theme rolling, it will be of great help to first provide a ‘broad overview’ of the theme.</p> <p>For example, if the theme relates to ‘Harappan Culture’, a broad overview of the same, encompassing ‘where and when this culture flourished’, ‘how did we come to know about the existence of this culture’, ‘what are the important archaeological findings which inform us about this culture’, ‘what was its geographical extent’, ‘how long did it thrive’, and ‘what were the probable reasons for which it declined’, can help in going back in</p>	<p><b>With the completion of their study of different themes outlined for this Class, the students will be able to:</b></p> <p>illustrate how archaeological excavations are undertaken and their findings are interpreted by scholars to reconstruct the past.</p> <p>trace India’s history to its earliest times based on the various archaeological findings from the banks of the Indus river and throw light on its characteristic features.</p> <p>illustrate how inscriptions are deciphered and interpreted by historians and explain the way in which the political and economic</p>



<p>time with a sense of history.</p> <p>➤ The next important step will be to focus on that significant aspect of the theme which stands out as its most important historical dimension. This can be labelled as ‘the story of discovery’.</p> <p>For example, if the theme is about the ‘Mughal Court’ then the most significant aspect of it will be the ‘account of the production of court chronicles and their subsequent translation and transmission’ without which we cannot reconstruct its history. So, from the point of view of teaching and learning of this theme, the ‘story of discovery’ will be the account of the court chronicles.</p> <p>➤ The third step in this process will be that of selecting and presenting ‘excerpts’ from that which we have identified as the ‘story of discovery’ or in other words which form the key ‘source’ for the study of that theme.</p> <p>For example, if our theme is ‘Colonialism and Rural Society in India’ then we can select ‘excerpts’ from Firminger’s <i>Fifth Report</i> or Francis Buchanan-Hamilton’s <i>Accounts</i> or the Deccan</p>	<p>history of India from the 4<sup>th</sup> century BCE to the 5<sup>th</sup> century CE (commensurate with the Mauryan to the Gupta period) has been made based on the interpretations of the Asokan inscriptions and the Gupta period land grants.</p> <p>emonstrate an understanding of various issues involved in the reconstruction of social history and how analysis of textual sources help in doing so especially in reference to the Mahabharata.</p> <p>Discuss major religious developments in ancient India and explain how different types of sources including that of art, architecture and sculptures are used to trace these developments, particularly in reference to Buddhism.</p> <p>Discuss developments in agrarian relations in India during the 16<sup>th</sup> and the 17<sup>th</sup> century based on the official account as provided by the Ain-i-Akbari and also explain the need to supplement the said official account with other sources.</p>
--	---

<p>Riots' <i>Report</i> and see how these sources help us in reconstructing the history of colonial impact on India's rural society during the late 19<sup>th</sup> century and 20<sup>th</sup> century.</p> <p>➤ The fourth and the most important step will then be to examine these 'excerpts' or the sources more closely instead of taking these on their face value to find out if the story which has come out of it is historically correct. The best method of doing so will be through discussions on: (a) the nature of the sources, (b) the individuals, who have left behind these sources and their stations in life and motives, (c) what information other contemporary evidences provide us, (d) the ways in which we can interpret these evidences, and (e) the kind of conclusions which we can draw from these evidences.</p> <p>➤ As a time-tested pedagogical process, 'projects', either carried out individually or in groups, can also be undertaken on various themes to promote creative learning among students. Such projects could involve activities like (a) documentation of oral testimonies of local personalities such as freedom fighters, (b) collection of material from local archives, newspaper offices and private repositories in relation to various themes, (c) preparing maps, flow-charts,</p>	<p>display their familiarity with the political history of medieval India particularly in reference to the Mughals and provide an understanding of how court chronicles and other sources are used to reconstruct such histories.</p> <p>discuss the ways in which architecture – such as that of temples, forts and irrigation facilities – is used as source material to reconstruct history and explain the relationship between architecture and the political system particularly in reference to the Vijayanagara Empire.</p> <p>discuss the ideas and practices of the Bhakti-Sufi saints and along with that demonstrate their familiarity with the religious developments in India during the medieval period.</p> <p>provide an appraisal of their familiarity with travellers' accounts – such as that of Alberuni, Ibn Batuta and Bernier – and how such accounts have been interpreted and used by historians as sources of social history.</p>
--	--

<p>timelines, fact-sheets etc.</p> <p>➤ Organising study-tours is another pedagogical tool that is usually employed as a robust learning method. There are many lesser-known and well-known historical sites scattered over the length and breadth of India, which can be visited to learn the significance of various themes whether ancient, medieval or modern. Important among these places could be (a) sites of archaeological excavation (to learn how excavations are carried out), (b) museums attached to archaeological sites (to learn about the nature, characteristics and significance of archaeological artefacts), (c) historical monuments which could be of political, social or religious significance, (d) port towns, heritage villages, forts and fortresses, historical gardens, hill towns, historical parts of cities, old palaces, canals of historical importance, court complexes, police stations, government offices etc.</p> <p>➤ Finally, there could be school-level activities such as (a) organising exhibitions to provide an opportunity to students to showcase their activities and understanding of various themes of the World and Indian history, (b) organising debate and essay competitions to let students delve into the finer aspects of historical developments such as on ‘rise of communalism’, ‘written constitution’,</p>	<p>discuss the changes which colonialism brought about in India during the late 18<sup>th</sup> and 19<sup>th</sup> centuries and how these changes affected the lives of zamindars, peasants and artisans living in India’s countryside.</p> <p>explain the limits of using official sources for understanding the lives of people especially in the colonial context.</p> <p>discuss the events associated with the Revolt of 1857-58, how these events were recorded and subsequently re-interpreted.</p> <p>explain the connections between colonialism and the building of new urban centres in the 18<sup>th</sup> and 19<sup>th</sup> century India and demonstrate their familiarity with the making of such centres in Kolkata, Chennai, Mumbai and Delhi.</p> <p>demonstrate their familiarity with the important movements that are associated with India’s struggle for freedom from 1918 to 1948 and an understanding of the nature of</p>
---	---

<p>‘efficacy of five-year plans for national development’, ‘relevance of satyagraha’, and ‘drain of wealth under colonial rule’, (c) enacting plays on such themes as ‘non-cooperation movement’, ‘civil-disobedience movement’, and ‘quit-India movement’, and (d) making posters and paintings and organising quizzes and philatelic competitions so as to encourage students to develop their own understanding of history and construction of historical knowledge.</p>	<p>leadership which Mahatma Gandhi provided to these movements.</p> <p>Discuss how historians read and interpret newspaper reports, diaries and letters to use these as historical sources to reconstruct the history of India’s freedom movement and also understand the nature of Gandhian politics and leadership.</p> <p>Discuss the events that are associated with the story of India’s partition on account of the success of communal politics during the last decade of the nationalist movement using the oral testimonies of those who lived through those eventful years and point out both the possibilities and limits of using such sources.</p> <p>Demonstrate their familiarity with the history of the early years after India’s independence and how these were shaped as the founding ideals of the new nation state were debated in the Constituent Assembly and a constitution came into being.</p>
---	---

**Measuring the Above-stated Learning Outcomes based on Competency-based Assessments as exemplified below:**

- Evaluate archaeological findings as a dependable source of historical reconstruction. To what extent do such findings help us in understanding the Harappan civilisation? (An essay-type question that will evaluate analytical competency.)

- Which of the following are perhaps the most distinctive artefacts of the Harappan civilisation?

1. Beads
2. Weights
3. Seals
4. Blades

(It is a multiple-choice type question that will evaluate cognitive ability.)

- Between the 6<sup>th</sup> and the 4<sup>th</sup> centuries BCE, Magadha became the most powerful Mahajanapada. Why? (A short-answer type question that will evaluate a student's reasoning ability.)

- Give examples of written sources from the 4<sup>th</sup> century BCE to the 5<sup>th</sup> century CE and elucidate their historical significance. (An essay-type question that will evaluate students' reflective understanding.)

- One finds many regional variations in the ways the text of the Mahabharata has been transmitted over the centuries. This indicates

1. Difference of opinion among Sanskrit and non-Sanskrit works on the principal events of the Mahabharata
2. Complex processes that shaped early social histories through dialogues between dominant traditions and local practices
3. Difficulty in true to the form transmission of the original Sanskrit text over long distances over a long period of time
4. Sanskritic traditions were more normative looking for an idealistic society that were at variance with regional traditions

(It is a multiple-choice type question that will evaluate the ability to draw inference.)

- Buddhism promoted the building of sacred structures in a big way. Why? (A short-answer type question that will evaluate the ability to link cause and effect.)
- Account for the beginning and spread of the Bhakti and Sufi movements in medieval India. (An essay-type question that will evaluate understanding of meeting of cultures.)
- Make an assessment of the Ain-i-Akbari as a source to understand the developments in agrarian relations in India during the 16<sup>th</sup> and the 17<sup>th</sup> centuries CE. (An essay-type question that will evaluate the ability to make a critical assessment of a court chronicle.)
- Explain the evident relationships between architecture and royal power in the Vijayanagara Empire. (A short-answer type question that will evaluate the ability to explain a complex historical phenomenon.)
- Francois Bernier in his *Travels in the Mughal Empire* described the Mughal king as the king of “beggars and barbarians because
  1. He saw the cities and towns as ruined and contaminated with ‘ill air’
  2. He saw the fields ‘overspread with bushes and full of ‘pestilential marishes’
  3. He saw the Indian society as consisting of undifferentiated masses of impoverished people
  4. He thought the primary reason of all this was the crown ownership of land
 (It is a multiple-choice type question that will evaluate contextual understanding of historical observations in relation to systems and processes.)
- Did the zamindars, peasants and artisans living in India’s countryside experience changes in the late 18<sup>th</sup> and 19<sup>th</sup> centuries? Comment. (A short-answer type question that will evaluate the students’ ability to explain a complex historical situation arising out of colonialism.)
- The people of India rose in a massive revolt against the British in 1857. Why? (A short-answer type question that will evaluate the students’ ability to establish causal connection between an event and the circumstances leading to it.)
- What was the significance of ‘salt satyagraha’ in the Gandhian scheme of civil-disobedience? (A short-answer type question that will evaluate the students’ ability to explain a complex historical situation arising out of colonialism.)

- What is communalism?

1. It is a kind of social philosophy which seeks to perpetuate group identities based on their faith
2. It is a kind of political system which treats every faith as valid and worthy of respect
3. It is a kind of politics which seeks to unify a community around a faith in hostile opposition to another community
4. It is a kind of religious movement which seeks to unify disparate sects into a homogenous religious group

(It is a multiple-choice type question that will evaluate students' understanding of a critical historical terminology.)

DRAFT

**LEARNING OUTCOMES FOR THE  
POLITICAL SCIENCE  
HIGHER SECONDARY STAGE**

Political Science syllabus at the higher secondary stage intended to provide opportunity to the students to have an idea of diverse political concerns. It wants students to engage with political process going on in the country in a historical context. The syllabus includes the courses in political theory, Indian politics and international politics. Some concerns of comparative politics and public administration are also integrated at different places.

At the class XI the working of Indian Constitution with some important provisions and some themes of political theory are introduced. It helps students to develop political arguments on various issues. Special care has been taken to encourage them analyse prejudices and opinions they may have inherited. It inculcates a respect for some stated and implicit constitutional values. Overall the syllabus focuses on key topics essential to understand the functions of the Indian democracy.

At the class XII the politics of India since independence have been outlined in a historical manner. The objective is to enable students to be familiar with some significant political events and figures in independent India. It intends students to have a historical perspective about the political process of India with some key developments. At the same time the changes in international politics have also been covered similar historical manner. It takes into account the dramatic changes that took place after the Second World War including the end of the cold war. The syllabus seeks to equip the students to think about India's place in the present world.

The courses do not cover all aspects of India's democratic structure, but provide an overview. Essentially it seeks to help students become active and interested citizens of Indian democracy.

**Curricular expectations**

At this stage learners are expected to:

- Understand historical processes and circumstances in which the Constitution was drafted, along with the important concerns.
- Identify certain key features of the Constitution and analyse how the provisions have worked in actual political life.



- Develop an interest in political theory, significant concepts and a capacity for abstraction with arguments about them.
- Imbibe the method of political analysis through events and processes of recent political developments in the country.
- Increase the capacity to link macro processes with micro situations in the social political life around them.
- Expand their horizon beyond India and make sense of the changing political map of the contemporary world.
- Familiarise with some of the key political events in the world in the post cold war era.

DRAFT

## Class XI

Suggested pedagogical process	Learning outcomes
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to -</b></p> <ul style="list-style-type: none"> <li>• Teacher may initiate students to share what they have learnt about important concepts during their secondary stage. Especially the concepts such as Citizenship, Freedom, Equality, Nationalism, Social Justice, Rights, Secularism, Peace, Development.</li> <li>• Students may differentiate between the Constitution, law, rules &amp; regulation. They can be helped with examples by the teacher, to classify various sets of directives.</li> <li>• Children may delineate the nature and scope of the works various government bodies under the Executive, Legislature, and Judiciary are expected to fulfill.</li> <li>• Students may enumerate the powers and duties of the states governments and those of the Union government.</li> <li>• Teacher may compare some characteristic features of a federal system of government with a unitary system of government. Asking students to find examples in different countries in the world.</li> <li>• Students may classify the key slogans or terms used by different political parties in</li> </ul>	<p><b>The learner -</b></p> <ul style="list-style-type: none"> <li>• <b>Recognizes and retrieves facts, figures and processes.</b> For instance, the most important concepts on play in a democracy.</li> <li>• <b>Classifies, contrasts and compares various governing acts.</b> To understand the domain, importance and implications.</li> <li>• <b>Explains cause and effect relationship.</b> For example, the constitutional provisions as cause and the works of the different organs as effect.</li> <li>• <b>Analyzes and evaluates information.</b> For example, the works of the central and state governments respectively, and how it affects citizens life.</li> <li>• <b>Interprets data/ photographs/ text, etc.</b> For example, the issues of development, socialism, secularism, communalism, integral humanism,</li> </ul>

<p>India, along with its meanings.</p> <ul style="list-style-type: none"> <li>• Teachers may arrange debate about the various articles under the Fundamental Rights and the Fundamental Duties given in the Constitution.</li> <li>• Teachers may encourage students to interpret cartoons, photographs and news clippings in the textbooks or in daily newspapers. The exercise will help find more information than stated.</li> <li>• Learners may compare the situation of the judiciary in India with that of the executive to find their respective status.</li> <li>• The map of India and the states may be used to understand the importance of different states regarding national economy and security.</li> <li>• Students may discuss various charts and tables in the textbooks to explain the messages conveyed by it.</li> <li>• Teachers may initiate a careful reading of the Preamble or some significant Article of the Constitution to understand its meaning and importance.</li> <li>• Learners may study various pronouncements of a national leader or a political party, to identify the bias or prejudice about a given issue.</li> <li>• Students may be asked to write essays on a dispute about an issue between two states, or between the Centre and a state. Or</li> </ul>	<p>social justice, etc.</p> <ul style="list-style-type: none"> <li>• <b>Identifies assumptions / biases/ prejudices / stereotypes.</b> For example, the relative importance of rights and duties as understood by different parties or organizations.</li> <li>• <b>Constructs ideas/knowledge on the basis of collected information.</b> e.g. the importance of the independent status of the judiciary and its effects.</li> <li>• <b>Demonstrates map skills</b></li> <li>• <b>Demonstrates spirit of enquiry/ inquisitiveness.</b> e.g. discussing different views of political parties on a given issue.</li> <li>• <b>Draws inter-linkages within social science subjects and across disciplines.</b> For example, to see how an Article affects the society, polity, and economy at the same time.</li> <li>• <b>Shows empathy/ appreciation/ sensitivity towards peers.</b></li> <li>• <b>Recognizes and imbibe values / conflict resolution skills</b></li> </ul>
---	--

<p>about a problem under the local governance.</p> <ul style="list-style-type: none"><li>• An essay so written by a student may be read by him/her, and the class fellows raise questions or shortcomings. Then the author student may answer or note it for improvement.</li><li>• Teacher may conduct a debate in the class on the merits and challenges of democracy. Different students argue the pros and cons of the observations.</li></ul>	
--	--

DRAFT

## Class XII

Suggested pedagogical process	Learning outcomes
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to -</b></p> <ul style="list-style-type: none"> <li>• Teachers may help learners to be familiar with the political maps of the world, of various continents and of our country and differentiate it with geographical maps.</li> <li>• Learners may detail different countries' location, size, population, main language, natural resources, famous leaders, their political systems, and neighbourhood, etc. to understand their relative importance and role in world politics.</li> <li>• Students can be asked to similarly detail different states in the country with location, size, language, and other social or political characteristics.</li> <li>• Teacher may ask learners to discuss various charts and photographs about the political parties in the textbook to find the messages conveyed by it.</li> <li>• Teachers may explain Cold War to learners and ask them to contrast it with regular war. The difference and implications may be underlined.</li> <li>• Learners may itemise the effect of the end of the Soviet Union. Emergence of new issues and conflicts in various parts of the world. The cause and effect relationship in</li> </ul>	<p><b>The learner -</b></p> <ul style="list-style-type: none"> <li>• <b>Recognizes and retrieve facts, figures.</b></li> <li>• <b>Demonstrate map skills</b></li> <li>• <b>Interpret data/ diagrams/ graphs/ etc.</b> For example, the number of seats in Parliament won by different political parties.</li> <li>• <b>Classifies, contrasts and compares</b></li> <li>• <b>Explains cause and effect relationship</b></li> <li>• <b>Analyzes and evaluates information.</b> For example, interprets it to explain the relative role a country or state plays in the world / national politics today.</li> </ul>

violent terrorism for the last few decades.

- Teachers may describe examples of one-party dominance in Indian political system. Students may be encouraged to compare the examples.
- Learners may identify the current security issues in the world today. Teachers may help them to understand its impact on particular countries or the world in general.
- Teachers may illustrate the issues of development in the country. Taking into account various regions' special situation.
- Teachers may describe about factors of globalization and how it affect different countries, and our own country. How Its positive and negative aspects may also be recognised.
- Students may be asked to note important events in the world in which the USA has played major role. The in the text-books They also explain it in the news items in newspapers and on TV news.
- Teachers may ask learners to write essays on the challenges to national security. An essay written may be read by him/her, and the class fellows raise questions or doubts. Then the author student can answer or note it for further improvement.
- Learners may be asked to make a chart of national political parties with their characteristics, agenda and contribution of

- **Draws inter-linkages within social science subjects and across disciplines.** For example, to see how an issue affects a country's polity, economy or society at the same time.
- **Communicates spirit of enquiry/inquisitiveness.** For example, Indian economy and political developments' link with globalization.
- **Identifies assumptions / biases/prejudices / stereotypes.** For example, the cartoons and news-clippings used in textbooks or in newspapers. Or, whether newspapers / news channels support or criticise ruling parties in a state or at the centre.
- **Construct ideas/knowledge on the basis of collected/given information.**
- **Extrapolate phenomena/ events/situations, etc.**
- **Show empathy/ appreciation/sensitivity.** For example, by evaluating the life around themselves of people in less privileged situation and circumstances.
- **Recognize and imbibe values / peace building / conflict resolution skills.** For example, by understanding the

<p>their mal leaders.</p> <ul style="list-style-type: none"> <li>• Teachers may explain the situation of troubled areas in the country, suffering from some conflict or natural calamities.</li> <li>• Similarly students may be encouraged to identify countries suffering from conflicts, acute poverty, etc. in the region. They may observe local examples and incidents, apart from the relevant lessons in the textbook.</li> <li>• Teachers may enlist the efforts of the United Nations and various agencies in peace building, especially in conflict zones in the world. Asia.</li> <li>• Students may be asked to enlist the environmental issues around their own place. Teachers may help compare it with similar issues faced in other places, states, countries.</li> </ul>	<p>difficulties in the process.</p>
--	-------------------------------------

**For Children with Special Needs- Different disciplines in Social Sciences at the Higher Secondary stage may require materials for better understanding of subjects.**

- In order to achieve learning Outcomes in Social Sciences, some students may require support in the form of prepared tapes, talking books/daisy books to access text; help in writing to communicate their ideas through alternative communication method such as ICT or speech; adaptation of content and activities; education aids to manage visual information; and/ or support to understand various geographical concepts and features and the environment.
- Group activities such as projects and assignments done through cooperative learning will enable students with SEN to participate actively in all classroom activities.

- For Children with Special Needs (CWSN), resources such as tactile diagrams/maps, talking books, audio-visual materials, Braille, etc. may be used. Pedagogical processes and learning outcomes in the document are not exhaustive. Teachers are expected to design and follow appropriate pedagogical processes along with assessment tasks to assess their students to continuously improve learning outcomes.

### **For Visually Impaired Children**

- Verbal content including geographical terms and concepts, for example, latitude, longitudes, directions etc. This may be followed for other subjects.
- Graphic and visual descriptions like map reading, graphs, diagrams, paintings, inscriptions, symbols and monumental architecture etc.
- Making observations of environment and space- land, climate, vegetation and wildlife, distribution of resources and services.
- Reference material like spelling lists, study questions, important references, and other information students may need to refer can be provided in enlarged, tactile or embossed formats to redrawn with proper contrasts.

### **For Hearing Impaired Children**

- Understanding of terminologies/technical terms, abstract concepts, facts, comparisons, cause effect relationships and chronology of events etc.
- Reading heavy text (textbooks/source materials) especially in History and Civics.
- Making inferences from the text.

### **For Children with Cognitive Impairments, Intellectual Disability**

- Accessing written work, illustrations, charts, graphs and maps (especially for students with cognitive processing problems- visual spatial/visual processing/ perceptual)
- Extracting relevant information from bulk information. Text heavy subjects like History are a challenge for students with reading difficulties
- Remembering the sequence of events and connecting them
- Understanding and interpreting abstract concepts

Generalisation and relating information in the textbooks with the environment or society.



**LEARNING OUTCOMES FOR THE  
PSYCHOLOGY  
HIGHER SECONDARY STAGE**

**Introduction**

Psychology is one of the youngest sciences but one of the fastest growing. There are many who believe that the 21<sup>st</sup> century is going to be the era of biological sciences along with psychological sciences. Development in the fields of neurosciences as well as physical sciences has opened new doors to solve the mysteries of mind and human behaviour. Psychology already has made inroads into many new domains which have resulted into new job opportunities.

Psychological concepts are linked with everyday human behaviour and also with various life experiences. As pedagogical practices are influenced by nature and contents of the subject discipline, the subject of psychology, which deals with human mind, behaviour and human relationship, aims at enriching students' knowledge as well as inspiring and arousing curiosity, positive feelings, desire to learn, openness, exploration of self and others, and so on. Such a methodology is helpful for their personal development and inculcation of positive attitude and love for the subject. Students in the field of psychology are expected to develop proper scientific attitude for analysing others' and their own behaviour and use it for self-improvement. The nature of psychology as a subject affords students' own stories and examples to help them relate knowledge gained in the classroom to their individual experiences as well as to their physical, social, political, and economic environments.

At this stage of school education, students in the field of psychology would develop foundation in the field of psychology with utilizing scientific inquiry and critical thinking. Psychology would help them to understand ethical and social responsibilities which will assist with embracing the qualities that will add to positive results in work settings and in the public arena. Psychology will develop sensibility to listen, communicate, and relate with others and will help them to understand their own selves as well as others.

The transaction of the subject matter, therefore, should facilitate reflection among students to explore the applicability of knowledge to their own contexts. An interactive approach to engage the students and to sustain their interest and enthusiasm would facilitate in making

teaching-learning process joyful. Pedagogical strategies like stories, discussions, examples, questioning, analogies, problem-solving situations, role play, etc. need to be focused upon.

It is critical that in teaching this subject/course, teachers must strive to maintain balance between scientific and experiential approaches. Students need to be made aware of the empirical nature of the discipline and the importance of adopting scientific approach in studying human behaviour.

### **Curricular Expectations**

At the secondary stage, the learners are expected to:

- develop understanding of psychology as a discipline and its relationships with other sciences.
- describe how various sensory stimuli are received, attended to and given meaning.
- understand various psychological processes that occur during learning, memory and thinking.
- explain the nature of human motivation, emotion, intelligence and personality.
- identify sources of stress and discuss various strategies to cope with stress.
- Explain the concept of abnormality and describe different approaches to treat psychological disorders.
- recognise that formation of attitudes and groups have an influence on human behaviour.
- understand the application of psychological understanding to some important social issues.

Though the contents have been organised under different headings, linkages have been created across and within the chapters to maintain continuity and holistic perspective.

### Class XI (Psychology)

Suggested Pedagogical Processes	Learning Outcomes
<p> <b>the learners may be provided with opportunities individually/ in groups and encouraged to –</b> </p> <ul style="list-style-type: none"> <li>• discuss and develop an understanding of psychology by writing in own words what is meant by psychology and how psychology as a discipline can help in better understanding of their inner self and the situations/happenings around them.</li> <li>• arouse interest and analyse things/situations around them which can be better understood with the help of psychology. Note down the feelings that were experienced since the past 2-3 days and analyse the possible psychological processes involved in these.</li> <li>• discuss the need for knowledge of psychology in different professions/fields (agriculture, industry, medical, engineering, medical, teaching, etc.).</li> <li>• use reflective questions as a tool to deepen understanding. For instance, reflect on the discipline which they think has close relationship with psychology.</li> <li>• reflect on the linkages between learning and environment and discuss with peers in class to understand the relevance of what is being taught in the class and their personal life experiences.</li> </ul>	<p> <b>the learner –</b> </p> <ul style="list-style-type: none"> <li>• <b>explains</b> the role of psychology in understanding mind and behaviour.</li> <li>• <b>states</b> the different branches of psychology.</li> <li>• <b>enumerates</b> the usefulness of psychology in everyday life.</li> <li>• <b>explains</b> the goals and nature of psychological enquiry and steps required to conduct a scientific research.</li> <li>• <b>describes</b> important methods of psychological enquiry-qualitative and quantitative approach.</li> <li>• <b>explores</b> ways to imbibe ethical code of conduct in one’s way of being.</li> </ul>

<ul style="list-style-type: none"> <li>• observe happenings/examples from everyday life which can be considered as human behaviour and those which are considered as mental processes by students. Based on the studies in psychology, conduct peer group discussion to highlight mental processes and behaviour of human beings.</li> <li>• conduct a brainstorming session with students to develop an understanding about some important methods in psychological enquiry -qualitative and quantitative approaches. The discussion points emerging from brainstorming can be put up for display in a chart.</li> <li>• conduct group study sessions where each group of students are assigned a theme/topic in psychology, which they will explore through scientific psychological enquiry. This may be followed by students presenting their learnings through concept mapping/flow chart. Enhance learners' engagement and conceptualise a theme or a topic of interest for study.</li> <li>• reflect upon ethical issues that one has to deal with while researching about the selected topic and describe it in detail.</li> <li>• collect information from different sources (books, e-resources, etc.) about which part of the brain is directly related to the daily activities like dancing, playing an instrument, riding a bicycle, walking, eating, drinking, sleeping, etc. The</li> </ul>	<ul style="list-style-type: none"> <li>• <b>describes</b> the biological and socio-cultural roots of behaviour.</li> <li>• <b>discusses</b> the socio-cultural influences on shaping of behaviour (i.e., family, community, faith, gender, caste, disability, etc.).</li> <li>• <b>explains</b> structure and functions of nervous system and endocrine system in terms of behaviour and experience.</li> <li>• <b>distinguishes</b> the characteristics of developmental stages: infancy, childhood, adolescence, adulthood and old age.</li> <li>• <b>records</b> one's own course of development and related experiences.</li> <li>• <b>explains</b> the nature of sensory processes, i.e. how various sensory</li> </ul>
--	--

<p>information may be presented as a project.</p> <ul style="list-style-type: none"> <li>• interview someone who has moved abroad and ask her/him to share their experiences in adapting to the new culture.</li> <li>• collect information from family members so as to know about their native culture (in terms of food, festivals, dress, customs, language, etc.). Reflect upon how their native culture have shaped their understanding of various aspects of life and their behaviour. Students may present their reflections in the class.</li> <li>• identify different characteristics which they have witnessed in their own self and their family members. Classify these according to the life-span perspective and present through small role plays.</li> <li>• engage in script writing session wherein one group of students develop a script from a preoperational (4-7 years old) child's point of view for playing with friends and another group of students write a script of an adolescent who is playing with friends. Later the scripts are presented in the form of role play. A discussion can be held to highlight the learnings from this activity (i.e., developmental stage specific behavioural patterns in forming social relationships).</li> <li>• discuss the major transitions that have taken place in the course of their lives and how these transitions have affected them. Explore the challenges faced by their</li> </ul>	<p>stimuli are received, attended to and given meaning.</p> <ul style="list-style-type: none"> <li>• <b>describes</b> the processes and types of attention.</li> <li>• <b>explains</b> the nature of learning and connection between different forms or types of learning.</li> <li>• <b>enumerates</b> various psychological processes that occur during learning and influence its course.</li> <li>• <b>explains</b> the nature of memory and distinguishes different types of memory.</li> <li>• <b>describes</b> the nature and causes of forgetting and the strategies for improving memory.</li> <li>• <b>describes</b> the nature of thinking and reasoning.</li> </ul>
--	---

parents in daily life. The findings may be compiled and a brief report prepared .

- organise group activity to develop an understanding about the functions of sensory organs. For example, while trying to balance themselves on one leg students examine which sense organ is helping them the most to be aware of their body position.
- talk to people who have sensory impairments and listen to/observe their coping skills. Share your experience in small groups in classroom.
- undertake a campaign or prepare publicity materials to safeguard / protect sense organs.
- explore own way of learning and ask friends, peers, siblings to find out their way of learning. Compare and contrast the collected information to know the different ways people receive, store and retrieve information.
- retrospect on past experiences and present to peers such experiences when their responses to particular situations were mediated by the principles of classical conditioning. Hold a debate on whether the shared observations were actually mediated by the principles of classical conditioning or not. Prepare a list of such experiences.
- reflect on their family members' behaviour and list down any three instances where their family members, according to them, had used principles of reinforcement in

- **explains** some cognitive processes involved in problem solving and decision-making.
- **differentiates** between language and thought.
- **describes** the nature of human motivation and crucial motives.
- **enumerates** the strategies to manage one's own emotions.

their behaviour.

- discuss with their family the impact of observational learning on children and write down about the discussion held and what was learned from this activity.
- interact with siblings, family members or other relatives/friends to recall about an event in the student's life which they remember vividly. Compare the two sets of memories (i.e., one of the students herself/himself and another of family or friend) and look for discrepancies and similarities. Record the observations and analyse the similarities and differences in the memories. Prepare a report on the reflections.
- reflect on their ability of attention to detail by mapping in mind the route they take to reach the school.
- create infographics/posters on barriers experienced in thinking and reflect. Teachers can use these as feedback for class management.
- collect information about any three scientists who have invented something using inductive reasoning as a method. Write a brief about each of them and display in the classroom.
- organise an open debate in class to understand the connection between language and thought.
- interact with a person in their family who, according to them, are professionally

successful. Based on the interaction, list their motives. Analyse them and link them with Maslow's hierarchy of needs. Present the analysis with the help of a diagram.

- explore your own way of managing emotions and ask your friends, siblings, neighbours as how they have managed their emotions .Compare how people experience different emotions and what strategies they use to manage them.
- present, through role play, the physiological responses of their body when they were feeling anxious (for example, before an examination, while speaking on stage, etc).
- reflect upon and present one's views in group discussion about how Maslow's hierarchy of needs has points of similarities with the *Chakra* system in the Indian tradition.



## Class XII (Psychology)

Suggested Pedagogical Processes	Learning Outcomes
<p> <b>the learners may be provided with opportunities individually/ in groups and encouraged to –</b> </p> <ul style="list-style-type: none"> <li>• list all the attributes (quality, characteristics, traits, features) they consider as sign of intelligent behaviour. Keeping these attributes in view, organise a workshop to formulate a description/explanation of intelligence.</li> <li>• reflect upon how are they and their sibling/ they and their friend, similar and different. Make a list of factors that they think have led to these similarities and differences. Try to group them as those related to environment of individual and those due to heredity.</li> <li>• reflect on an area where they think they are most proficient (music, dance, studies, arts, sports, etc.) and recognise whether it is intelligence or aptitude. Share their respective reflections in class. This is followed by a brainstorming session to explore the difference between intelligence and aptitude.</li> <li>• explore different ways in which people can be creative. Identify a person in their immediate surrounding whom they think is creative. List the characteristics of the person and justify why they think he/she is</li> </ul>	<p> <b>the learner –</b> </p> <ul style="list-style-type: none"> <li>• <b>describes</b> the construct of intelligence, theories of intelligence and Indian perspective.</li> <li>• <b>explains</b> variations in intelligence as entwined in both heredity and environment.</li> <li>• <b>distinguishes</b> among aptitude, intelligence, and creativity.</li> <li>• <b>differentiates</b> among aspects of self like self-concept, self-efficacy, self-esteem, and self-regulation, etc.</li> <li>• <b>explains</b> the theories of personality.</li> </ul>

a creative individual. Prepare a report of the exploration and justification.

- reflect upon the points of similarities and uniqueness in self and personality.
- ask them to share situations where they have used defense mechanisms as a tool to cope with anxiety.
- encourage them to individually examine which technique (or combination) of assessing personality would be most effective and also reflect on the points that make it more effective as compared to others. Submit one's reflections as a report.
- discuss about role of internal and external factors in feeling of stress. Encourage them to write about various situations where they have experienced stress and examine the extent to which the stress was due to internal factors and/or factor(s) which result from the external environment. Share their reflections in a tabular form, highlighting the internal and external factors.
- interview any two people in family and discuss the stressors they have experienced and what coping strategies they have used. Share the same in small groups. Collate strategies across different age groups and gender.
- engage in meditation for 10 minutes every day and list the changes they were able to trace in their state of being.
- interview any 10 people (for example,

- **enumerates** various techniques of personality assessment.
- **explains** the nature, types and sources of stress.
- **describes** strategies to cope with stress.
- **identifies** life skills that help people to stay healthy.
- **states** the factors underlying abnormal behaviour.
- **describes** the major psychological disorders—**anxiety, obsessive-compulsive, trauma- and stressor-related, somatic symptom, dissociative, depressive, bipolar, schizophrenia spectrum, psychotic, neurodevelopmental, disruptive,**

<p>friends , bus driver , vegetable vendors , clerk, rickshaw puller, etc. ) and ask what is their understanding of abnormal behaviour. Compare how people perceive abnormal behaviour differently.</p> <ul style="list-style-type: none"> <li>• share feelings such as: Students' feelings before their Class X Board examination. How did they feel when the examinations were drawing near (one month before the examinations; one week before the examinations; on the day of the examination, and when you were entering the examination hall)? Also try to make them recollect what students felt when they were awaiting their results. Write their experiences in terms of bodily symptoms (e.g., 'butterflies in the stomach', clammy hands, excessive perspiration, etc.) as well as mental experiences (e.g., tension, worry, pressure, etc.). Categorise these as those which are physiological and those which are in the thoughts/mind/psychological.</li> <li>• share and listing of details about some characters in films they have seen or books they have read who suffered from any of the disorders they have studied like depression or schizophrenia and presence of delusional thoughts.</li> <li>• study about different types of therapies and deliberate which one out of the therapies (psychodynamic therapy, cognitive therapy, behaviour therapy, etc.) do they find most intriguing and why and submit a</li> </ul>	<p>impulse-control and conduct, feeding and eating, and substance-related and addictive disorders.</p> <ul style="list-style-type: none"> <li>• <b>enumerates</b> the different types of therapies—psychodynamic, behaviour, cognitive, humanistic-existential, bio-medical, and alternative.</li> <li>• <b>explores</b> how people with mental disorders can be rehabilitated.</li> <li>• <b>explains</b> nature, formation and change of attitudes.</li> <li>• <b>explains</b> how people interpret the behaviour of others and how the presence of others influences our behaviour.</li> <li>• <b>describes</b> the concept of pro-social behaviour and factors affecting it.</li> </ul>
---	---

<p>report of their deliberations.</p> <ul style="list-style-type: none"> <li>• list down any 5 rehabilitation centres close to their residential areas which work for the treatment of mentally ill. Compare and contrast the techniques used by these centres.</li> <li>• initiate a discussion in class on the process of changing attitude and factors that influence the process. Allow students to collect any advertisement from a newspaper, or magazine that contains something that catches their attention. Encourage them to analyse the advertisement so as to identify factors in it which may influence their attitude change.</li> <li>• reflect on instances, through a skit, when an impression of someone was formed based on the information received about the person. Discuss learnings from the skit.</li> <li>• explain pro-social behaviour and encourage them to identify such behaviour in the classroom. Allow them to discuss with family members the characteristics and qualities required to demonstrate pro-social behaviour. Report learnings from this activity.</li> <li>• think of their favourite sports team and reflect on how they associate with it and are influenced by it.</li> <li>• organise a brainstorming session on the concept of social loafing, followed by group deliberation on situations in class/school which may be considered as</li> </ul>	<ul style="list-style-type: none"> <li>• <b>examines</b> the nature, types, formation and influences of groups on individual behaviour.</li> <li>• <b>describes</b> the nature of intergroup conflict and examines various conflict resolution strategies.</li> <li>• <b>states</b> the relationship between human beings and the environment.</li> <li>• <b>interprets</b> the causes and consequences of social problems from a psychological perspective.</li> <li>• <b>identifies</b> the possible remedies of problems such as poverty, aggression, and health.</li> <li>• <b>explains</b> the significance of developing communication skills, and the nature and process of counselling.</li> </ul>
---	--

social loafing.

- discuss in class the causes of intergroup conflict as well as ways in which it can be regulated. Based on the discussion, each student submits her/his deliberations and analysis as a report.
- collect information about any five NGOs working for promoting pro-environmental behaviour. Prepare a monograph of any one organisation justifying why one chose to focus on that particular organisation.
- ponder on how knowledge of psychology has equipped them to apply the psychological frameworks to real world situations and conditions like poverty, discrimination, aggression, etc. Share their deliberations in the form of a report and draw conclusions based on their deliberations.
- observe any two people in their school and note down their non-verbal communication. Share their observations and seek feedback from peers.
- practice active listening, attending, and paraphrasing in their interaction with family members for 4-5 days. Encourage them to prepare a write-up focusing on how it helped in communicating effectively.
- collect information from different sources about various skills which are crucial to become a psychologist. In group presentation, the views of each group is shared. Followed by this, hold a discussion

- **enumerates** the importance of psychological testing skills in individual assessment.

<p>session on how the skills presented earlier in group presentations help in relating to someone in distress.</p>	
--	--

### **Suggested Pedagogical Processes in an Inclusive Set-up**

The curriculum is same for each student in a classroom. There may be some students in the classroom that may have learning difficulties including language, visual-spatial or mixed processing problems. In an inclusive set-up, children with such difficulties and special needs are provided with equal opportunities to actively participate in all the activities with some adaptation in the curriculum and additional teaching support. Keeping in mind the specific requirements of children with special needs, few pedagogical processes for teachers are suggested below:

- Use detailed verbal descriptions of diagrams, graphical representations and pictures. These can also be made tactile with proper contrasts.
- Use examples from everyday life for explaining various concepts and theories.
- Use audio-visual materials like films and videos to explain abstract concepts. For example, impact of various socio-cultural factors on human behaviour.
- Organise various group work involving debates, quizzes, discussions, role play, etc.
- Use everyday life examples, illustrations, tables, activities and boxes to facilitate better understanding of the concepts.
- Encourage students to read summary of the chapter which helps to reinforce and consolidate what has been read or taught.
- Indulge students in group activities as they are important for team building, to experience the joy of sharing and to develop respect for each other's viewpoint.
- While conducting activity sessions, particular care should be taken in building a classroom climate that is conducive to mutual respect, confidence and cooperation.
- Set and enforce ground rules for respectful interaction in the classroom.
- To the extent that is possible (depending on the size of your class), get to know your students and the individual perspectives, skills, experiences, and ideas that they bring into the class.

- Use verbal and non-verbal cues to encourage participation and to challenge students to think deeply and critically.
- Involve students in exploring the environment using other senses like smell, hearing and touch.
- Provide a brief overview at the beginning of each class.
- Create opportunities to listen to all children.
- Be open to the new ideas and questions your students bring into the class.
- Encourage reflection among students to facilitate applying knowledge to their own contexts.

\*\*\*\*\*

DRAFT

## DEVELOPMENT TEAM

### 1. Anjum Sibia

Professor, DEPFEE and Head, DER

NIE, New Delhi

### 2. Prabhat K. Mishra

Professor, DEPFEE

NIE, New Delhi

## Members of the Review Committee

### 1. K.B. Rath

Professor, Regional Institute of Education

Ajmer

### 2. I.B. Chughtai

Professor, Regional Institute of Education

Bhopal

### 3. Gowramma I.P.

Professor, Regional Institute of Education

Bhubaneswar

### 4. Prachi Ghildyal

Assistant Professor, North East Regional Institute of Education

Shillong



### **Additional Resources: Class-XI**

- Baron, R.A. (2001/Indian reprint 2002). Psychology (5th ed.). Allyn & Bacon.
- Das, J.P. (1998). The Working Mind : An Introduction to Psychology . Sage Publications.
- Davis, S.F., & Palladino, J.H. (1997). Psychology. Prentice Hall, Inc.
- Gerow, J.R. (1997). Psychology : An Introduction. Addison Wesley Longman, Inc.
- Gleitman, H. (1996). Basic Psychology. W.W. Norton & Company.
- Khandwalla , P.N. (1984). Fourth Eye: Excellence through Creativity . A.H. Wheeler and Co.
- Malim, T., & Birch, A. (1998). Introductory Psychology. Macmillan Press Ltd.
- Morgan, C.T., King, R.A., Weisz, J.R., & Schopler, J. (1986). Introduction to Psychology (7th ed.). McGraw- Hill Book Company.
- Weiten, W. (2001). Psychology: Themes and Variations . Wadsworth.
- Zimbardo, P.G., & Weber, A.L. (1997). Psychology. New York : Longman.
- Zimbardo, P.G. (1985). Psychology and Life. Harper Collins Publishers.
- Dash, U.N., Mohanty, P.K., Mohanty , S.C., Pattanaik, L.K., Nanda , G.K., Misra , G., & Kar, C. (2004). Psychology- Part I. Orissa State Bureau of Textbook Preparation and Production . Pustak Bhawan, Bhubaneswar.
- Gleitman, H., Fridlund , A.J., & Reisberg, D. (2004). Basic Psychology (5th ed.). W.W. Norton & Company.
- Mandal, M.K. (2004). Emotion: Basic Issues and Current Trends . Affiliated East-West Press.
- Santrock, J.W. (1999). Life-Span Development (7th ed.). Boston : McGraw-Hill College.

### **Additional Resources: Class-XII**

- Baron, R.A. 2001/Indian reprint 2002. Psychology (5th ed.). Allyn & Bacon.
- Bellack, A.S., & Hersen, M. 1998. Comprehensive Clinical Psychology. Elsevir. London.
- Carson, R.C., Butcher, J.N., & Mineka, S. 2004. Abnormal Psychology and Modern Life. Pearson Education. Delhi .
- Davis, S.F., & Palladino, J.H. 1997. Psychology . Prentice-Hall , Inc.
- Davison , G.C. 1998. Abnormal Psychology , John Wiley & Sons, Inc.

- Gerow , J.R. 1997. Psychology : An Introduction . Addison Wesley Longman, Inc.
- Gleitman, H. 1996. Basic Psychology. W.W. Norton and Company.
- Sadock, , B.J., & Sadock, V.A. (Eds.) 2004. Kaplan & Sadock’s Comprehensive Textbook of Psychiatry (8th ed., Vol. II). Lippincott Williams & Wilkins.
- Lahey, B.B. 1998. Psychology : An Introduction . Tata McGraw-Hill.
- Malim, T., & Birch , A. 1998. Introductory Psychology, Macmillan Press Ltd.
- McMahon , J.W., McMahon, F.B., & Romano, T. 1995. Psychology and You. West Publishing Company .
- Weiten, W. 2001. Psychology : Themes and Variations . Thomson Learning, Inc. Wadsworth.
- Zimbardo, P.G., & Weber, A.L. 1997. Psychology. Longman. New York.

## Weblinks

### Class XI-weblinks

Chapter 1: What is Psychology?

Title: Evolution of Psychology

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/file/582aa11116b51c1a9064b2c5>

Title: Branches of Psychology

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aa26416b51c1a9064b2e7>

Chapter 2: Methods of Enquiry in Psychology

Title: Experimental Method and Correlational Method

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aa6cc16b51c1a9064b32b>

Title: Survey Research Method

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aa86416b51c1a9064b34d>

Title: Analysis of Data

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aaa0c16b51c1a9064b36f>

### Chapter 3: The Bases of Human Behaviour

Title: Endocrine system

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aafd216b51c1a9064b3d5>

Title: Cultural Basis of Behaviour

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ab13016b51c1a9064b3f7>

### Chapter 4: Human Development

Title: Human Development

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ab2ca16b51c1a9064b419>

Title: Adolescence

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ab7dc16b51c1a9064b47f>

### Chapter 5: Sensory, Attentional and Perceptual Processes

Title: Attentional Processes

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582abeae16b51c1a9064b4e5>

Title: Principles of Perceptual Organisation, and Types of Perceptual Constancies

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ac2eb16b51c1a9064b5294>

Title: Perception of Space, Depth and Distance, and Illusions

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ac4e816b51c1a9064b54b>

### Chapter 6: Learning

Title: Classical Conditioning

Link: <https://h5p.org/h5p/embed/444295>

Title: Operant Conditioning

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ac9fc16b51c1a9064b5b1>

Title: Observational Learning, Cognitive Learning, and Verbal Learning

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582acb7216b51c1a9064b5d3>

#### Chapter 7: Memory

Title: Nature of Memory, Stage Model, Levels of Processing, and Types of Long-term Memory

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ad54516b51c1a9064b67d>

Title: Knowledge Representation and Organisation in Memory, Memory as a Constructive Process, Forgetting, and Enhancing Memory

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ad6e716b51c1a9064b69f>

#### Chapter 8: Thinking

Title: Nature and Process of Creative Thinking

Link: [http://econtent.ncert.org.in/pdf/Psychology\\_history/NATURE.pdf](http://econtent.ncert.org.in/pdf/Psychology_history/NATURE.pdf)

#### Chapter 9: Motivation and Emotion

Title: Maslow's Hierarchy of Needs

Link: <https://h5p.org/h5p/embed/444298>

Title: Theories of Emotions

Link: [http://econtent.ncert.org.in/pdf/Psychology\\_history/THEORIES.pdf](http://econtent.ncert.org.in/pdf/Psychology_history/THEORIES.pdf)

### **Class XII - Weblinks**

#### Chapter 1: Variations in Psychological Attributes

Title: Different Assessment Methods

Link: <https://h5p.org/h5p/embed/444290>

Title: Theories and Assessment of Intelligence

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582add6516b51c60b06a81e2>

Title: Culture and Intelligence, Emotional Intelligence, Special Abilities, and Creativity

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ae09316b51c60b06a8226>

## Chapter 2: Self and Personality

Title: Self and Personality

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ae23416b51c60b06a8248>

Title: Type and Trait Approaches to Personality

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ae3c416b51c60b06a826a>

Title: Psychodynamic Approach to Personality

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582ae57e16b51c60b06a828c>

## Chapter 3: Meeting Life Challenges

Title: Nature, Types, and Sources of Stress

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aebf116b51c60b06a8314>

Title: Effects of Stress on Psychological Functioning and Health

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aedbe16b51c60b06a8336>

Title: Stress Management Techniques

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aef7e16b51c60b06a8358>

## Chapter 4: Psychological Disorders

Title: Factors Affecting Abnormal Behaviour

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582af4df16b51c60b06a83be>

## Chapter 5: Therapeutic Approaches

Title: Nature, Process, and Types of Psychotherapy

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582aff0916b51c60b06a848a>

Title: Psychodynamic and Behaviour Therapies

Link: <https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582b00c016b51c60b06a84ac>

Title: Humanistic-existential Therapy, Biomedical Therapy, Alternative Therapies, and Rehabilitation of the Mentally ill

Link:

[https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582b037a16b51c60b06a84f0#metadata\\_info](https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/582b037a16b51c60b06a84f0#metadata_info)

## Chapter 6: Attitude and Social Cognition

Title: Factors that Influence Attitude Formation

Link: <https://h5p.org/h5p/embed/444292>

## Chapter 7: Social Influence and Group Processes

Title: Social Influence and Group Processes

Link: [http://econtent.ncert.org.in/pdf/Psychology\\_history/GROUP.pdf](http://econtent.ncert.org.in/pdf/Psychology_history/GROUP.pdf)

## Chapter 8: Psychology and Life

Title: Interpersonal Physical Distance

Link: [http://econtent.ncert.org.in/pdf/Psychology\\_history/INTERPERSONAL.pdf](http://econtent.ncert.org.in/pdf/Psychology_history/INTERPERSONAL.pdf)

## Chapter 9: Developing Psychological Skills

Title: Counselling Process and Skills

Link: <https://h5p.org/h5p/embed/444286>

\*\*\*\*\*

**LEARNING OUTCOMES FOR THE  
SOCIOLOGY  
HIGHER SECONDARY STAGE**

Sociology is introduced as an elective subject at the senior secondary stage. The themes of the discipline are designed to help learners reflect on what they hear and see in the course of everyday life. The discipline also helps learners develop a constructivist attitude towards society in change and equip learners with concepts and theoretical skills for the purpose. This way sociology enables learners understand society more wholly and develop a comprehensive analysis and understanding of the numerous social processes that occur in society. Sociology fosters self-reflexivity among learners as a process of deepening of personal relationship with society and its constituent processes and units by understanding and engaging with them. The curriculum of sociology is designed to enable learners to understand dynamics of human behaviour in all complexities and manifestations.

The study of sociology helps learners approach the study of human society as an interconnected whole and understand the emergence and development of sociology as a discipline. The aim of the subject is to enable learners understand basic concepts of sociology, be aware of the complex social processes and build capacities in students to analyse changes in society. While helping learners recognize the importance of sociological understanding of the terms and concepts, sociology helps the learner understand, recognise, interconnect and analyse different concepts related to the study of society. The study of sociology helps the learner understand the growth and scope of sociology in India, especially in contemporary Indian society, and recognise the importance of field work in Anthropology and Sociology. The study of sociology also helps learners understand and appreciate diverse perspectives and thoughts and their importance in building a pluralistic, multi-cultural, just and healthy society.

**Curricular Expectations**

At this stage learners are expected to;

- Relate classroom teaching with their outside environment.
- Understand basic concepts of Sociology for enabling them to observe and interpret social life.

- Understand the emergence of sociology.
- Be aware of the complexity of social processes.
- Understand the concept of social institutions.
- Appreciate the diversity in Indian society and the world at large.
- Understand and analyze the changes in contemporary Indian society.
- Understand and appreciate diverse perspectives and thoughts and their importance in building a pluralistic and multi-cultural society.
- Understand the need and importance of an equal and just society.

DRAFT



## Class XI

Suggested Pedagogical Processes	Learning Outcomes
<p><b>The learners may be provided with opportunities individually/ in groups and encouraged to;</b></p> <ul style="list-style-type: none"> <li>▪ Make a list of the most desirable jobs in and write down suggestions that learners receive on working hard and deciding their careers. Discuss whether working hard is sufficient for getting a desirable job.</li> <li>▪ Read different sources and discuss about the various dimensions of society.</li> <li>▪ Read and discuss about the Enlightenment and industrial revolution and try to establish the link between them.</li> <li>▪ Watch documentary films based on agriculture and discuss the interlinkages among socio-cultural, economic and political aspects of society.</li> <li>▪ Read documentary sources and analyse the different types of societies. Identify inequalities existing within and between societies.</li> <li>▪ Discuss and write the differences between commonsense knowledge and sociological understanding.</li> <li>▪ Familiarise yourself with the concepts of society, social groups, social stratification, status, role and social control.</li> <li>▪ Acquaint yourself with the writings of B. R. Ambedkar, Alex Haley, Rabindranath</li> </ul>	<p><b>The learner understands, recognises , interconnects and analyses the different concepts, for example;</b></p> <ul style="list-style-type: none"> <li>▪ How the study of Sociology reflects upon the connection between a personal problem and a public issue.</li> <li>▪ Sociology studies human society as an interconnected whole and development of sociology as a discipline.</li> <li>▪ Growth and scope of Sociology in India and the relationship of sociology with other social sciences.</li> <li>▪ The concept of society and how societies are unequal in nature.</li> <li>▪ The difference between sociology and common-sense knowledge.</li> </ul> <p><b>Recognises and understands the importance of sociological understanding of the terms and concepts of Sociology, for example;</b></p> <ul style="list-style-type: none"> <li>▪ Concept of social groups and society, different types of groups, social stratification, caste and class, status and role and role stereotyping, society and social control.</li> <li>▪ The concept of social institutions, family as a social institution and how families are</li> </ul>

<p>Tagore and the others.</p> <ul style="list-style-type: none"> <li>▪ Discuss the role stereotyping and write its effects on your life.</li> <li>▪ Read about the institution of family and watch films of 70s, 80s and 2010s. Analyse the changing nature of family and family's connections with other social spheres.</li> <li>▪ Familiarize yourself with the concept of division of labour, traditional and modern forms of work. Analyse these from the gender lens.</li> <li>▪ Read about institutions, state, religion and education. Discuss and write about their connections and interdependence.</li> <li>▪ Collect information on the cultures in India. Discuss the diversity among them and the reasons for this diversity.</li> <li>▪ Collect cultural items from different states of India. Find the reasons for these cultural differences.</li> <li>▪ Get familiarised with the concept of Ethnocentrism.</li> <li>▪ Read and discuss about socialisation, agencies of socialisation and its effect on the life of a person.</li> <li>▪ Discuss gendered nature of socialisation.</li> <li>▪ Understand the meaning of social structure, stratification, social processes, cooperation and conflict.</li> <li>▪ Discuss competition as an idea and practice.</li> <li>▪ Identify the contexts and reasons for land</li> </ul>	<p>linked to other social spheres, marriage and forms of marriage, norms of marriage and kinship.</p> <ul style="list-style-type: none"> <li>▪ The concept of work and economic life, modern forms of work and division of labour.</li> <li>▪ The political institutions, State, religion and education as social institutions.</li> <li>▪ Culture and socialisation, diverse settings, different cultures, dimensions of culture, cognitive and normative aspects of culture, material aspect of culture, culture and identity and Ethnocentrism.</li> <li>▪ Socialisation, agencies of socialisation, family, peer groups, schools, mass media, other socialising agencies, socialisation and individual freedom and gendered socialisation.</li> <li>▪ Social structure, stratification and social processes, social structure and stratification.</li> <li>▪ Social processes in sociology, cooperation and division of labour, competition as an idea and practice, conflict and cooperation.</li> <li>▪ Land conflicts.</li> <li>▪ Social change and social order in rural and urban society.</li> <li>▪ Social change, environment, technology and economy, politics, culture, social order, contestation, crime and violence.</li> <li>▪ Social order and change in village, town and city.</li> </ul>
---	--

<p>conflicts in India.</p> <ul style="list-style-type: none"> <li>▪ Study social change and social order in rural and urban society, politics, environment and technology and economy.</li> <li>▪ Discuss and write contestation, crime and violence.</li> <li>▪ Read about French revolution.</li> <li>▪ Read Karl Marx's concept of class struggle and Emile Durkheim's vision of sociology,</li> <li>▪ Study Max Weber's ideas of interpretive sociology.</li> <li>▪ Discuss and write about bureaucracy.</li> <li>▪ Read Ghurye's works on caste and race, the works of D. P. Mukerji on tradition and change, ideas of A.R. Desai on the State and works of M. N. Srinivas on the village.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Western sociologists, the Enlightenment, the French revolution, the industrial revolution.</li> <li>▪ Karl Marx and class struggle.</li> <li>▪ Emile Durkheim's vision of sociology, division of labour in society.</li> <li>▪ Max Weber and interpretive sociology and bureaucracy.</li> <li>▪ Indian sociologists: Ghurye on caste and race, D. P. Mukerji on tradition and change, A.R. Desai on the State, M. N. Srinivas on the Village.</li> </ul>
--	---

## Class XII

Suggested Pedagogical Processes	Learning Outcomes
<p><b>The learners may be provided with opportunities individually/ in groups and encouraged to;</b></p> <ul style="list-style-type: none"> <li>▪ Discuss and write about self-reflexivity.</li> <li>▪ Read different sources and discuss about the dimensions of colonialism and nationalism in India.</li> <li>▪ Read and discuss the social demography and its importance in sociology.</li> <li>▪ Read different sources on theories of demography.</li> <li>▪ Read and study the census reports of India.</li> <li>▪ Watch documentary films based on agriculture and discuss interlinks and differences between rural and urban societies.</li> <li>▪ Read documentary sources and analyse different types of societies. Identify inequalities existing within and between societies.</li> <li>▪ Discuss and write the differences of caste system in traditional and modern societies.</li> <li>▪ Familiarise yourself with the concepts of tribal communities, national development versus tribal development and tribal identity.</li> <li>▪ Discuss in groups concepts of family and</li> </ul>	<p><b>The learner understands, recognises, interconnects and analyses different concepts, for example;</b></p> <ul style="list-style-type: none"> <li>▪ How the study of sociology enables self-reflexivity.</li> <li>▪ Colonialism and nationalism in India.</li> <li>▪ Social demography and its importance in sociology.</li> <li>▪ Malthusian theory of Population Growth.</li> <li>▪ Theory of Demographic Transition.</li> <li>▪ Common concepts and indicators of population, the size and growth of population in India, age structure of the Indian population, the declining sex ratio in India.</li> <li>▪ Literacy, rural-urban differences and population policy in India.</li> </ul> <p><b>Recognises and understands the importance of sociological understanding of the terms and concepts of sociology, for example;</b></p> <ul style="list-style-type: none"> <li>▪ Concept of caste system, caste in the past, colonialism and caste, caste in the present society.</li> <li>▪ Tribal communities, classifications of the tribal societies, mainstream attitudes towards tribes, national development</li> </ul>

<p>kinship and write about these.</p> <ul style="list-style-type: none"> <li>▪ Familiarize yourself with the concept of market and discuss about sociological perspectives on markets and economy.</li> <li>▪ Read books and literature on caste-based market, trade networks and business communities in India.</li> <li>▪ Discuss and write about the emergence of new market and the changing patterns of market in India. Also discuss how it affects society and life-style of people.</li> <li>▪ Read about capitalism, commoditisation and consumption. Discuss and write about their connections and interdependence.</li> <li>▪ Collect information on the process of globalisation and liberalisation in India. Discuss the effects of globalisation on different types of markets.</li> <li>▪ Read and discuss about social inequality and exclusion. Identify the factors for these inequalities.</li> <li>▪ Get familiarised with the concepts of caste and tribe. Read and discuss about untouchability and state's initiatives to address caste-based discriminations.</li> <li>▪ Read and discuss about different struggles for rights in India.</li> <li>▪ Discuss about the challenges of cultural diversity and the importance of community identity.</li> <li>▪ Understand the meaning of regionalism, religion, nation-building, communalism, secularism and civil society.</li> </ul>	<p>versus tribal development, tribal identity.</p> <ul style="list-style-type: none"> <li>▪ The concept of family and kinship, nuclear and extended family, the diverse forms of the family.</li> <li>▪ The concept of Market as a social institution, sociological perspectives on markets and economy.</li> <li>▪ Caste-based markets and trading networks in pre-colonial and colonial India, social organisation of markets, traditional business communities, colonialism and the emergence of new markets.</li> <li>▪ Capitalism as a social system, commoditisation and consumption.</li> <li>▪ Globalisation - interlinking of local, regional, national and international markets and the virtual market.</li> <li>▪ Liberalisation.</li> <li>▪ Market versus the state.</li> <li>▪ Concept of social inequality and exclusion, prejudices and stereotypes.</li> <li>▪ Caste and Tribe-systems justifying and perpetuating inequality, untouchability, state and non-state initiative to address discrimination based on caste and tribe.</li> <li>▪ The Other Backward Classes.</li> <li>▪ Adivasi struggle, struggle for women's equality and rights, the struggle of the differently abled.</li> <li>▪ Challenges of cultural diversity, cultural communities and the nation-state, the importance of community identity, communities, nations and nation-states,</li> </ul>
---	--

<ul style="list-style-type: none"> <li>▪ Discuss different types of research methods in project works.</li> <li>▪ Study structural change, urbanisation, and industrialisation in India.</li> <li>▪ Discuss and write about cultural change.</li> <li>▪ Read about social reform movements in the 19th and 20th century.</li> <li>▪ Study Sanskritisation, modernisation, secularisation and westernisation in the context of social change.</li> <li>▪ Read, discuss and write about Indian Constitution and core values of Indian Constitution.</li> <li>▪ Discuss about the Constituent Assembly debates and the Constitution, social change and justice.</li> <li>▪ Read different sources on Panchayat Raj and establish its link with social transformation in rural areas.</li> <li>▪ Familiarise yourself with the concept of political parties, pressure groups and democratic politics.</li> <li>▪ Read and discuss about rural society.</li> <li>▪ Study different resources and analyse the impacts of development process, land reforms, green revolution, globalisation and liberalisation on rural society.</li> <li>▪ Familiarise yourself with the process of industrialisation and its impact on work and working conditions in India.</li> <li>▪ Discuss the process of globalisation and its impacts on society, communication, labour, employment and culture.</li> </ul>	<ul style="list-style-type: none"> <li>cultural diversity and the Indian nation state.</li> <li>▪ Regionalism in the Indian context, nation-state and religion, Minority rights and nation building, communalism, secularism and the nation-state, state and civil society.</li> <li>▪ Variety of methods, survey method, interviews, observation.</li> <li>▪ Structural change, colonialism, urbanisation, industrialisation, tea plantations, industrialisation in independent India, urbanisation in independent India.</li> <li>▪ Cultural change, Social Reform movements in 19<sup>th</sup> and 20<sup>th</sup> century.</li> <li>▪ Approach to study Sanskritisation, Modernisation, Secularisation and Westernisation, different kinds of social change.</li> <li>▪ Indian Democracy, Indian Constitution, the core values of Indian Democracy, Constituent Assembly debates, the Constitution and Social Change, Constitutional norms and social justice.</li> <li>▪ The Panchayat Raj and the challenges of rural social transformation, powers and responsibilities of panchayat, Panchayat Raj in tribal areas.</li> <li>▪ Democratisation and inequality, political parties, pressure groups and democratic politics.</li> <li>▪ Change and development in rural society, agrarian structure, caste and class in rural</li> </ul>
--	--

<ul style="list-style-type: none"> <li>▪ Acquaint yourself with concept of homogenisation and globalisation, gender and culture, consumption and corporate culture.</li> <li>▪ Study about mass media and communications and its beginning in India.</li> <li>▪ Read and analyse the effects of globalisation on media.</li> <li>▪ Study the different sources on social movements and theories of social movements.</li> <li>▪ Read and collect information about different types of social movements and their contributions to social changes in India.</li> </ul>	<ul style="list-style-type: none"> <li>India, impact of land reforms, green revolution and its social consequences, globalisation, liberalisation and rural society.</li> <li>▪ Change and development in industrial society, industrialisation in India, work and working conditions, strikes and unions.</li> <li>▪ Globalisation and social change, different dimensions of globalisation, global communication, globalisation and labour, employment and culture.</li> <li>▪ Homogenisation versus Globalisation of culture, gender and culture, culture of consumption, corporate culture.</li> <li>▪ Mass media and communications, beginnings of modern mass media, radio, television and print media.</li> <li>▪ Globalisation and media.</li> <li>▪ Social Movements, features of social movements, sociology and social movements and theories of social movements.</li> <li>▪ Types of social movements- Reformist, Redemptive, Revolutionary, old and new social movements, ecological movements.</li> <li>▪ Class based movements - Peasant movements and Workers' movements.</li> <li>▪ Caste based movements- the <i>Dalit</i> movement and Backward Castes movements.</li> <li>▪ The Tribal movements.</li> <li>▪ The Women's movements.</li> </ul>
---	---

**LEARNING OUTCOMES FOR THE  
ACCOUNTANCY  
HIGHER SECONDARY STAGE**

With the fast changing economic scenario, the commerce education along with accountancy as the language of business and as a source of financial information has carved out a place for itself at the Senior Secondary stage. The subject provides a firm foundation in basic accounting practices and includes fundamentals of financial accounting, and specialized accounting procedures for trading and non-trading organizations, partnership and corporate accounts and financial statement analysis. The subject emphasizes on developing basic understanding about the nature of accounting information develop among students' logical reasoning, careful analysis and considered judgment.

The technological revolution has further provided new dimensions like computerized accounting system, E-Finance , accounting as an information system, and forensic accounting etc., have gained importance in recent times.

**Curricular Expectations**

- i.* Familiarizes the students with accounting as an information system;
- ii.* Develops basic skills of accounting to apply accounting concepts and accounting standards in different business situations.
- iii.* Develops skills to analyze and interpret financial statements of specialized business entities for informed decision making and economic reasoning.
- iv.* Inculcate entrepreneurial skills for effective transition from school to the world of work including self-employment.



Class XI : Financial Accounting	
Suggested Pedagogical Practices	Learning Outcomes
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to:-</b></p>	<p>The learner:</p> <p><b>Recognizes , draws relationships and narrate processes about facts, concepts and terms used in accounting :</b></p>
<ol style="list-style-type: none"> <li>1. Observe accounting as a process of identification, recording, classification, summarization of accounting data, and communication thereof for financial decision making.</li> <li>2. Recognize accounting as an information system and acquire basic concepts of computerized accounting to discuss the role of IT in the growth of business organizations</li> <li>3. Appreciate the changing role accountant in recent times i.e., from stewardship function (custodian of book of accounts) to information generation function.</li> </ol>	<ul style="list-style-type: none"> <li>• Describes relationship between accounting, accountancy and book keeping.</li> <li>• Discuss role of accounting as a language of business enterprise.</li> <li>• defines various terms used in accounting.</li> <li>• Identifies monetary and non-monetary events for recording in book of accounts.</li> <li>• Differentiates between accounting data and accounting information.</li> <li>• Identifies users of accounting information for communication and dissemination.</li> <li>• Lists the qualitative characteristics of accounting information.</li> <li>• state the meaning and purpose of the basic accounting concepts;</li> </ul>
	<p>The learner:</p> <p><b>Classifies and compares facts, data, and figures</b></p>
<ol style="list-style-type: none"> <li>4. Apply the generally accepted accounting principles, accounting concepts, standards and procedures in maintaining accounting records of a</li> </ol>	<ul style="list-style-type: none"> <li>• Lists the Indian accounting standards (Ind_AS) issued by the Institute of Chartered Accountants of India in bringing uniformity in business records</li> </ul>

<p>business entity.</p>	<p>for effective comparison between entities.</p> <ul style="list-style-type: none"> <li>• Classifies accounting data into assets, liabilities, capital, revenue and expenses.</li> <li>• Categorises types of source documents such as cash memo, debit note, credit note, invoices, cheques, promissory note, bill of exchange etc., for recording business transactions.</li> <li>• Differentiates between source documents and support documents.</li> <li>• Apply accounting equation to process business transactions for recording in book of accounts.</li> </ul>
	<p>The learner:</p> <p><b>Analyses and Evaluates accounting data</b></p>
<p>5. Demonstrate skills of journalizing and posting from journal to ledger.</p>	<ul style="list-style-type: none"> <li>• Applies the rules of debit and credit in journalising and posting in ledger</li> <li>• Draws trial balance for summarizing accounting data.</li> <li>• Locates errors and rectifies them in case of disagreement of trial balance.</li> </ul>
	<p>The learner:</p> <p><b>Presents accounting information for dissemination</b></p>
<p>6. Prepare financial statements of a business entity</p>	<ul style="list-style-type: none"> <li>• Categories items of revenue and capital.</li> <li>• Distinguishes between cash basis and accrual basis of accounting.</li> <li>• Calculates gross profit, operating profit and net profit of a business entity.</li> <li>• Makes adjustments for closing stock, prepaid expenses, outstanding expenses,</li> </ul>

<p>7. Demonstrate skills to convert incomplete business records into complete book of accounts using double entry system of accounting.</p>	<p>accrued income, income received in advance, bad debts, depreciation etc.</p> <ul style="list-style-type: none"> <li>• Prepares balance sheet of a business concern.</li> <li>• Distinguishes between double entry and single entry</li> <li>• Enumerates causes and limitations of incomplete records.</li> <li>• Ascertains profit by converting s single entry transactions into double entry records.</li> </ul>
<p>Class XII: Accountancy</p>	
<p>Suggested Pedagogical Practices</p>	<p>Learning Outcomes</p>
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to:-</b></p>	<p>The learner: <b>Recognizes , draws relationships and narrate processes about facts, concepts and terms used in accounting :</b></p>
<p>1. Observes the financial statements of profit and not-for-profit organizations.</p>	<ul style="list-style-type: none"> <li>• Differentiates between financial statements of business and non-business entities.</li> <li>• Recalls the concepts of profit, surplus, loss and deficit in the context of financial statements of business and non-business entities.</li> <li>• Lists the features of receipt and payments account, income and expenditure account, profit and loss account and balance sheet.</li> <li>• Discuss the specific items of income and expenditure and how they are treated using accrual basis of accounting.</li> </ul>

<p>2. Recognize forms of business organizations</p>	<ul style="list-style-type: none"> <li>• Describes forms of business organizations as sole proprietorship, partnership and company.</li> <li>• Discuss the advantages of partnership and company form of business over sole proprietorship form of business.</li> <li>• Define partnership as per Indian Partnership Act 1932 and company as per the Companies Act 2013.</li> </ul>
	<p>The learner:</p> <p><b>Classifies and compares facts, computes data, and figures</b></p>
<p>3. Apply accounting concepts, accounting standards and accounting procedures in maintaining business records of Partnership form of business.</p> <p>4. Enable students to carry out these activities:</p> <ol style="list-style-type: none"> <li>Draw chart in tabular form to show types of shares and debentures and methods of redemption of debentures</li> <li>Draws chart showing format of financial statements of a company.</li> <li>Fills share or debenture application form (dummy) to understand the terms and conditions of issue of securities</li> </ol>	<ul style="list-style-type: none"> <li>• Discuss the provisions of Indian Partnership Act 1932 and Partnership Deed in Partnership form of business.</li> <li>• Differentiates between reconstitution of partnership firm and dissolution of partnership firm.</li> <li>• Compares revaluation of assets and reassessment of liabilities and realization of assets and liabilities for partnership firm.</li> <li>• Classifies partner's capital into fixed and fluctuating capitals; method of valuation of goodwill; calculation of interest on capital and interest on drawings.</li> <li>• Collects information on various cases for dissolution of partnership firm.</li> <li>• Ascertain new profit sharing ratio, sacrificing ratio, gaining ratio in the event of reconstitution of partnership firm.</li> <li>• Apply accounting treatment as per</li> </ul>

<p>iv. Read IPOs of securities i.e., shares, debentures and bonds floated in the capital market to appraise about terms of issuance.</p> <p>5. Apply accounting concepts, accounting standards and changes in accounting procedures w.r.t., company form of business.</p> <p>6. Develop skills to prepare and present financial statements of specialized business organizations such as Not for profit organizations, partnership, company and others.</p>	<p>applicable accounting standard for valuation of goodwill in the event of reconstitution of partnership firm.</p> <ul style="list-style-type: none"> <li>• Lists the sources of finance and states the reasons for which source of finance is more economical in nature</li> <li>• Differentiates between share capital and debt capital.</li> <li>• Explains why debentures debt capital of a company.</li> <li>• Discusses why company prefers both debt and share capital for raising funds.</li> <li>• Compares issue of share and debentures for cash and as collateral security.</li> <li>• Classify issue of shares and debentures at par, premium and discount.</li> <li>• Categories methods of redemption of debt capital after the expiry of specified time period.</li> <li>• Adopts changes in accounting procedures for maintaining books of accounts w.r.t., share capital and debentures.</li> <li>• Prepares financial statements and other relevant accounts of different forms of business organizations.</li> </ul>
	<p>The learner:</p> <p><b>Analyses and Evaluates accounting data and</b></p>

	<b>Presents accounting information for dissemination</b>
<p>7. Demonstrate skills of presentation and disclosures</p> <p>8. Analyses the financial statements of a company in terms of its solvency, liquidity, profitability and growth.</p>	<ul style="list-style-type: none"> <li>• Prepares relevant accounts and balance sheet of the reconstituted firm.</li> <li>• Discusses disclosure of items in company's balance sheet.</li> <li>• Draws Company's balance sheet as per the schedule III of the Companies Act 2013.</li> <li>• Undertakes comprehensive project work and related hands on activities.</li> <li>• Discusses why investors, lenders, and other stakeholders are interested in analysis of financial statements.</li> <li>• Differentiates between horizontal and vertical analysis of financial statements</li> <li>• Describes the significance of accounting ratios in financial statement analysis.</li> <li>• Categorizes accounting ratios for assessing liquidity, profitability and solvency of a business enterprise.</li> <li>• Explains adequacy of cash and cash equivalents in terms of its timing and certainty for a particular period and future commitments of an enterprise by classifying into operating, investing and financing activities.</li> </ul>

**Suggested Pedagogical Processes in an Inclusive Setup**

The curriculum of accounting is same for all students opting for commerce stream. This requires all students to actively participate in the teaching –learning process. It is important for a commerce teacher to understand that students have different learning styles. They may require additional teaching support and some adaptation in the curriculum. By considering the specific requirements

of children with special needs, few pedagogical processes for the teachers are suggested below:

1. Use examples from everyday life for explaining types of business transactions in their neighborhood. Follow a well-defined teaching sequence with a pace based on the student's needs. Teacher can find out what the student already knows and build his/her teaching accordingly.
2. Organise group work involving debates, quizzes, role play, reading activities, etc.
3. Organise excursions, trips and visits to market places like malls, weekly haats, trade fairs, (educational tour).
4. Use visual or graphic representations, infographics, charts etc., flow charts, posters, etc.
5. Organise group work involving activities like cut and paste, and make use of pictorial displays, models, pictures, posters, flash cards or any visual items to illustrate the concepts.
6. Use annual reports of companies, scrapbooks and newspapers, etc., to help learners understand the textual material.
7. Asking relevant questions frequently to check how much the learner has learnt as it helps in assimilating information.
8. Using multiple choice questions to get responses from children who find it difficult to write or explain verbally.
9. Increase or decrease the number of activities the student is expected to complete.

**LEARNING OUTCOMES FOR THE  
BUSINESS STUDIES  
HIGHER SECONDARY STAGE**

**Introduction**

Business Studies as an area of study draws its content from the disciplines of management, finance, marketing, human resource development and business entrepreneurship. The subject facilitates students to appreciate that business activities are an integral component of society and develops an understanding of many social and ethical issues. Rural development and growth, corporate social responsibility, micro and small scale industries, innovation and entrepreneurship, financial literacy, Intellectual property rights, consumer protection, environmental protection and conservation of resources etc., are major components of the subject.

Business Studies prepares students to manage, evaluate and respond to the economic, political, legal and social environment that affect business operations and analyze the interactions thereof. The subject broadens its base by bringing in issues of inclusiveness, growth and sustainable development which can be leveraged for productive opportunities and generation of income on equitable terms. The technological revolution has further provided new dimensions such as such as E-banking, E-Marketing, E-Commerce, E-Finance, E-investment (paperless trading) and have been gaining importance in recent times.

**Curricular Expectations**

- v. Develop an understanding of the dynamic nature of business, its environment and inter related aspects of society.
- vi. Appreciate the economic and social significance of business activity.
- vii. Appreciate the concerns of constitutional provisions and labour laws relating to human rights and child rights applicable to business units so as to function as responsible citizens of the society.
- viii. Inculcate entrepreneurial skills for effective transition from school to the world of work including self-employment.



Class XI : Business Studies	
Suggested Pedagogical Practices	Learning Outcomes
<p><b>The learners may be provided with opportunities individually or in groups and encouraged to:-</b></p>	<p>The learner:</p> <p><b>Recognizes , draws relationships and narrate processes concepts in business :</b></p>
<ul style="list-style-type: none"> <li>• Observe day-today activities of people living in the community and prepare a chart in tabular form citing examples of self-employment, wage employment and working for self-satisfaction.</li> <li>• Recognize business as an economic activity</li> <li>• Illustrate comparison between business and other economic activities</li> <li>• Appreciate social aspect of business</li> <li>• Collect and read articles from business magazines and newspapers and make project on: <ul style="list-style-type: none"> <li>i. corporate social responsibility (CSR) of any business enterprise</li> <li>ii. Ethical practices adopted by business concerns</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Differentiates between economic and non-economic activities</li> <li>• Define the term business</li> <li>• Categorize economic activities into business, employment and profession</li> <li>• Explain features of business as an economic activity.</li> <li>• Distinguish trade from industry and business</li> <li>• Compares economic activities and auxiliaries to trade i.e., banking, insurance, transport, warehouse and advertising</li> <li>• Draws relation between risk and reward</li> <li>• Describe profit maximization objective <i>versus</i> social obligation of business</li> <li>• Discuss the significance of ethics in the growth of business</li> </ul>
	<p>The learner:</p> <p><b>Classifies and compares forms of business</b></p>
<ul style="list-style-type: none"> <li>• Discuss factors determining choice of appropriate form of business organizations.</li> <li>• Recognize role of e-banking and digital payments in business activities.</li> <li>• Discuss with students how virtual</li> </ul>	<ul style="list-style-type: none"> <li>• Differentiate between forms of business organizations</li> <li>• Illustrates types of documents for formation of a company</li> <li>• Examines the changing role of public sector in the economy</li> </ul>

<p>market, online buying and selling embed with digital form of receipts and payments made an impact during the Covid 19 lockdown period. With physical shops and markets shut down and people were forced to stay inside their houses, how essentials reached every house hold.</p> <ol style="list-style-type: none"> <li>i. Appreciate the scope of e-business with students</li> <li>ii. Enable students to prepare small project (pictorial scrap book ) on types of digital mechanisms for receipts payments and security concerns while making digital transfer of funds.</li> <li>iii. Caution them for the security concerns associated with online buying selling and doing digital payments.</li> </ol>	<ul style="list-style-type: none"> <li>• Explain the benefits of Joint ventures and Public Private partnerships</li> <li>• Distinguishes between conventional (physical) and e- business</li> <li>• Discuss advantages and limitations of ofdigital payments and electronic fund transfer mechanisms.</li> </ul>
	<p>The learner:</p> <p><b>Analyses and Evaluates business scenario</b></p>
<ul style="list-style-type: none"> <li>• Recognise the role of MSMEs in rural development and promotion of IPRs</li> <li>• Appreciate the importance of finance in business</li> </ul>	<ul style="list-style-type: none"> <li>• Analyses types of hindrances to trade and commerce</li> <li>• Contribution of entrepreneurship and innovation in the economic development of the country</li> <li>• Enumerate sources of business finance and choose the appropriate source to fund business expansion requirements.</li> </ul>
<p>Class XII : Business Studies</p>	
<p>Suggested Pedagogical Practices</p>	<p>Learning Outcomes</p>
<p><b>The learners may be provided with</b></p>	<p>The learner:</p>

<p><b>opportunities individually or in groups and encouraged to:-</b></p>	<p><b>Recognizes , draws relationships and narrate processes concepts in business :</b></p>
<ol style="list-style-type: none"> <li>1. Search success stories / timeline of big business houses operating in India and weave it into a story to understand how important management for the growth of a business organization is.</li> <li>2. Appreciate the contribution of F.W. Taylor and Henry Fayol in the development of management.</li> <li>3. Prepare the comparative chart of Taylor’s principles of scientific management and Henry Fayol’s Principles of management for managing business effectively.</li> </ol>	<ul style="list-style-type: none"> <li>• Defines management and what makes management all pervasive and continuous in an organization.</li> <li>• Discusses the significance of managing business organization effectively.</li> <li>• Describes the interrelationships between various functions of management.</li> <li>• <b>Describes management as an Art, Science and Profession</b></li> <li>• Examines universal applicability of management principles in all walks of life.</li> </ul>
	<p>The learner:</p> <p><b>Classifies and compares aspects of business finance and Marketing Management</b></p>
<ol style="list-style-type: none"> <li>4. Recognise role of financial management in the operations of business enterprise</li> <li>5. Comprehends financial market mechanism in India</li> <li>6. Discuss the role of marketing management in the growth of economy .</li> <li>7. Appreciate legal framework for consumer protection in India;</li> </ol>	<ul style="list-style-type: none"> <li>• Classifies money market and capital market instruments.</li> <li>• Categorizes financial management decisions into investment decision, financing decisions and dividend decisions.</li> <li>• Designs sales promotion tools for a new product or service launch, viz. advertising, personal selling, and public relation.</li> </ul>

	<ul style="list-style-type: none"> <li>• Illustrates consumer rights and legal framework as per Consumer Protection Act 2019.</li> </ul>
	<p>The learner:</p> <p><b>Analyses and Evaluates business scenario</b></p>
<ul style="list-style-type: none"> <li>• Develop appropriate case studies to make student understand these dimensions of business environment.</li> <li>• Discuss the impact of Legal, Political and social environment on business.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss importance of SEBI as financial regulator</li> <li>• Categorizes dimensions of business environment in managing business effectively</li> <li>• Analyses how business environment leads to innovation and entrepreneurship.</li> </ul>
	<p><b>shows sensitivity and appreciation skills, for example,</b></p>
	<ul style="list-style-type: none"> <li>• Document real life experiences/stories of individuals and communities of successful business entrepreneurs and their innovative business ideas.</li> <li>• Role of women entrepreneurs in business scenario</li> <li>• Social entrepreneurship initiatives for empowering the marginalized sections of the society</li> <li>• Business as an integral aspect of society for inclusive growth.</li> </ul>

### **Suggested Pedagogical Processes in an Inclusive Setup**

The curriculum of business studies is same for all students opting for commerce stream. This requires all students to actively participate in the teaching –learning process. It is important for a business studies teacher to understand that students have different learning styles. There

may be some students who have learning difficulties including language, visual-spatial or mixed processing problems. They may require additional teaching support and some adaptation in the curriculum. By considering the specific requirements of children with special needs, few pedagogical processes for the teachers are suggested below:

10. Use examples from everyday life for explaining types of economic and non-economic activities in their neighborhood. Follow a well-defined teaching sequence with a pace based on the student's needs. Teacher can find out what the student already knows and build his/her teaching accordingly.
11. Organise group work involving debates, quizzes, role play, reading activities, etc.
12. Teach and evaluate in different ways, for example, through dramatization field trips, real life examples, project work, etc.
13. Organise excursions, trips and visits to market places like malls, weekly haats, trade fairs, (educational tour).
14. Use visual or graphic representations, charts etc., flow charts, posters, etc.
15. Organise group work involving activities like cut and paste, and make use of pictorial displays, models, pictures, posters, flash cards or any visual items to illustrate the concepts.
16. Use magazines, scrapbooks and newspapers, etc., to help learners understand the textual material.
17. Asking relevant questions frequently to check how much the learner has learnt as it helps in assimilating information.
18. Using multiple choice questions to get responses from children who find it difficult to write or explain verbally.
19. Increase or decrease the number of activities the student is expected to complete.

**LEARNING OUTCOMES FOR THE  
VISUAL ART/ FINE ART (PAINTING)  
HIGHER SECONDARY STAGE**

**Introduction**

Arts Education for Classes XI-XII has several subjects of Visual and Performing Arts, which become discipline oriented and students across Boards, opt them as one of the four main subjects or at times as an additional subject. In Fine/ Visual Arts, usually there are Four subjects from which students may select one, depending upon their interest and skills they have acquired through previous stages of education and in future they may pursue it as a vocation. These Subjects are Painting, Graphics, Sculpture and Applied Arts (Commercial Art). The subjects of Visual/ Fine Arts have two components, one is Theory, which often carries the weightage of 30% of the Maximum Marks and the Practical component carries 70% weightage of the Maximum marks. Theory part is common for all the three subjects, with few exceptions and emphasis on specific subject/s. In all subjects of Visual Arts at this level theory textbooks too are common. NCERT has prepared syllabus for all these subjects which is available online on the following link; ([http://www.ncert.nic.in/rightside/links/pdf/syllabus/Art\\_Educationfinal\\_syllabus.pdf](http://www.ncert.nic.in/rightside/links/pdf/syllabus/Art_Educationfinal_syllabus.pdf)) or the Syllabus of different Boards are followed in schools.

**Curricular expectation from Students at this stage;**

- Theory is learnt by students of this stage with an emphasis to understand and appreciate the rich tangible heritage of the Country and be proud of it.
- They also develop an understanding about the artistic and architectural developments that happened from the beginning, identifying different characteristic features of Indian art during different periods, regions and regimes, and differentiate among them,
- The practical part of the Courses emphasises on artistic skills, creativity, conceptualization, visualization, non-verbal communication, critical and analytical thinking. The overall objective of the course is to make students more aware about the aesthetic values.

- They develop artistic thinking and abilities to appreciate beauty in nature and man-made objects around them and apply it in their art work.
- They learn the skills to handle different types of art materials, tools and experiment with different techniques.
- During this stage of education while pursuing this course, students are expected to develop their own style to express themselves. Apply aesthetics in day-today working.
- Students also learn to work together in teams, while being sensitive and appreciative towards artistic expression of each-others, especially in an inclusive environment. They enjoy working on projects and assignments as teams and acknowledge the strength of each other.
- Students at this stage are expected to participate in inter-school, regional/ zonal and national level art activities, visit museum/s, art galleries, exhibitions and shows, art events etc. organised by schools and also on their own (if possible with parents) to interact with artists and artisans in the community to explore traditional art forms also.
- Through the Fine/ Visual Art courses, universal values and core components of the constitution for India's common cultural heritage, history of freedom movement, national identity etc. may be inculcated.
- After doing the Fine Arts courses at Senior Secondary stage, students will have enough competency to select/ pursue a professional course in higher education to become a creative artist or designer or in Museums etc. They may also pursue courses of specialization in different vocations of design, film and cinema, stage, drama, education etc. and enter into the world of work as per their choice and interest. The teachers of Fine Arts in school at the Secondary stage (Classes IX-XII) should guide students towards sensitization of different career choices, while transacting the subject related competencies.

## PAINTING- Class – XI

### Theory (History of Art)

Learning Outcomes	Suggested Pedagogical Processes
<p><b>The Learner;</b></p> <ul style="list-style-type: none"> <li>• <b>understands developments of Indian art- sculpture, architecture and painting, from the earliest times to the Ancient periods and early Medieval period in different part of the Indian sub-continent,</b> <ul style="list-style-type: none"> <li>- different characteristic features of Indian art during different periods, regions and regimes,</li> <li>- differentiating and identifying characteristic features of different styles</li> <li>- knowing the old and the new names of different places of art historical importance in the country</li> </ul> </li> <li>• <b>observes how artists in different periods have applied the elements and principles of visual art, design and architecture,</b> <ul style="list-style-type: none"> <li>- the treatment of line, form, shape, colour, texture, light and shade in works,</li> <li>- rhythm, balance, volume, space, movement, contrast, contour, pattern, unity, variety etc.</li> </ul> </li> </ul>	<p><b>The learners may be provided with opportunities individually or in groups and encouraged to —</b></p> <ul style="list-style-type: none"> <li>• Discuss about various art and architectural developments that took place from as early as Prehistoric ages to Indus Valley Civilization and ancient periods in the Indian sub-continent. They can discuss and read about how and where people lived before they started building different types of houses, what they made, what the purpose of creating was, different tools and paintings, what were the materials etc.</li> <li>• A quiz may be organized in the Class to know about their knowledge of Indian arts during the Ancient and Early Medieval periods, names of monuments, places etc.</li> <li>• They may be encouraged to maintain a journal, where they can make notes of their own observations on different topics and sub-topics. For example, do they find any similarities in their earlier works or child art with cave paintings or toys of Indus Valley!</li> <li>• Visit to different Museums, their websites, art galleries, shows etc. may be organized by the School, subsequently they can also visit them either with friends or parents. During the visits, they can observe details of different aspects of the displayed items, note their observations,</li> </ul>



<ul style="list-style-type: none"> <li>- the stylistic differences in architecture of Stupa/ Temples/ Mosques and other buildings in different parts of the country</li> <li>- the Nagara and Drawid styles of temples and their structures and plans</li> <li>• <b>knows about various textual resources written during ancient periods and how they have been referred by artists in subsequent periods,</b> <ul style="list-style-type: none"> <li>- from the beginning of history, texts were written by scholars and became cannons for art and architecture,</li> <li>- Chitrasutra of Vishanudharmottar purana, Samrangana Sutradhara, Natya Shastra etc. were referred by artists and architects</li> </ul> </li> <li>• <b>appreciates the rich tangible heritage of the Country and be proud of it,</b> <ul style="list-style-type: none"> <li>- diverse tangible heritage in different parts of the country,</li> <li>- the variety of styles, materials, iconography, structures,</li> <li>- understand unity in diversity, the identity of 'Indian' heritage</li> </ul> </li> <li>• <b>explores the art and architecture in neighbouring areas, in the district,</b></li> </ul>	<p>make diagrams, figures, sketches etc.</p> <ul style="list-style-type: none"> <li>• A monument is an architectural structural having an amalgamation of sciences and the art/ design and aesthetics. This can be experienced through an actual visit to see this synthesis. Visit to a monument to study it from diverse perspectives, when it had been built, function/ what was the purpose it was used, the surroundings, whether it is a stand-alone monument or there is cluster of monuments, is there a main structure with other minor ones, the materials, plan, ventilation etc. They may be shown the above aspects during the visit. They can take down notes of what they see, observe, study, make sketches, figures, map, etc.</li> <li>• Throughout the theory course, students will come across names of the places, both historical names as well as present day names, they may or may not be aware of all the places which are of art historical importance. It is desirable that they know about the places, where/ which part of the country they are situated. For this, they may be given assignment to take a map of the sub-continent or use a mapping tool on computer or use School Bhuvan portal <a href="https://bhuvan-app1.nrsc.gov.in/mhrd_ncert/#">https://bhuvan-app1.nrsc.gov.in/mhrd_ncert/#</a>, to identify and mark the important sites.</li> <li>• Go through the e-resources of different sites for looking at art works.</li> </ul> <p><b>Assignments/ projects:</b></p> <ul style="list-style-type: none"> <li>• Collect photographs from magazines, calendars,</li> </ul>
---	--

<p><b>state and the region, finds out more about them using different sources,</b></p> <ul style="list-style-type: none"> <li>- awareness about the old and new structures of importance</li> <li>- local heritage sites in neighbourhood or on the way from home to school/ market/ railway station etc.</li> <li>- school building and the history when it had been established, on what philosophy the school was build, who was the founder of the school etc.</li> </ul> <p><b>• conserves and preserves the heritage,</b></p> <ul style="list-style-type: none"> <li>- becoming aware of the rich and diverse heritage, and its importance for coming generations</li> <li>- need to protect and conserve by not defacing or damaging the art and architecture, old and traditional objects etc.</li> </ul>	<p>greeting cards, or what all you can get at home, arrange them in a chronological order and make an album of Indian Arts of different periods. Write captions under each of them in 4-8 lines of information such as period, date, name of the object, material used in making it, name and place of Museum or Collection where it lies presently.</p> <ul style="list-style-type: none"> <li>• They can make a toy or beads or any similar items used by people of the Indus Valley Civilization.</li> <li>• Write an illustrated essay using drawings, outlines, line drawing, mention the date/ century/ era, describing art form, its subject, the narration, materials and techniques used and characteristic features of the art forms mentioned.</li> <li>• Prepare a Power Point presentation with 20 slides with a brief description of above aspects in each of them.</li> <li>• Make 4 line drawings of different temples and brief description of them.</li> </ul>
---	--

## Class – XI Painting (Practical)

Learning Outcomes	Suggested Pedagogical Processes
<p><b>The learner-</b></p> <ul style="list-style-type: none"> <li>• <b>makes quick sketches of objects and situations around:</b> <ul style="list-style-type: none"> <li>- creates 3D effects with 2D medium such as; <i>drawing &amp; painting</i></li> <li>- applies art elements, such as; line, shape, form, texture, color, composition and perspective while sketching</li> <li>- appreciates beauty in nature and in man-made objects</li> </ul> </li> <li>• <b>creates varied compositions skillfully;</b> <ul style="list-style-type: none"> <li>- selects appropriate frames for different compositions</li> <li>- handles different mediums such as; water colors, poster colors, colored pencils &amp; crayons, etc. skillfully</li> <li>- knows difference between a sketch and a painting composition</li> <li>- arranges lines, forms and colors in ‘L’ shape and in ‘S’ shape to create varied compositions</li> <li>- communicates emotions artistically through selected medium of art</li> </ul> </li> </ul>	<p><b>The Learners be provided opportunities in pairs/groups/ individually and encouraged to:</b></p> <ul style="list-style-type: none"> <li>• Observe nature and natural settings, explore outdoor sketching at suitable sites/ location for practicing artistic expression. They need to learn to see things which they usually do not. For example looking at a plant/ a flower. What all is there on the flower, around the flower? What makes one flower look different than the other flower? Are there butterflies? What kind of butterflies? Texture of leaves, of flowers or branches, bark of tree?</li> <li>• Ask them to find out 20 things about a particular plant, a tree (or any object) they are looking at. This method of guided observation can help learners develop a habit of in-depth study of any/every object or situation.</li> <li>• Observe and sketch indoor settings and objects such as; kitchen objects, fruit and vegetables, furniture items, shoes and bags, clothing and drapery, tools or any object of liking.</li> <li>• Explore different compositions with view finder of open spaces and quick sketches with pen/pencil or charcoal using basic knowledge of line, shape, light and shade, perspective</li> </ul>

- **displays concern for appropriate use of colors, maintenance of painting tools and equipment:**

- Identifies and knows name of commonly available colors, regional tools and equipment of painting
- applies tools and equipment appropriately
- tries to customize painting tools and colors as per the need and avoids wastage of any kind.

- **makes still life of a group of two-three objects;**

- arranges objects for still life (object Study) as per object study guidelines
- applies principals of object drawing that is; ratio and proportion of one object with the other,
- light and shade to make look alike objects -creates 3- D effects on 2-D surface with 2-D material
- applies skills to copy perspective, color and texture of the objects in study
- knows the difference between a painting and an object study.
- appreciates object studies done by

etc.

- study objects with blind folded eyes to explore the texture, shape and size of one subject from another. In case of visually impaired learners, let them just feel the objects and draw on floor or on sand. They can work on shape, size and texture and not on colors shades and perspective. It would be good to facilitate them explore object study with clay modeling. All children like to work with clay and it helps them learn about objects better.
- study difference of light with the shade, soft with the hard surface, dull and bright colors by going deeper in to the study of trees, foliage, leaves, flowers, roots, fruits, vegetables, etc.
- Observe and practice elements of art that is; line, shape, form, texture, color, composition and perspective in composition of natural settings, like; sunny day to understand light and shade, architectural view for geometrical shapes, lines and perspective. Trees, leaves, flowers, sky, water bodies for curves, contours and colors.
- Create different compositions from nature; trees with sky in the background, trees with just mountains, trees with water in foreground, trees with buildings, Trees in rain, in sun, trees laden with snow.
- Initiate classroom discussion on use of elements by different artists on their

<p>masters</p>	<p>exemplary work. Such exercises help learners critically analyze their work.</p> <ul style="list-style-type: none"> <li>• View video clips and slide shows on different methods and materials in visual arts, such as; drawing painting, pencil and charcoal sketching, oil-pastel and colored chalk drawing, wall painting, making of comic strips on contemporary themes/subjects etc. to understand use of different materials by different experts / artists.</li> <li>• Discussion and presentation on use and maintenance of tools, equipment and material of Drawing &amp; Painting. <i>This work can be assigned in groups.</i></li> <li>• Find out and prepare list of traditional tools and materials of painting from; Library books, Internet, art teachers, artists etc.</li> <li>• Clean and maintain tools, equipment, materials used during the art activities.</li> <li>• Efforts to make own colors, brushes, hand-made papers etc. and give presentation on their innovation/s and products created in the process.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>recognizes and appreciates; contemporary, folk/ regional styles in visual art forms</b></li> <li>- reflects on the work of regional artists and artisans critically</li> <li>- reflects on the art work done by his/her</li> </ul>	<ul style="list-style-type: none"> <li>• Visit to galleries to see art exhibitions (galleries and museums have started organizing virtual tours for easy access) followed by classroom discussions (facilitated by the teacher).</li> <li>• Viewing of digital images of selected art</li> </ul>

<p>pears and his/her own</p> <ul style="list-style-type: none"> <li>- visits museums, galleries and exhibitions to see the work of artists</li> <li>- uses appropriate vocabulary for appreciating different art work</li> <li>- differentiates between contemporary and traditional work of visual arts</li> </ul>	<p>work in the course to experience aesthetics value of the composition.</p> <ul style="list-style-type: none"> <li>• Meet and interact with artists and artisans to know what and why on their art style, their journey as an artist.</li> <li>• Visit of artists / artisans (from community) to school periodically for benefit of all students.</li> <li>• Visit different places of artistic and historical importance (museums, galleries, art-studios, heritage sites, monuments, Melas / fairs, exhibitions, festivals, ceremonies and celebrations, Haat and Bazar etc.) for gaining firsthand experience of places, situations, people and their cultural heritage for the visual richness and originality in their artistic expression.</li> <li>• Write and present (Audio-Video, and/or written form) report of the visit/s event/s, exhibitions etc. in small groups of 2-3 students, (use of mobile, camera, ICT can be promoted for such activities).</li> <li>• Use ICT in planning, production and publicity of art work; find avenues to promote own art work through poster wall magazine, school bulletin and school magazine, and through social media platforms, like; YouTube, Instagram, art-blogs etc.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>applies artistic and aesthetic sensibility in day-to-day life;</b></li> </ul>	<ul style="list-style-type: none"> <li>• Framing and display of art work in classroom, on display boards on regular intervals to practice the skill of presenting</li> </ul>

- uses creative skills while planning an art activity, identifying resources and while composing drawing/painting
- applies artistic skills in display of art work, in art exhibitions and in classroom arrangements of art works
- demonstrates different life-skills and values such as; cooperation, team work, caring and sharing, discipline, respect for others (including those with special needs).
- appreciates cultural diversity, tangible and non-tangible cultural heritage
- respects nature and takes care of the environmental resources.

and exhibiting art work.

- Critical analyses of own art work as an exercise of self improvement.
- Maintain a folder / portfolio of their actual work.
- Express and showcase on different platforms such as: Kala Utsav of Ministry of Human Resource Development, Painting competitions organised by the Ministry of Power, by Petroleum Conservation and Research Association and many other departments and Ministries, Competitions organised by known organisations such as; Shankar's International Children's Competition and others to encourage young minds (facilitated by teacher) go deeper in to the subject and experience it's importance for creating social awareness.
- Organize art display / exhibition (At least once a year) at school level, where students are given responsibility to arrange display, organise resources, prepare catalogs, make posters to advertise the event/exhibition, invitation card for the parents/community and officials, curate the show and make a report of (print/digital/ video) the event while recording expression of students, staff and community on the event.
- Practice and showcase artistic skills in daily activities in classroom organization, change in seating arrangement, cleanliness, In storing

materials, maintaining artifacts, keeping the surrounding clean and beautiful.

*Note: All children except visually impaired are able to participate in visual art activities. But experience shows that visually impaired learners benefit a lot while working with 3-D materials such as sand, clay or other 3-d materials of construction at this level. They explore the objects through touch and copy the shape, size and texture to a great extent.*

DRAFT



## PAINTING- Class – XII

### Theory (History of Art)

Learning Outcomes	Suggested Pedagogical Processes
<p><b>The Learner;</b></p> <ul style="list-style-type: none"> <li>• <b>understands developments of Indian Painting traditions of around 1000 years during the Medieval and Modern periods and the Contemporary Art movements after Independence of India,</b> <ul style="list-style-type: none"> <li>- different characteristic features of manuscript paintings on palm leaf and paper, miniature painting, print making etc. art during different periods, regions and regimes,</li> <li>- differentiating and identifying characteristic features of different styles,</li> <li>- the Indian traditions and influences from outside, mainly middle east and central Asia and Europe and later on from the Orient,</li> </ul> </li> <li>• <b>observes how artists in different periods have applied the elements and principles of visual art,</b> <ul style="list-style-type: none"> <li>- artists had to express in a limited space, on small palm leaf and paper, from murals, where vast surface was available to the artist,</li> <li>- treatment of line, form, shape, colour, texture, light and shade in these works</li> </ul> </li> </ul>	<p><b>The learners may be provided with opportunities individually or in groups and encouraged to —</b></p> <ul style="list-style-type: none"> <li>• Discuss about various developments that took place during the last 1000 years in different parts of the country. They can discuss and read about different styles of paintings and sculptures (mainly in the Modern period), types of surfaces used, techniques and tools as well as the various influences whether from within the country or from outside, the subjects that they made, etc.</li> <li>• A quiz may be organized in the Class to know about their knowledge of styles of Indian painting traditions during the Medieval, Modern and Contemporary periods.</li> <li>• They may be encouraged to maintain a journal, where they can make notes of their own observations on different topics and sub-topics. For example, do they find any similarities in their earlier works or child art with cave paintings or toys of Indus Valley!</li> <li>• Visit to different Museums, their websites, art galleries, shows etc. may be organized by the School, subsequently they can also visit</li> </ul>

<p>changed, with the new media,</p> <ul style="list-style-type: none"> <li>- rhythm, balance, volume, space, movement, contrast, contour, pattern, unity, variety etc.</li> <li>- the stylistic differences in architecture of Stupa/ Temples/ Mosques and other buildings in different parts of the country</li> <li>- the Nagara and Drawid styles of temples and their structures and plans</li> </ul> <ul style="list-style-type: none"> <li>● <b>knows about various textual resources written during ancient periods and how they have been referred by artists in subsequent periods,</b> <ul style="list-style-type: none"> <li>- from the beginning of history, texts were written by scholars and became canons for art and architecture,</li> <li>- Chitrasutra of Vishanudharmottar purana, Samrangana Sutradhara, Natya Shastra etc. were referred by artists and architects</li> </ul> </li> <li>● <b>appreciates the rich tangible heritage of the Country and be proud of it,</b> <ul style="list-style-type: none"> <li>- diverse tangible heritage in different parts of the country,</li> <li>- the variety of styles, materials, iconography, structures,</li> <li>- understand unity in diversity, the identity of 'Indian' heritage</li> </ul> </li> <li>● <b>explores the art and architecture in neighbouring areas, in the district, state</b></li> </ul>	<p>them either with friends or parents. During the visits, they can observe details of different aspects of the displayed items, note their observations, make diagrams, figures, sketches etc.</p> <ul style="list-style-type: none"> <li>● A monument is an architectural structural having an amalgamation of sciences and the art/ design and aesthetics. This can be experienced through an actual visit to see this synthesis. Visit to a monument to study it from diverse perspectives, when it had been built, function/ what was the purpose it was used, the surroundings, whether it is a stand-alone monument or there is cluster of monuments, is there a main structure with other minor ones, the materials, plan, ventilation etc. They may be shown the above aspects during the visit. They can take down notes of what they see, observe, study, make sketches, figures, map, etc.</li> <li>● Throughout the theory course, students will come across names of the places, both historical names as well as present day names, they may or may not be aware of all the places which are of art historical importance. It is desirable that they know about the places, where/ which part of the country they are situated. For this, they may be given assignment to take a map of the sub-continent or use a mapping tool on computer or use School Bhuvan portal <a href="https://bhuvan-">https://bhuvan-</a></li> </ul>
--	---

<p><b>and the region, finds out more about them using different sources,</b></p> <ul style="list-style-type: none"> <li>- awareness about the old and new structures of importance</li> <li>- local heritage sites in neighbourhood or on the way from home to school/ market/ railway station etc.</li> <li>- school building and the history when it had been established, on what philosophy the school was build, who was the founder of the school etc.</li> </ul> <ul style="list-style-type: none"> <li>• <b>conserves and preserves the heritage,</b> <ul style="list-style-type: none"> <li>- becoming aware of the rich and diverse heritage, and its importance for coming generations</li> <li>- need to protect and conserve by not defacing or damaging the art and architecture, old and traditional objects etc.</li> </ul> </li> </ul>	<p><a href="http://app1.nrsc.gov.in/mhrd_ncert/#">app1.nrsc.gov.in/mhrd_ncert/#</a>, to identify and mark the important sites.</p> <ul style="list-style-type: none"> <li>• Go through the e-resources of different sites for looking at art works.</li> </ul> <p><b>Assignments/ projects:</b></p> <ul style="list-style-type: none"> <li>• Collect photographs from magazines, calendars, greeting cards, or what all you can get at home, arrange them in a chronological order and make an album of Indian Arts of different periods. Write captions under each of them in 4-8 lines of information such as period, date, name of the object, material used in making it, name and place of Museum or Collection where it lies presently.</li> <li>• Write an illustrated essay using drawings, outlines, line drawing, mention the date/ century/ era, describing art form, its subject, the narration, materials and techniques used and characteristic features of the art forms mentioned.</li> <li>• Prepare a Power Point presentation with 20 slides with a brief description of above aspects in each of them.</li> </ul>
---	---

## Class – XII Painting (Practical)

Learning Outcomes	Suggested Pedagogical Processes
<p><b>The learner-</b></p> <ul style="list-style-type: none"> <li>• <b>Makes quick sketches of objects and situations around;</b> <ul style="list-style-type: none"> <li>- creates 3D effects with 2D medium such as; drawing &amp; painting</li> <li>- applies visual art elements, such as; line, shape, form, texture, color, composition and perspective to create look alike effects</li> <li>- uses view finder to select aesthetically rich frames for sketching and drawings</li> <li>- finds and appreciates beauty in nature and in man-made objects</li> </ul> </li> <li>• <b>creates varied compositions skillfully;</b> <ul style="list-style-type: none"> <li>- handles different mediums such as; water colors, poster colors, oil colors, colored pencils &amp; crayons, pen and ink etc. skillfully</li> <li>- explains difference between a sketch and a drawing or a painting composition</li> <li>- arranges lines, forms and colors to create ‘L’ shape, ‘S’ shape and ‘diagonal’ compositions in drawing/painting</li> <li>- communicates his/her emotions artistically through selected medium of art</li> <li>- creates compositions on social subjects</li> </ul> </li> </ul>	<p><b>The Learners be provided opportunities in pairs/groups/ individually and encouraged to:</b></p> <ul style="list-style-type: none"> <li>• Observe nature and natural settings, explore quick outdoor sketching at suitable sites/ location for practicing artistic exploration.</li> <li>• <i>You have practiced sketching in class XI. You have developed the skill of using art elements while drawing or painting. Now you can focus in depth study of each element separately. For example; look at a tree with rough texture, feel it’s surface and try to create the same texture in your drawing. Now select another tree which has smooth bark, feel it and try to create same smooth looking texture in your drawing. Similarly a focused study and practice of all elements. This study will prove a life line for all kind of visual effects.</i></li> <li>• Observe and sketch indoor settings and objects; kitchen objects, fruit and vegetables, furniture items, shoes and bags, clothing and drapery, tools or any object of liking. Explore one object a day and focus on look alike accuracy.</li> <li>• Study difference of light with the shade, soft with the hard surface, dull and bright colors by going deeper in to the study of trees, foliage, leaves, flowers, roots, fruits, vegetables etc.</li> </ul>

/themes from imagination

- **Displays concern for appropriate use of colors, maintenance of drawing & painting tools and equipment:**

- Identifies and knows name of commonly available colors, regional tools and equipment of painting
- tries to make own colors using regional skills
- applies tools and equipment appropriately for creating desired effects
- Handles painting tools and materials with care and avoids wastage of any kind

- **makes life drawing and still life using appropriate skills:**

- Follows object study / life drawing guidelines at the time of arranging objects and person/s for the study
- applies principals of object/life drawing that is; ratio and proportion, light and shade to make his/her life drawing/still life look real (with 3-D effects)
- uses perspective, color and texture, high lights & shadows and reflections of objects, appropriately.

- study objects with blind folded eyes to explore the texture, shape and size of one subject from another. In case of visually impaired learners, let them just feel the objects and draw on floor or on sand. They can work on shape, size and texture and not on colors shades and perspective. It would be good to facilitate them explore object study with clay modeling. All children like to work with clay and it helps them learn about objects better.

- Discuss the use of art elements by different artists (preference should be given to those who are part of the class syllabus) to pin point each element and its value in the given art work. *Critical feedback on anyone selected piece of painting composition can sharpen the skill of appreciating art and nature. This can also help learner in improving his/her artistic skills of composing form, colors and content.*

- Practice different type of (horizontal vertical, symmetrical, asymmetrical etc.) with the help of view finder (in immediate or given surroundings). Use mobile cameras to click compositions based on color perspective and linear perspective. *View finder is a no-cost simple but very effective tool of selecting a view. It is an important aid to identify the most artistic view from a crowd of objects. Develop a habit of looking at views/scenes*

*through view finder. Even camera has a view finder to help us select the view before clicking.*

- Create different painting compositions from nature and/or imagination applying different mediums and techniques (water Colors, poster colors, crayons, pen-pencils, inks, mixed collage etc.). One can also try tearing - pasting and collage making as medium.
- Practice arranging and making still life with 3 to 4 objects such as; a book/block, one fruit/vegetable, a bottle or any other symmetrical object, a cloth for drapery as background for the group of objects to practice skill of object study.
- Viewing and discussing video clips, slide shows on object study and life drawings in different medium by different artists. *Life drawing / life study is interesting with quick sketching techniques. Since learner has done adequate sketching in XI and has practice of object drawing, he/she can enjoy fun of capturing people in different body movements.*
- Discuss contemporary social themes/issues and take part in Painting competitions organized by different organizations from time to time.
- Explore and experience working with 3-D art materials on 2D surface and feel it with close eyes. Relief work, murals and collage work

	<p>can fall in this category. Relate that Braille also works on the same principle and that visually impaired learner can also understand/enjoy, create/express through such methods and material.</p> <ul style="list-style-type: none"> <li>• Make a scrap book on tools, equipment and material used in painting (in group or individually). Explore all possibilities (books, Internet, art teachers, artists, experts etc.) to find out traditional as well as modern tools, equipment and materials for Drawing and Painting.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>recognizes and appreciates contemporary, folk/ regional styles in painting;</b> <ul style="list-style-type: none"> <li>- recognizes work of contemporary and folk artists of his state/region/country</li> <li>- reflects on and appreciates the work of regional artists and artisans critically</li> <li>- reflects on his/her own art work</li> <li>- appreciates art work done by his/her peers</li> <li>- documents visit/s to the museums/ artist studios/ galleries, interactions with the artists and artisans and their exhibitions, fairs and festivals</li> <li>- respects regional/traditional artists and artisans and their art</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Visit to galleries to see art exhibitions (galleries and museums have started organizing virtual tours for easy access) followed by classroom discussions (facilitated by the teacher). Meet and interact with artists and artisans to know what and why on their art style, their journey as an artist.</li> <li>• Viewing of digital images of selected art work in the course to experience aesthetics value of the composition.</li> <li>• Invite artists / artisans (from community) to school periodically for the benefit of all students.</li> <li>• Visit different places of artistic and historical importance (museums, galleries, art-studios, heritage sites, monuments, Melas / fairs, exhibitions, festivals, ceremonies and celebrations, Haat and Bazar etc.) for gaining</li> </ul>

	<p>firsthand experience of places, situations, people and their cultural heritage for the visual richness and originality in their artistic expression.</p> <ul style="list-style-type: none"> <li>• Write and present (Audio-Video, and/or written form) report of the visit/s event/s, exhibitions etc. individually or in small groups of 2-3 students, (use of mobile, camera, ICT can be promoted for such activities).</li> <li>• Use ICT in planning, production and publicity of art work; find avenues to promote own art work through poster wall magazine, school bulletin and school magazine, and through social media platforms, like; YouTube, Instagram, art-blogs etc.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>applies artistic and aesthetic sensibility in day-to-day life;</b> <ul style="list-style-type: none"> <li>- uses creative skills while planning an art activity, while exploring resources, while composing art expression etc.</li> <li>- applies artistic skills in display of art work, in art exhibitions and in classroom arrangements of art works</li> <li>- takes initiatives to participate in art exhibitions , art competitions (on actual as well as on virtual platforms)</li> <li>- demonstrates different life-skills and values such as; cooperation, team work,</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Display of art work in classroom, on display boards on regular intervals to practice the skill of presenting and exhibiting art work.</li> <li>• Critical analyses of own art work and work of others as an exercise of developing art criticism.</li> <li>• Maintain a folder / portfolio of own art work for internal assessment.</li> <li>• Express and showcase on different platforms such as: Kala Utsav of Ministry of Human Resource Development, Painting competitions organised by the Ministry of Power, by Petroleum Conservation and Research Association and many other</li> </ul>



caring and sharing, discipline, respect for others (including those with special needs.

- appreciates cultural diversity, tangible and non-tangible cultural heritage
- respects nature and takes care of the environmental resources.
- takes initiatives in organising classroom, his/her room or/and house look more artistic.

departments and Ministries, Competitions organised by known organisations such as; Shankar's International Children's Competition and others to encourage young minds (facilitated by teacher) go deeper in to the subject and experience it's importance for creating social awareness.

- Organize art display / exhibition (At least once a year) at school level with a specific theme, where students are given responsibility to arrange display, organise resources, prepare catalogs, make posters to advertise the event/exhibition, invitation card for the parents/community and officials, curate the show and make a report of (print/digital/ video) the event while recording expression of students, staff and community on the event.
- Practice and showcase artistic skills in daily activities in classroom organization, change in seating arrangement, cleanliness, store materials, maintain artifacts, keep the surrounding clean and beautiful.

***Note: All children except visually impaired are able to participate in visual art activities. But experience shows that visually impaired learners benefit a lot while working with 3-D materials such as sand, clay or other 3-d materials of construction at this level. They explore the objects through touch and copy the shape, size and texture to a great extent.***

**LEARNING OUTCOMES FOR THE  
MUSIC  
HIGHER SECONDARY LEVEL**

**Introduction –**

Music at the senior secondary level comprises of Vocal Music , Instrumental Music (Tat , Sushir and Avanaddha i.e. string , wind or blowing and percussive instruments ) . Further there are two streams of Classical Music which are to be studied at this stage of Music education. Hindustani Music and Carnatic Music. Hindustani Music is practiced in the Northern, Eastern and Western regions of India. Carnatic Music is practiced in five states in the southern part of India. Hence some basic elements while learning of Music may be similar but the content in history , theory , practical in all the above areas differ.

Music is basically a performing art and so 70 % of subject weightage is for practical learning which includes learning of sapta swaras , their variations, Study of Ragas, Talas , Notation system / norms of documentation , application of ragas , semi classical Music that is a form of regional music developed with fineness by incorporating some elements of classical music , folk and regional music etc. All these elements culminate to performance of Indian Music. But it has to be noted Music has its roots since the Vedic era that is it is almost 5000 years old . It has developed since those ancient times when human beings were finding ways and experimenting to exist on this earth studying a variety of natural happenings around them. The evolution of Music from those ancient times to the present times indeed , makes it an interesting subject of study. Hence the Theory of Indian Music has been given a weightage of 30% marks and it is a study of History of sounds culminating to shruti madhur Music , concepts of Indian Music ,study of types of swar and laya patterns , placement of notes on shrutis / swarsthanas, History of varied musical instruments, contribution of important personalities to the development of music, study of texts written by connoisseurs, development and evolution of forms etc. The inter disciplinary aspect of music and its connect to society and its trends is also an important subject of study.

**In this document, Learning Outcome of Hindustani Music (Vocal / Melodic) and Carnatic Music (Vocal /Melodic) has been discussed.**

**Hindustani Music – Vocal /Melodic**

Hindustani Music at the Higher Secondary level comprises majorly of classical music in both

vocal and instrumental. In vocal Music or melodic instruments like violin , sitar , flute etc the study of ragas is important along with a few elements of semi classical like devotional music , semi classical music forms and folk music . The tala and laya which are played on percussive instruments is also extremely important at this stage as Music is incomplete without the amalgamation of swar and tala

### **Curriculum expectations in Music .**

The Learning Outcomes for Classes XI and XII are a continuation of the Learning Outcomes of the Secondary Stage. As we know the process of learning progresses in a continuum. The content and teaching-learning strategies vary in terms of complexity and variety as learners enter the senior secondary stage of education. This stands for Learning outcomes in classes XI & XII where the LO s are quite similar but the complexity and variety increases to let the learners have a deeper insight in the subject. Learning at different stages is an extension of education. Learning outcomes are interconnected with the process of pedagogy and its results. The process of teaching and learning requires a dynamic framework of knowledge and an understanding of cultural, social make up of the learners. Hence the process is neither static nor prescriptive rather it demands flexibility in pedagogical processes. It calls for attention of all development, keeping a keen eye on the cultural diversity of our country which itself is a very rich resource.

Therefore the focus in Music is on multiple features like Indian Classical Music , the stages of evolution, the important people who made rich contributions , the important texts written, the legacy or gharana , the elements and variety in folk music , implications of Music on the societal trends, rituals , connection of music to language, social sciences, science , mathematics . Music has great scope in intra-arts like dance, theatre . So focus on such aspects is essential to gauge the implications of music on other art forms . Even museums, historical monuments , sculptures give a big outlet to the historical study in Indian Music. Visits to the above places and to watch cultural programmes is essential to understand cultural diversity and a variety of scope in Indian Music. Advertisements for travel , product , messages have great input of music in them . Study of such aspects is very important and a compulsory part of Indian Music. As Music is based on performance there should be many opportunities given to the learners to perform on various platforms like school assembly, inter section class activities , small programmes celebrated in institutions or any other.

Hence while studying Music students are expected to know;

- the different types of notes practiced in different ragas
- identification and application of the raga in varied forms of Music like bhajan, film song , folk song , ghazal etc.
- the simple Taals practiced in Music.
- Folk Music or regional music to understand the Music of the common people. Learning as many folk songs possible will create awareness about the language , thought process , specific tune and rhythm specific to every region in our country. It will help us to realize how Music is a part of lives of every Indian and the associations of Music on varied occasions .
- The vastness and beauty of film music (old and new ) meaningfully
- The musicians playing and singing a raga in their specific styles to understand the treatment of the notes in the specific raga . Also children are expected to realise how inspite of the same notes each raga has a scope of sounding different due to the treatment it gets from individuals in different gharanas.
- The variety of rhythmic patterns, an interesting aspect of Indian Music

## Hindustani Music

### Class XI

#### Practical (Vocal and Melodic )

Learning Outcomes	Suggested Pedagogical Practices
<p><b>The learner ;</b></p> <ol style="list-style-type: none"> <li>1. Understands the concept of <b>Naad</b> and <b>Dhwani</b> and relates to dhwani which are musical and non – musical</li> <li>2. Sings <b>alankars</b> of shuddha notes in different speed and <b>creates</b> alankars in shuddha notes , documents them and sings</li> <li>3. Understand the concept of <b>saptak</b> and <b>ashtak</b> while practicing <b>alankars</b> with their variations               <ul style="list-style-type: none"> <li>- Sings alankars with a combination of shuddha and komal notes</li> </ul> </li> </ol>	<p><i>The learners may be provided opportunities individually or in groups and encouraged to—</i></p> <ul style="list-style-type: none"> <li>- Practise the aspects of Naad (<i>types of naad – aahat naad and anahat naad</i>) and Dhwani</li> <li>- Listen to many types of dhwani that are in the immediate surroundings – Musical, Non – Musical and understand their characteristics</li> <li>- Practise Alankars in different speed (Madhya laya , drut laya)</li> <li>- in Shuddha swar (7) complex combinations in a series like (both ascending and descending order) while understanding the concept of ashtak               <ul style="list-style-type: none"> <li>• sa re ma ga , re ga pa ma -----</li> <li>• sa sa ga re , re re ma ga -----</li> <li>• Any other the teacher or child can create</li> <li>• combination of Komal and Shuddha (12)</li> <li>sa <u>re</u> re <u>ga</u> ga -----</li> <li>• according to the ragas prescribed in syllabus given above</li> </ul> </li> </ul>

<p>4. Understands the concept of <b>shruti</b></p> <ul style="list-style-type: none"> <li>- explains how the swaras are placed on a table of 22 shrutis.</li> </ul> <p>5. Understands the structure and application of the following Ragas - <b>Alhaiya Bilaval, Bhupali, Khamaj, Yaman, Jaunpuri, Bihag, Bhairav, Bhimpalasi</b></p> <ul style="list-style-type: none"> <li>- Sings the swaras of particular ragas according to the placement of swaras on the shrutis</li> <li>- Sings by <b>creating alankars</b> in ragas</li> <li>- Understands the importance of <b>aroha , avroha and pakad</b> in a raga</li> <li>- Sings aroha , avroha and pakad and tries <b>elaboration of swara patterns</b></li> <li>- Understands the role of <b>vaadi , samvaadi</b> and <b>other swaras</b> while</li> </ul>	<ul style="list-style-type: none"> <li>• sa re ga , re ga pa , ga pa dha, pa dha saa (Raga Bhupali – Ascending order)</li> <li>• sa <u>re</u> , <u>re</u> ga , ga ma, ma pa, pa <u>dha</u> , <u>dha</u> ni , ni saa sa ni ,ni <u>dha</u> , <u>dha</u> pa , pa ma , ma gaa , gaa <u>re</u> , <u>re</u> saa</li> </ul> <p>(Ascending and descending order raga bhairav)</p> <ul style="list-style-type: none"> <li>- They should sing /play the seven notes simply or through any raga they have learnt at the secondary level to understand these concepts</li> <li>- Listen to varied shrutis and swaras by singing /playing of notes in different ragas (face to face mode, records etc).e.g. notes in Alhaiya Bilaval, Bhupali, Khamaj, Yaman, Jaunpuri, Bihag, Bhairav, Bhimpalasi (the 12 swaras sung in Hindustani Music are present in the swaras of these ragas)</li> <li>- Learns the concept of 22 shrutis by drawing the table</li> </ul> <p><b>Learning of Ragas in the syllabus (Alhaiya Bilaval, Bhupali, Khamaj, Yaman, Jaunpuri, Bihag, Bhairav, Bhimpalasi)</b></p> <ul style="list-style-type: none"> <li>- learns aroha , avroha of a raga . then learns the vaadi, samvaadi , anuvaadi and vivadi (if any) swaras and the</li> </ul>
---	---

<p>creating different combinations through notes in a Raga</p> <ul style="list-style-type: none"> <li>- Sings <b>chhota khyal</b> compositions</li> <li>- Sings a composition in <b>Bada khyal</b> – 12 matras and 24 matras</li> <li>- Sings compositions in <b>different talas</b></li> <li>- -Sings ragas by incorporating <b>aalap and tana</b> in both bada khyal and chhota khyal</li> </ul> <p>6. Recites all <b>talas</b> with hand movements</p> <ul style="list-style-type: none"> <li>- Understands the concept of matras in different talas and their application in the compositions</li> </ul>	<p>pakad or main challan in a raga .This will correspond to swar elaboration , creating different combinations /patterns with swaras</p> <ul style="list-style-type: none"> <li>- Learns chhota / drut khyals / plays razakhani or masitkhani gat in the particular raga in different talas (atleast 2)</li> <li>- the words in any composition broken up in a particular laya/tala pattern is an element of focus and comprehension . So this element has to be considered and pointed out from time to time .</li> <li>- learns sargams /swar patterns/alankarik tanas in a raga in swift tempo / drut, balancing with the tala and gati of the khyal</li> <li>- Learns bada khyal /vilambit khyal in 12 matras gradually expanding it to 24 units</li> <li>- Learns to infuse swar patterns in vilambit khyal and drut khyal</li> </ul> <ul style="list-style-type: none"> <li>- Practices recitation of Taals like Tritaal, Keherva, Dadra, Ektaal, Chautaal, Sultal and understands the concepts of Vibhag, Matra, Tali, Khali, Sam, Theka with hand movements</li> <li>- Listens to the taals played on Tabla or on Electronic tabla and understands the</li> </ul>
--	---

<p>7. Identifies the <b>pattern of swaras of a raga</b> in folk music, film music, regional music, devotional music or any other form</p> <p>8. Sings atleast 2 types of <b>semi classical music</b> Dadra , Kajri, Bhakti geet</p> <p>9. Sings and analyses <b>folk songs</b></p> <p>10. Sings and understands the swaras , tala ,</p>	<p>theka</p> <ul style="list-style-type: none"> <li>- Sings different compositions in different talas to understand the gati /laya and the patterns played</li> <li>- Plays Alap, Jor, Jhala ,Meend ,Todas in all the prescribed Raags.</li> <li>- Ability to recognise raagas from the phrases of swaras.</li> <li>- Listens to many forms of Music to get an idea of different forms of Music prevailing in our country e.g. ragas in classical music (vocal and instrumental both ), folk music prevailing in different states , prayer songs , seasonal songs, ritualistic music , folk music etc .</li> <li>- Learns semi classical forms like dadra, kajri , bhakti geet</li> <li>- Learns Light Music like geet , regional songs, patriotic songs, prayer songs etc</li> <li>- Knowledge of Folk Music and its analysis Learns Folk Music of different states; <ul style="list-style-type: none"> <li>• Learn two folk songs in one’s mother tongue</li> <li>• Any two folk songs in any other language</li> <li>• folk instrument of any region /state.</li> </ul> </li> </ul>
---	--



<p>meaning of the <b>national anthem and national song</b> and connects to the history of the songs to understand the national importance</p>	<p><i>The song will always have themes connected to birth, marriage, festivals , rituals and traditions in respective communities and many such happenings in a society . Try to find out the meaning of the words, know the dialect and analyse the theme.</i></p> <ul style="list-style-type: none"> <li>• Learns Vande Mataram and the National Anthem – words, swar , tala and its history</li> <li>• One devotional song and two prarthangeets.</li> <li>• Knowledge of structure and tuning of the Instrument which has been opted .</li> </ul> <p>Find out similar swar patterns in Film Music/ Regional Film Music/ Folk Music and document the same in your copy</p>
---	---

## Class XI

### Theory (Vocal and Melodic )

Learning Outcomes	Suggested Pedagogical Practices
<p>The learner;</p> <ol style="list-style-type: none"> <li>1. <b>Appreciates Aesthetics</b> in varied forms of Music</li> <li>2. Differentiates between;               <ul style="list-style-type: none"> <li>- Classical Music, semi classical music , light music and folk music</li> <li>- <b>-Compares and writes</b> about the forms learnt</li> </ul> </li> <li>3. Defines the <b>technical Terms</b> of Hindustani Music</li> <li>4. Comprehends the <b>evolution of ragas</b> and the historical aspect along with</li> </ol>	<p><b>The learners may be provided with opportunities individually or in groups and encouraged to ;</b></p> <ul style="list-style-type: none"> <li>- Comprehend the given terms , co-relates with the practical part and defines the following with examples               <ul style="list-style-type: none"> <li>• Music                   <ul style="list-style-type: none"> <li>○ Classical Music–Hindustani and Karnataka</li> <li>○ Semi Classical Music</li> <li>○ Light Music</li> <li>○ Folk Music</li> </ul> </li> </ul> </li> <li>- Studies the technical terms -Dhwani, Naad, Shruti, Swara, Saptak, Ashtak, Varna, Raag, Jati, Gram, Murchhana Laya and its variants, Gat (Masitkhani, Razakhani), Taal, Vibhag, Matra, Tali, Khali, Sam, Theka</li> <li>- Corroborates them to practical learning</li> <li>- <b>Understand the following terminologies given to Ragas and simultaneously read about the progressive history of Indian Classical Music</b></li> </ul> <p>Margi–Desi</p>

<p><b>terminologies</b></p> <p>5. Writes compositions in <b>Bhatkhande</b> and <b>Paluskar</b> notation system</p> <p>6. Knows the <b>history of music in ancient times</b></p> <p>7. Learns about the elements of Music mentioned in the <b>ancient treatises</b></p> <p>8. Understands the theory behind <b>classification</b> of Musical Instruments and its connect to <b>Mathematics and Physics</b></p>	<p>Nibaddha–Anibaddha Gan</p> <p>Evolution of Raag</p> <p>Thaat–Raag System</p> <p>- <b>Learns to write the Notation System as laid down by</b></p> <p>5. V N Bhatkhande Notation System</p> <p>6. V D Paluskar Notation system</p> <p>- Reads about Music during the time of Ramayan and Mahabharat</p> <p>- Elementary knowledge of Musical Treatises: Samved, Natyashastra, Brihadesi</p> <p>- <b>Classification of Indian Musical Instruments</b></p> <ul style="list-style-type: none"> <li>• Tata-Stringed Instruments</li> <li>• Avanadha-Percussive Instruments</li> <li>• Sushira– Wind Instruments</li> <li>• Ghana– Metallic Instruments</li> </ul> <p>(e.g.Tanpura, Sitar, Sarod, Guitar, Violin, Esraj, Flute, Harmonium, Table, Pakhavaj</p> <p>- Makes a project related to Science and Mathematics through the Musical instruments (the mathematical dimensions of MI and the rationale behind the production of sound) –</p>
---	---

<p>9. Appreciates the <b>contribution of many musicians</b> to the world of music</p>	<ul style="list-style-type: none"> <li>- Drawing pictures of Musical Instruments to understand a structure and its connection to Mathematics and Physics</li> <li>- Brief Study of various Gharanas/Baanis of vocal &amp; Instrumental Music</li> <li>❖ Gharanas of Vocal Music–Gwalior, Agra, Kirana, Jaipur–Atrouli, Delhi, Patiala, Rampur–Sahasvaan</li> <li>❖ Gharana of Instrumental Music– Senia</li> <li>❖ Life sketches and contribution of leading scholars and Musicians; <ul style="list-style-type: none"> <li>• Amir Khusro</li> <li>• Swami Haridas</li> <li>• MiyaTansen</li> <li>• Baiju Bavra</li> <li>• Sadarang– Adarang</li> <li>• V N Bhatkhande</li> <li>• V D Paluskar</li> </ul> </li> </ul>
---	---

## Class XII

### Practical (Vocal and Melodic )

Learning Outcomes	Suggested Pedagogical Practices
<p><b>The learner;</b></p> <p>1. Understands the structure and application of the following Ragas - <b>Bhairavi, Asavari, Kafi, Bihag, Desh, Bageshwari, Shudh Sarang, Malkauns</b></p> <ul style="list-style-type: none"> <li>- Sings the swaras of particular ragas according to the placement of <b>swaras</b> on the <b>shrutis</b></li> <li>- Sings by <b>creating alankars</b> in ragas</li> <li>- Understands the importance of <b>aroha, avroha and pakad</b> in a raga</li> <li>- Sings aroha , avroha and pakad and tries <b>elaboration of swara patterns</b></li> <li>- Understands the role of <b>vaadi , samvaadi</b> and <b>other swaras</b> while creating different combinations through notes in a Raga</li> <li>- Sings <b>chhota khyal</b> compositions</li> <li>- Sings <b>sargam geet</b> in 2 ragas</li> <li>- Sings <b>Lakshangeet</b> in 1 raga</li> <li>- Sings a composition in <b>Bada khyal – 12 matras and 24 matras</b></li> <li>- Sings compositions in <b>different talas</b></li> <li>- Sings ragas by incorporating <b>aalap and tana</b> in both bada khyal and</li> </ul>	<p><i>The learners may be provided opportunities individually or in groups and encouraged to—</i></p> <ul style="list-style-type: none"> <li>- <b>Learn the following Raags;</b> Bhairavi, Asavari, Kafi, Bihag, Desh, Bageshwari, Shudh Sarang, Malkauns in detail (as per the norms of classical music).</li> </ul> <p>They should also learn the following forms to understand the structure of ragas.</p> <ul style="list-style-type: none"> <li>• VilambitKhyal – One</li> <li>• Drut Khyal in all the raags with alap and taan in each raag</li> <li>• Lakshangeet – One</li> <li>• Sargangeet – two</li> <li>• Dhamar – One</li> <li>• Tarana – One</li> </ul> <p><b>While playing on Melodic instruments the following are important ;</b></p> <ul style="list-style-type: none"> <li>❖ Two Gats in prescribed Raags with simple elaborations and few Todas.</li> <li>❖ Alap, Jor, Jhala in any two of the prescribed Raags with ability to produce meend of minimum two Swaras.</li> </ul>

<p>chhota khyal</p> <ul style="list-style-type: none"> <li>- Sings <b>Dhamar</b> in 1 raga</li> <li>- -Sings <b>Tarana</b> in 1 raga</li> </ul> <p>2. Appreciates the <b>implementation of these ragas</b> in folk songs , film songs , prayer songs</p> <p>3. <b>Creation</b> of compositions(any form) based on the notes of ragas</p> <p>4. Recites all <b>talas</b> with hand movements</p> <ul style="list-style-type: none"> <li>- Understands the concept of matras in different talas and their application in the compositions</li> </ul> <p>5. Able to <b>tune</b> the tanpura to the required scale and to tune the instrument opted</p>	<ul style="list-style-type: none"> <li>❖ Drut Gat with Todas and Jhalas in all the prescribed Ragas.</li> <li>❖ One Composition each in Rupak and in Jhaptal in prescribed Raags.</li> <li>❖ Two Dhuns.</li> </ul> <ul style="list-style-type: none"> <li>- Listen to many types of recorded music and identify the swaras in different types of compositions . Then they should be motivated to sing the patterns of notes to be able to understand the raga . The method of how a raga is treated when film songs are made , devotional songs are composed or any other will be the interesting point of discussion</li> <li>- Be motivated to create compositions in particular ragas</li> <li>- Ability to recognise raags from the phrases of swaras.</li> </ul> <p><b>Learn the following Taals;</b></p> <ul style="list-style-type: none"> <li>• Recitation of Thekas along with beats on the hand - Dhamar, Jhaptaal, Roopak, Tevra, Sooltaal – Thah and Dugun</li> <li>• Ability to play simple Theka of any two taals on Tabla</li> <li>- -Knowledge of structure and tuning of the Instrument which has been opted.</li> </ul>
---	---

## Class XII

### Theory (Vocal and Melodic )

Learning Outcomes	Suggested Pedagogical Practices
<p><b>The learner;</b></p> <ol style="list-style-type: none"> <li>1. <b>Explains</b> the definitions of the technical concepts</li> <li>2. <b>Identifies</b> these technical terms in the compositions he/she sings/plays</li> <li>3. Understand the important <b>concept of time theory in the ragas, parnel praveshak , shuddha ,chhayalang and sankeerna</b></li> <li>4. Appreciates the <b>progress and evolution</b> of Music since the Vedic Era to the present times</li> <li>5. Understands the role of <b>musical treatises</b></li> </ol> <p>❖ Appreciates the <b>role of institutions</b> in promoting classical music and bringing it to the arena of common people</p>	<p><i>The learners may be provided opportunities individually or in groups and encouraged to—</i></p> <ul style="list-style-type: none"> <li>- Understand and know the Technical Terms of Hindustani Music Varna, Alankar, Alap, Taan, Gamak, Kan, Khatka, Murki, Meend, Kirtana, Zamzama, Ghaseet, Sut, Gram, Murchhana</li> <li>- Important features of the Raag system as prevalent in the contemporary times (connect it to the ragas in the prescribed syllabus) <ul style="list-style-type: none"> <li>• Time Theory of Raag</li> <li>• Shuddha, Chhayalag and Sankeerna raag</li> <li>• Parnel Praveshakraag</li> </ul> </li> <li>- <b>Study the historical Development of Indian Music</b> <ol style="list-style-type: none"> <li><b>A. Vedic Period to 13<sup>th</sup> century</b> <ul style="list-style-type: none"> <li>• Brief introduction of Musical Treatises SangeetRatnakar, SangeetMa kranda, SangeetParijaat</li> <li>• JatiGayan and PrabandhaGayan</li> </ul> </li> <li><b>B. 14<sup>th</sup> century to the Contemporary</b></li> </ol> </li> </ul>

<p>❖ <b>Relates</b> to contemporary Musical Instruments practiced in the present times, <b>identifies artists</b> playing the instrument and <b>enjoys listening</b> to the music</p> <p>❖ Expresses the art of notation system in Music which is a key to documenting creative compositions by writing</p> <p>❖ Appreciate the <b>contribution of musicians</b> in developing the art form</p>	<p><b>period</b></p> <ul style="list-style-type: none"> <li>• Origin and development of gharanas</li> <li>• Development of Educational</li> <li>• Institutions in Music</li> </ul> <p>- Introduction of some contemporary Musical Instruments (Tanpura, Sitar, Sarod, Santoor, Pakhawaj, Flute, Shehnai, Jhanjh, Manjeera, Guitar, Synthesizer, Violin)</p> <p>- <b>Understand and describe Raags and notation writing:</b></p> <p>Bhairavi, Asavari, Kafi, Bihag, Desh, Bageshwari, SudhSarang, Malkauns</p> <p><b>Know about Life sketches and contribution of leading scholars and Musicians</b></p> <ul style="list-style-type: none"> <li>• Vishnu Narayan Bhatkhande</li> <li>• Vishnu DigambarPaluskar</li> <li>• Baba Bahram Khan</li> <li>• Ahmed JaanThirakawa</li> <li>• KantheMaharaj</li> <li>• Pagal Das</li> <li>• Bhimsen Joshi</li> <li>• Bismillah Khan</li> <li>• ZakirHussain</li> <li>• MoinuddinAminuddinDagar Brothers</li> <li>• Kumar Gandharva</li> </ul>
---	---



## **Carnatic Music – Vocal /Melodic Instruments**

The course content for Carnatic Music at the Higher Secondary level mainly includes the study of classical music pertaining to both vocal and melodic instruments like violin, veena, flute etc. Along with learning the practical aspects of classical music, a few elements of semi-classical, devotional and folk music, it is important to study the theoretical aspects as well. Since tala and laya are the inseparable elements for all forms of music, it becomes essential to know the details about different talas along with gaining knowledge about different ragas.

### **Curriculum expectations in Music**

Music education at the Higher Secondary level has to be viewed as a continuous process i.e. knowledge gained in classes XI would pave way for learning other topics in class XII. Sometimes, a learner may also come across similar topics in both the classes but the complexity would definitely increase in the next class leading to an in-depth study of the subject.

In Class XI & XII, music education will mainly focus on getting an overview of different classical, semi-classical, light and folk music. Further, knowledge about the historical aspects of Indian music including its origin and development, the important musicological texts, development of two separate systems - Carnatic & Hindustani Music would also be included. Knowing the technical terms would make it easier for the learner to understand the nuances of the subject. Furthermore, a deeper study about the different ragas, talas and their classifications, the different types of musical forms would also be an important aspect of the curriculum. Apart from this, understanding the different types of musical instruments and their classifications would widen the musical knowledge of the learner. Last but not the least, it is very important for a learner to know about the great musicians and musicologists of the yester years who have immensely contributed for the growth and development of music. Along with the knowledge of theoretical aspects, when learners are given ample opportunities to share his musical knowledge in front of an audience, it would help to boost their level of confidence. Undoubtedly, the appreciations received from the listeners would make them indulge deeper into their musical endeavors.

## Carnatic Music

### Class XI

#### Practical (Vocal and Melodic Instruments)

Learning Outcomes	Suggested Pedagogical Practices
<p><b>The learner:</b></p> <ol style="list-style-type: none"><li>1. Understands the concept of <b>Nada &amp; Dhvani</b> and differentiates between musical and non – musical sounds</li><li>2. Sings/Plays Sapta Swaras and various basic exercises viz. Sarali Varisai, Madhya Stayi Varisai, Janta Varisai, Vakra Varisai /Dhatu Varisai in raga Mayamalavagowla</li><li>3. Sings/Plays Pillari and Sanchari Geetams</li></ol>	<p><i>The learners may be provided opportunities individually or in groups and encouraged to—</i></p> <ul style="list-style-type: none"><li>• Experience the two aspects of Nada (<i>aahata nada and anaahata nada</i>)</li><li>• Listen to many types of dhvani (sounds) available in the immediate surroundings and classify them into Musical and Non – Musical by understanding their characteristics</li><li>• Practice various varisais in all the 3 degrees of speed in Mayamalavagowla raga and Adi tala.</li><li>• Sing all these exercises in akaara, ukaara, ikaara, okaara and Humkaara i.e. singing all these swara patterns using the sounds ‘a’, ‘u’, ‘i’, ‘o’ and ‘hum’</li><li>• Practice these exercises in other Sampurna ragas like- Shankarabharanam, Kalyani, Kharaharapriya, Simhendra Madhyamam etc. prescribed in the course</li><li>• Learn the Arohanam and Avarohanam of the raga in which the geetam are learnt</li><li>• Learn the swara and sahitya part of the</li></ul>

<p>4. Sings/Plays <b>Swarajati/ Jatiswaram</b> in ragas Bilahari, Shankarabharanam and Kalyani</p> <p>5. Sings/Plays <b>Tana Varnam</b> in Adi Tala</p>	<p>geetam</p> <ul style="list-style-type: none"> <li>• Sing the whole geetam in all the 3 speeds</li> <li>• Notate the geetams and write both swaram and the corresponding sahityam in the notebook</li> <li>• Learn the swara and the corresponding Sahityam of the Swarajati</li> <li>• Analyse the structure of the composition</li> <li>• Observe and point out the structural differences between a geetam and a swarajati</li> <li>• Document the observations in the notebook and share it with peers in order to exchange their ideas</li> <li>• Learn the swara (Dhaatu) and sahityam (Maatu) of purvngam (Pallavi, Anupallavi and Muktai Swaram) of a varnam in Adi talam and practice the same in 2 degrees of speed</li> <li>• Learn the swara portion (Dhaatu) of uttaraangam (Charanam &amp; Chittai Swaram) of the varnam and the practice the whole varnam in 2 degrees of speed</li> <li>• Write down the names of different angas of a varnam in your notebook</li> <li>• Search and find out the name of the composer of this varnam</li> <li>• Collect some basic details about the composer and look for other compositions of the same composer and</li> </ul>
---	--

<p>6. Sings/Plays simple <b>Keertanams</b> composed by Purandaradasa, Annamacharya and Bhadrachalam Ramadasa</p> <p>7. Sings/Plays <b>Kritis</b> composed by Sri Tyagaraja, Sri Muttuswami Deekshitar, Sri Syama Shastri and Maharaja Swati Tirunal set to talas like- Adi, Rupakam, Misra Chapu and Khanda Chapu</p> <p>8. Sings/Plays various aspects of <b>Manodharma Sangeeta</b> like- raga</p>	<p>collate the details in the notebook</p> <ul style="list-style-type: none"> <li>• Learn the compositions by understanding the lyrics and its meanings</li> <li>• Write the different angas of a Keertanam and analyze how it is different from other musical forms learnt till now</li> <li>• Compare the structure of the compositions by these composers and note down the differences, if any</li> <li>• Learn 4 different compositions composed by these prominent composers of Carnatic Music</li> <li>• Understand the meaning of the lyrics</li> <li>• Search and note down the different decorative angas used by these composers in their compositions like- Sangatis, Swaraaksharaas, Chittai Swaram, Swara Sahityam, different types of Mudras etc.</li> <li>• Analyze the difference between the compositions of these composers based on the factors like the structure, lyrical content, language etc.</li> <li>• Learn the important elements which are taken into consideration while elaborating a raga like the vadi and samvadi swaras, specific prayogas like</li> </ul>
--	--

<p>alapana and Kalpana Swara in Adi and Rupakam talas</p>	<p>janta swara, dhatu swara etc.</p> <ul style="list-style-type: none"> <li>• Learn the procedure to elaborate a particular raga during a raga alapana</li> <li>• Practice the technique of singing Kalpana Swara in a given talam</li> <li>• Learn to incorporate simple swara patterns/ teermanam and korvai while singing Kalpana swara</li> <li>• Listen to various stalwarts in the field and try to imbibe various aspects of manodharma in order to enhance their creative abilities</li> </ul>
<p>9. Sings/Plays and understand the characteristics of other musical forms like- <b>Padam, Javali</b> and <b>Tillana</b></p>	<ul style="list-style-type: none"> <li>• Learn the compositions after thoroughly understanding the meaning of the lyrics</li> <li>• Learn the difference between the musical forms Padam and Javali</li> <li>• Pay attention to the various rhythmic syllables used in the musical form Tillana</li> <li>• Analyze the difference in the method of rendition of a Padam or Tillana while presenting a musical and a dance performance</li> <li>• Listen to Music of different regions to get an idea about the various forms of Music prevailing in our country e.g. folk music of specific area, prayer songs, ritualistic music etc.</li> </ul>
<p>10. Sings/Plays and analyses <b>folk songs</b></p>	<ul style="list-style-type: none"> <li>• Learn two folk songs in one's mother tongue based on any theme like birth, marriage, festivals etc.</li> </ul>

<p>11. Sings/ Plays musical compositions and other aspects of Manodharma sangeeta in the prescribed ragas</p>	<ul style="list-style-type: none"> <li>• Learns semi-classical forms like bhajans, patriotic songs, prayer songs etc.</li> <li>• Find out the meaning of the words, know the dialect and analyse the theme.</li> <li>• Find out the various folk instruments played along with these songs</li> <li>• Learn the arohanam/ avarohanam and other important details of all the following ragas- Hamsadhwani, Bhairavi, Kharharapriya, Kalyani, Kamboji, Bilahari, Madhyamavati, Arabhi, Anandabhairavi, Kanada, Dhanyasi, Vasanta, Simhendra Madhyamam. Mohanam and Sankarabharanam before learning any composition in them</li> </ul>
---	---

## Class XI

### Theory (Vocal and Melodic Instruments)

Learning Outcomes	Suggested Pedagogical Practices
<p>The learner:</p> <ol style="list-style-type: none"><li>1. <b>Appreciates Aesthetics</b> in varied forms of Music</li><li>2. Describes various forms of music and differentiates between Classical Music, semi classical music, light music and folk music</li><li>3. Defines the <b>Technical Terms</b> of Carnatic Music</li></ol>	<p><b>The learners may be provided with opportunities individually or in groups and encouraged to:</b></p> <ul style="list-style-type: none"><li>- Comprehend the given terms, co-relate them with the practical aspects and define each of the following with proper examples<ul style="list-style-type: none"><li>o Music</li><li>o Classical Music–Hindustani and Karnataka</li><li>o Semi Classical Music</li><li>o Light Music</li><li>o Folk Music</li></ul></li><li>- Study the technical terms - Dhvani, Nadam, Swaram, Swarasthanam, Shruti, Sthayi, Gamkam, Ragam, Melam, Layam, Talam, Vadi, Samvadi, Vivadi, Anuvadi, Amsa – Nyasa, Jati, Dhatu, Matu</li><li>- Relate and apply them while learning the practical aspects</li><li>- Understand the chronological order of evolution of the term raga starting from Grama-Murcchana and Jati system</li><li>- Know the various stages of development of Swaras starting from Udatta, Anudatta etc. till the formation of Sapta Swaras</li></ul>

<p>4. Comprehends the <b>evolution of ragas</b> and grasps the details about various musicological texts or <i>Lakshanagranthas</i></p>	<ul style="list-style-type: none"> <li>- Learn when and how ragas were formed and classified during different periods</li> <li>- Collect details about music given in Lakshanagranthas like- Silappadikaram, Natyashastra,</li> <li>- Sangeeta Ratnakara and Chaturdandi Prakasika</li> <li>- Gather details about when and why did Indian classical music get divided into two systems- Carnatic and Hindustani, which is prevalent today</li> <li>- Read about the <i>Bhakti</i> movement and the way it paved for the development of <i>Bhajana Sampradaya</i></li> <li>- Learn about the evolution of the concept of Mela and the development of 72 Melakarta Scheme</li> <li>- Understand the difference between a Janaka and Janya ragas</li> <li>- Learn the various classifications of Janya ragas</li> </ul>
<p>5. Understands the different stages of development of Indian classical music</p>	<ul style="list-style-type: none"> <li>- Describe each raga given in the syllabus by highlighting its characteristics (<i>Lakshanas</i>)</li> <li>- Relate and apply Bhoota Sankha and Katapayadi formula to the 72 Melakarta Scheme</li> <li>- Know the structure of all the 7 Basic talas (<i>Suladi Sapta Talas</i>)</li> <li>- Identify and name the Shadangas of tala</li> </ul>



<p>6. <b>Classifies ragas</b> and identifies its features</p>	<ul style="list-style-type: none"> <li>- Derive all the 35 talas from the 7 basic talas by incorporating the 5 different jatis in each of the 7 talas</li> <li>- Understand the structure and the method of reckoning Khanda and Misra Chapu talas</li> <li>- Differentiate between Suladi sapta talas and Chapu talas</li> <li>- Understand the basic structure of each musical form</li> <li>- Identify and name the angas in all these forms</li> <li>- Find out the difference between all these musical forms based on their structure, lyrical content, language used etc.</li> <li>- Classify musical forms as Kalpita and Kalpana (Manodharma) Sangeeta and understand which musical form falls under each of these categories</li> <li>- Learn how to write the notation of a Varnam by clearly mentioning its different angas and by using all the symbols used of notating e.g. division of tala structure, sthayi of the swara etc.</li> </ul>
<p>7. Understands the <b>prominent talas</b> used in Carnatic Music and reckons all the <b>Sapta Talas</b> using appropriate angas</p>	<ul style="list-style-type: none"> <li>- Know the classification of Indian Musical Instruments <ul style="list-style-type: none"> <li>Tata-Stringed Instruments</li> <li>Avanadha-Percussive Instruments <ul style="list-style-type: none"> <li>Sushira– Wind Instruments</li> <li>Ghana– Metallic Instruments</li> </ul> </li> </ul> </li> </ul>

8. Identifies different **musical forms** and notates a Varnam

(e.g. Tanpura, Veena, Violin, Sitar, Sarod, Guitar, Gottu Vadyam, Esraj, Flute, Harmonium, Mridangam, Ghatam, Tabla, Pakhavaj)

- Understand the basic scientific principles involved in the process of sound production and designing and structure of musical instruments
- Make a project related to Musical instruments based on Science and Mathematics (e.g. the mathematical dimensions of MI and the rationale behind the production of sound)
- Draw pictures of Musical Instruments to understand the structure and its connection to Mathematics and Physics
- Briefly study the life of prominent composers and musicians of Carnatic Music
  - Tyagraja
  - Muttuswami Dikshitar
  - Syama Shastri
  - Swati Tiunal
  - Purandaradasa
  - Narayana Teertha
  - Bhadrachala Ramdas
  - Jayadeva
  - M.S. Subhulakshmi
  - Lalgudi G. Jayaraman
  - Palghat T.S. Mani Iyer
  - Ariyakkudi Ramanuja Iyengar
  - Vishnu Narayan Bhatkhande

<p>9. Understands the theory behind <b>classification</b> of Musical Instruments and its connection to <b>Mathematics and Physics</b></p> <p>10. Appreciates the <b>contribution of various musicians</b> to the world of music</p>	<ul style="list-style-type: none"> <li>• Miyan Tansen</li> <li>• Vishnu Digambar Palushkar</li> <li>• Bismillah Khan</li> <li>• Bhimsen Joshi</li> <li>• Ravi Shankar</li> <li>• Alla Rakha</li> <li>• Dhanammal</li> <li>• T.R. Mhalingam</li> <li>• Pudhukotta Dakshinamurty Pillai</li> <li>• T.N. Rajaratnam Pillai</li> <li>• Prof. P. Samba Moorty</li> </ul> <p>- Understand the contribution made by them to the field of Carnatic Music</p>
---	--

DRAFT

## Class XII

### Practical (Vocal and Melodic Instruments)

Learning Outcomes	Suggested Pedagogical Practices
<p><b>The learner:</b></p> <ol style="list-style-type: none"> <li>1. Sings/Plays various exercises viz. <b>Mandra Sthayi Varisai, Tara Sthayi Varisai and Sapta Tala Alankara</b> in raga Mayamalavagowla</li> <li>2. Understands the structure and application of the following Ragas – Pantuvarali, Todi, Nata, Gaula, Varali, Sri, Saveri, Mukhari, Kedargaula, Purvikalyani, Keeravani, Ritigaula, Surati</li> <li>3. Sings/Plays Sanchari Geetams and Lakshana Geetams</li> </ol>	<p><i>The learners may be provided opportunities individually or in groups and encouraged to—</i></p> <ul style="list-style-type: none"> <li>• Learn all these exercises and practice in 3 degrees of speed</li> <li>• Sing all these exercises in akaara, ukaara, ikaara, okaara and Humkaara i.e. singing all these swara patterns using the sounds ‘a’, ‘u’, ‘i’, ‘o’ and ‘hum’</li> <li>- Learn the arohanam/ avarohanam and other important details of all the given ragas</li> <li>- Practice all the basic exercises in Sampurna ragas like- Pantuvarali, Todi, Keeravani etc.</li> <li>• Learn the Arohanam and Avarohanam of the raga in which the geetam are learnt</li> <li>• Learn the swara and sahitya part of the geetam</li> <li>• Sing the whole geetam in all the 3 speeds</li> <li>• Notate the geetams and write both swaram and the corresponding sahityam in the notebook</li> <li>• Note down the details about the</li> </ul>



<p>6. Sings/Plays simple <b>Utsava Sampradaya Keertanams/ Tarangam/ Divyanam Keertanam</b> composed by Purandaradasa, Narayana Teertha and Annamacharya</p> <p>7. Sings/Plays Advanced <b>Kritis</b> composed by Sri Gopalakrishna Bharati, Sri Tyagaraja, Sri Muttuswami Deekshitar, Sri Syama Shastri and Maharaja Swati Tirunal</p>	<ul style="list-style-type: none"> <li>• Collect some basic details about the composers. Find out other compositions of the same composer and collate the details in the notebook</li> <li>• Learn the compositions by understanding the lyrics and its meanings</li> <li>• Write the names of different angas of <b>Utsava Sampradaya Keertanams/ Tarangam/ Divyanam Keertanam</b> and analyze how it is different from each other</li> <li>• Learn 5 different compositions composed by these prominent composers of Carnatic Music which may include a composition from any of the group kritis like- Ghana raga Pancharatna, Navargaha Kritis, Kamalamba Navavarna Kritis Navaratri Kritis etc.</li> <li>• Understand the meaning of the lyrics</li> <li>• Search and note down the different decorative angas used by these composers in their compositions like- Sangatis, Swaraaksharaas, Chittai Swaram, Swara Sahityam, different types of Mudras etc.</li> <li>• Analyze the difference between the compositions of these composers based on the factors like the structure, lyrical content, language etc.</li> </ul>
--	--

<p>8. Sings/Plays various aspects of <b>Manodharma Sangeeta</b> like- raga alapana Niraval, Kalpana Swara in Adi, Rupakam and Chapu talas and RTP in Adi or Khanda Triputa Talam</p>	<ul style="list-style-type: none"> <li>• Learn the important elements which are taken into consideration while elaborating a raga like the vadi and samvadi swaras, specific prayogas like janta swara, dhatu swara etc.</li> <li>• Learn the procedure to elaborate a particular raga during a raga alapana and Tanam</li> <li>• Understand the procedure to sing Niraval for a specific section of the composition</li> <li>• Practice the technique of singing Kalpana Swara in a given talam</li> <li>• Learn to incorporate simple swara patterns/ teermanam and korvai while singing Kalpana swara</li> <li>• Learn a simple Pallavi in Adi or Khanda Triputa talam</li> <li>• Listen to various stalwarts in the field and try to imbibe various aspects of manodharma in order to enhance their creative abilities</li> </ul>
<p>9. Sings/Plays and understand the characteristics of other musical forms like- <b>Padam, Javali</b> and <b>Tillana</b></p>	<ul style="list-style-type: none"> <li>• Learn the compositions after thoroughly understanding the meaning of the lyrics</li> <li>• Learn the difference between the musical forms Padam and Javali</li> <li>• Pay attention to the various rhythmic syllables used in the musical form Tillana</li> <li>• Analyze the difference in the method of rendition of a Padam or Tillana</li> </ul>

<p>10. Sings/Plays and analyses <b>folk songs</b></p> <p>11. Sings/ Plays and understands the swara, tala and meaning of the <b>national anthem and national song</b> and relate it to the history of the songs to understand its national importance</p> <p>12. Identifies the parts of the tanpura and tunes it properly</p>	<p>while presenting a musical and a dance performance</p> <ul style="list-style-type: none"> <li>• Listen to Music of different regions to get an idea about the various forms of Music prevailing in our country e.g. folk music of specific area, prayer songs, ritualistic music etc.</li> <li>• Learn two folk songs in one's mother tongue based on any theme like birth, marriage, festivals etc.</li> <li>• Learns semi-classical forms like bhajans, patriotic songs, prayer songs etc.</li> <li>• Find out the meaning of the words, know the dialect and analyse the theme.</li> <li>• Find out the various folk instruments played along with these songs</li> <li>• Learn the national song- 'Vande Mataram' and the National Anthem by understanding its melodic structure, swars, talas and its history</li> <li>• Find out similar swara patterns in Film Music/ Regional Music/ Folk Music and document the same in the notebook</li> </ul>
--	---



**Class XII**

**Theory (Vocal and Melodic Instruments)**

Learning Outcomes	Suggested Pedagogical Practices
<p><b>The learner:</b></p> <p>1. <b>Explains</b> the definitions of the technical terms of Carnatic Music</p> <p>2. Knows the <b>historical development of Indian music</b> from vedic to contemporary period</p>	<p><i>The learners may be provided opportunities individually or in groups and encouraged to—</i></p> <ul style="list-style-type: none"> <li>- Understand the Technical Terms and concepts of Carnatic Music Janaka, Janya, Vrajya, Vakra, gamaka, Arudi, Eduppu (Graha), Prabandha, Grama, Murchhna, Aksharakala, Matra, Anya Swara, Vadya vrinda, Vrinda gana, Sangeeta Katcheri</li> <li>- Trace the evolution of music forms <i>geeti, gatha, gana</i> and <i>prabandha</i></li> <li>- Understand the origin and classification of musical instruments into <i>Tata, Sushira, Avanaddha</i> and <i>Ghana vadyas</i></li> <li>- Briefly study the contents of Lakshanagranthas such as <i>Sangeeta Samparadaya Pradarshini, Swarmelakalanidhi, Raga Vibhodha, Brihaddesi, Sangeeta Saramrita</i></li> <li>- Know the reason of the inclusion of foreign musical instruments into Indian classical music</li> <li>- Learn other methods of raga classification such as ‘ghana- naya-desya’ and ‘Upanga-Bhashanga’</li> </ul>

<p>3. <b>Classifies ragas</b> and knows it features</p> <p>4. Understands the fundamentals of notating a composition and notates a Kriti</p> <p>5. Understands the talas used in Carnatic music other the Suladi Sapta Talas</p>	<ul style="list-style-type: none"> <li>- Know the principles of <i>Asampoorna Mela Paddhati</i> created by Venkatamakhi</li> <li>- Describe the important features of all the ragas given in the syllabus</li> <li>- Know all the rules to be followed while notating a composition</li> <li>- Identify the tala structure and the <i>kala pramanam</i> of a given kriti and notate it appropriately</li> <li>- Understand the structure of Desadi and Madhyadi tala and varieties of Chapu talas including - Tisra, Khanda, Misra and Sankirna Chapu</li> <li>- Analyze how it is different from Adi tala</li> <li>- Understand the structural and lyrical differences between various musical forms such as Padam, Javali, Tillana, Kriti, Tiruppugazh, Viruttam and Ragamalika</li> <li>- Know the technicalities of presenting a Ragam-Tanam-Pallavi</li> <li>- Understand the structure of a Pallavi with special reference to <i>pada garbham</i> or <i>arudi</i></li> <li>- Know the different types of Pallavi e.g. <i>Rettai Pallavi, Ragamalika Pallavi, Talamalika Pallavi</i> etc.</li> </ul>
--	---

<p>6. Identifies different musical forms of Carnatic music</p>	<ul style="list-style-type: none"> <li>- Know details about various foreign musical instruments such as Violin, Mandolin, Saxophone, Clarinet, Guitar, Keyboard used in Indian classical music and identify their basic structure</li> </ul>
<p>7. Understands the musical form RTP in detail</p>	<ul style="list-style-type: none"> <li>- Know the classification of Indian Musical Instruments <ul style="list-style-type: none"> <li>Tata-Stringed Instruments</li> <li>Avanadha-Percussive Instruments</li> <li>Sushira- Wind Instruments</li> <li>Ghana- Metallic Instruments</li> </ul> </li> </ul>
<p>8. Identifies the various foreign instruments incorporated in Indian Classical music</p>	<ul style="list-style-type: none"> <li>- Briefly study the life of prominent composers and musicians of Carnatic Music <ul style="list-style-type: none"> <li>○ Bhadrachalam Ramadas</li> <li>○ Kshetrayya</li> <li>○ Narayana Teertha</li> <li>○ Gopalakrishna Bharati</li> <li>○ Annamacharya</li> <li>○ Mahavaidyanath Iyer</li> </ul> </li> </ul>
<p>9. Classifies musical instruments according to 'Four-Fold classification'</p>	<ul style="list-style-type: none"> <li>○ Patnam Subramanya Iyer</li> <li>○ Ramnad Srinivas Iyengar</li> <li>○ Mysore Vasudevacharya</li> <li>○ Harikesanallur Mutthaiya Bhagavatar</li> <li>○ Musiri Subramanya Iyer</li> <li>○ Chembai Vaidyanatha Bhagavatar</li> <li>○ Semmangudi Srinivasa Iyer</li> </ul>

10. Appreciates the **contribution of various musicians** to the world of music

- G N Balasubramanyam
- Mysore Duraiswamy Iyengar
- Karaikudi Samasiva Iyer
- K S Narayanaswamy
- Palani Subramanya Pillai
- Tanjore Vaidyanatha Iyer
- Dwaram Venkataswamy Naidu
- Rajamanikkam Pillai
- Palladam Sanjeeva Rao
- M Balamuralikrishna

- Understand the contribution made by them to the field of Carnatic Music

**LEARNING OUTCOME FOR THE  
HEALTH AND PHYSICAL EDUCATION  
HIGHER SECONDARY STAGE**

Health and well being of school children include physical, social, emotional and mental development. The curriculum of Health, Physical Education and Yoga provides students with a wide range of opportunities to learn, practice, and demonstrate knowledge and skills related to healthy and active living by engaging himself /herself in various games, sports and physical exercises. Yoga is also seen as an important input that contribute to the health and well being of children and, therefore, considered as an integral part of this subject area. All these physical activities in any form will help to engage students in learning about the factors that contribute to health and well-being and in building life skills to live healthy and active. Its implementation empowers students not only to make healthy choices in the schools but also promote active lifestyle outside the school in their day today life. In order to ensure effective implementation of health and physical education curriculum in schools, it is important for teachers and school administrators to provide learning and equal opportunities to students.

We all know that healthy, safe, and caring social and physical environments support learning and contribute in physical, emotional, social, and mental development of students. Being passing the stages of adolescence, their engagement in games, sports and physical activities will help in channelization of their energy and thereby saving them from the engagement in risky behavior such drug abuse, violence and injuries etc. Conditions for learning and opportunities for physical activities and games along with healthy living also depend on social and physical environments. Community can play an important role in sustaining physically healthy and socially supportive environment. How effective will be the implementation of health and physical education curriculum in schools, is also influenced on the factors such as the availability of play ground, distance of schools from home, facilities of transport, availability of sports equipment, physical education teacher (PET) and coaches. The attitude of the school administration also plays pivotal role. Prevailing socio- cultural environment towards physical education also contributes to its promotion.

Student engagement becomes meaningful when they are valuing their learning both in

academic and health and wellbeing activities. Student engagement is strengthened when opportunities are provided for students to take up leadership roles. Health and physical education curriculum also enable students in honing up the skills to become self-directed, self-monitored learners.

At this Stage, Health and Physical Education subject is treated as one of the optional subjects. It has been designed to understand a holistic view of health, the principles, theory and practices of physical education and yoga. This subject has also avenues for being streamed into that open up to several vocational streams –health related areas, physical education and yoga. It acknowledges the need for a plurality of pedagogical techniques that reinforce the integration of theory and practice.

### **CURRICULAR EXPECTATIONS:**

At higher secondary stage learners are expected to:

- Reinforce the understanding of concepts related to health and physical education and yoga and contribution of physical education and yoga for health and wellbeing.
- Analyse and able to interpret the role of physiological, psychological and sociological aspects on physical education and yoga .
- Understand history, theory, skills and practice of various games, sports and yogic practices for fitness development.
- Develop awareness, positive attitude and skills to deal with the challenges of adolescence.
- Understand policies and programmes and their implication for improving health and wellbeing.
- Equip themselves about safety and security aspects related to health, physical education and yoga.
- Develop leadership skills by involving themselves in opportunities in the organization of various competitions and tournaments.
- Apply scientific methods in training, measurement and evaluation of various fundamental skills.
- Promote excellence in games and sports at the national and international level.
- Demonstrates the ability to listen to another person’s viewpoints, at the same time expresses own viewpoints in an assertive and effective manner.

- Understand the special needs of children with chronic health impairments and disabilities.
- Imbibe values of honesty, integrity, cooperation, team spirit, empathy and concern for life.
- Appreciate the interrelationships of health and physical education and other subject areas such as languages, science and social sciences.
- Acquaint them with various vocational and career options in these areas.

### Class XI

Suggested Pedagogical Processes	Learning Outcomes
<p><b>The learners may be provided with opportunities individually/ in groups and encouraged to -</b></p> <ul style="list-style-type: none"> <li>• Collect and analysis information from various sources including from research studies about the health needs of all children and adolescents and the impact of physical activities, games, sports and yogic practices on various body systems (muscular, digestive, circulatory and respiratory) and thereby on their health and well being.</li> <li>• Gather data from peer group of own school as well as from nearby schools about growth and development occurring to them, the prevailing myths and misconceptions related to growing up and prepare a report and share with the class.</li> <li>• Discuss healthy eating habits, active lifestyle and personal hygiene.</li> <li>• Study the literature to understand the</li> </ul>	<p><b>The learner –</b></p> <ul style="list-style-type: none"> <li>• Describes health, its dimensions and health needs of children including differently-abled children.</li> <li>• Analyses the contribution of physical education and yoga for promoting health, wellbeing and growth and development occurring during adolescence.</li> <li>• Explains the concepts of physical education, its aim, objectives, nature and terminologies used in physical education.</li> <li>• Prepares project on physical and physiological aspects of physical education and sports in term of conditioning, warming up and cooling down and effects of exercises and yogic practices different body systems.</li> <li>• Describes the components of physical</li> </ul>

<p>concepts and terminologies used in health and physical education and yoga and discuss them in the class.</p> <ul style="list-style-type: none"> <li>• Consult literatures from various international sports federation and write down history, basic rules and regulations, movement skills, game structures, measurements of play grounds field and specifications, equipment's needed for various games and sports organized in the school playground and indoor.</li> <li>• Gather pictures and videos, film clips, view them and make poster/charts related to warming up, cooling down, skills of the games. and yogic practices, for observation and practicing these regularly in a proper right way.</li> <li>• Discuss the factors such as the attitude of parents, school, society, cultural environment and the availability of facilities (playground sports equipment, period, and other facilities) and teachers and coaches needed for participation in games and sports and yogic practices.</li> <li>• Collect information and discuss the <u>procedure</u> about various tests such as 1000-meter run/ walk test for muscular endurance: sit and reach test for flexibility: and assessment of body mass index (BMI) and the waist-hip ratio or waist-to-hip ratio (WHR)</li> </ul>	<p>fitness and apply this understanding while participating in physical activities games, sport and yoga in an indoor and outdoor environments .</p> <ul style="list-style-type: none"> <li>• Knows authentic sources of information about the history, rules ,game structures, basic rules ,movement skills, measurements of play grounds field and specifications ,equipments and yoga guideline.</li> <li>• Participates actively and regularly in a wide variety of physical activities and yogic practices.</li> <li>• Describes factors that can influence and support participation in physical activity throughout their lives.</li> <li>• Shows a realistic understanding of own strengths and areas that need improvement and takes constructive feedback to build strengths for further improvement in the needed skills.</li> <li>• Demonstrates proficiency and application of skills while participating in games and sports of choice.</li> <li>• Shares information about rules history, organizational aspects including medals and winners of various sports competitions held at the local/states/national and international levels</li> <li>• Describes scientific methods of training,</li> </ul>
--	--



<ul style="list-style-type: none"> <li>• Gather information about tournaments held at international, national and state levels and even at local levels and prepare a charts on knockouts for different competitions.</li> <li>• Imbibe positive attitude and openness to accept critical and constructive comments. Observe and uses the feedback given by peer, teachers and others regarding strengths and areas that need improvement and take work for correction and improvement of skills related to those games, sport and yogic practices.</li> <li>• Discuss means and methods for improvement of health-related physical fitness in regular physical</li> <li>• Education classes in schools and also share the skills acquired in school while participating in activities organized by the community sports group.</li> <li>• Gather information about issues related to safety and injuries in school playground and outside (<i>home, in the workplace, in the community</i>) by discussing with peers, teachers and viewing videos and prepare safety guidelines including First -aid kit and share through school magazine/ news bulletin/ website etc.</li> <li>• By involving children of all categories</li> </ul>	<p>measurement and evaluation of various fundamental skills.</p> <ul style="list-style-type: none"> <li>• Explains application of various tests of measurement and evaluation for major components of physical fitness.</li> <li>• Lists and explains different types of competitions that are being organised at national and International level.</li> <li>• Demonstrates interpersonal skills and empathy as effective member of the team .in the class as well as in the playground and support others in the development of sport skills and confidence.</li> <li>• Describes strategies related to personal safety and injury prevention that can be applied to make safer choices in a variety of situations and settings,) and reduce the risk of personal injury as well of others.</li> <li>• Communicates effectively, using verbal or non-verbal means to interpret information accurately as participate in physical activities games, sports and yoga. ,</li> <li>• Demonstrate respectful and active listening skills while instructions are being given in the class and during playground activities.</li> <li>• Display caring attitude by being a good listener to someone who is dealing with</li> </ul>
--	--

<p>works in group to design plan and assign duty while finalizing programmes, games and sports including modified games and other protocols for annual sport day.</p> <ul style="list-style-type: none"> <li>• Discuss healthy eating habits, active lifestyle and personal hygiene.</li> <li>• participate and be a part of health screening camps/ activities/, programmes in school and community</li> <li>• awareness including postural defects, physical deformities, home remedies etc.</li> <li>• Play multiple roles as team leader, coaches, captains, players, referees, and others to mimic a professional sports organization.</li> <li>• Gather information about the organization of various important sports competitions (Olympic Games, Para-Olympics, Commonwealth Games, Asian Games, National Games, National Championships, Inter University Championships, S.G.F.I. Games).</li> <li>• Prepare a project including financial estimates, planning sports and athletics, physical infrastructure requirements, communication with participating countries/teams accommodation, food, sanitation and other facilities for team members and coaches, inviting referees etc and share it in the class.</li> </ul>	<p>a stressful situation</p> <ul style="list-style-type: none"> <li>• Gives constructive feedback to support others in the development of skills and to counter myths stigma connected to mental illness.</li> </ul>
---	--

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Discuss to clarify myths/ misconceptions about food choices, diet and nutrition,</li><li>• Discrimination in sports through presentation /group discussions.</li><li>• Gather data about height and body weight of different age groups, calculate BMI and prepare timeline of different developmental changes occurring in those groups.</li></ul> |  |
|---|--|

DRAFT

## Class XII (Health & Physical Education)

Suggested Pedagogical Processes	Suggested Pedagogical Processes
<p><b>The learners may be provided with opportunities individually/ in groups and encouraged to -</b></p> <ul style="list-style-type: none"> <li>• Collect information about major diseases: Communicable – Typhoid, Influenza, Malaria, Dengue, HIV Infection and Corona virus and Non Communicable – Diabetes, Hypertension, their causes seasonal appearance of diseases and preventive measures ..Prepare a chart and share it in the class.</li> <li>• Conduct survey to understand the process of spreading of Communicable diseases. Read literature to understand the method of spread of disease. They may be encouraged to collect data from nearby hospital about various diseases. They can prepare a report on spread, causes, prevention, and cure of diseases. They may share their findings through role plays, skits and also campaign in the community for prevention. Explains the importance of being physically active.</li> <li>• Gather data from secondary sources about life style diseases (Diabetes, Hypertension, Depression) and present their observations/ ideas/ learning</li> </ul>	<p><b>The learner –</b></p> <ul style="list-style-type: none"> <li>• Identifies factors affecting health and wellbeing.</li> <li>• Demonstrate an understanding of major diseases, their causes, signs prevention and their effects on personal health and well-being as well as on the society.</li> <li>• Explores the relationship between endurance activity choices (running, skipping, swimming etc.) and sufficient hydration and healthy eating habits.</li> <li>• Identifies behaviors and actions that can lead to injuries, and explains the factors that can influence them to engage in or and refrain from potentially harmful or and dangerous behavior.</li> <li>• Demonstrates skills, techniques, and tactics related to games and sports of interest.</li> <li>• Knows theoretical aspect of various games and sports and applies this knowledge while playing the games and sports of interest.</li> <li>• Demonstrates skill proficiency in</li> </ul>

<p>through flow charts/ concept maps/ graphs/ diagram and using ICT tools, etc.</p> <ul style="list-style-type: none"> <li>• Share and discuss their beliefs regarding various myths, taboos, superstitions, related to eating habits etc., by discussing /debating openly and helping them to clarify their beliefs by presenting the scientific facts. They may also be involved in awareness campaigns in the community.</li> <li>• Participate in experiential learning activities like role plays, case studies, developing comics exhibiting peer pressure /potentially harmful /dangerous behavior verses healthy behavior and the ways of dealing with emotions and mental health by channelizing energy in these activities.</li> <li>• View film clips, make poster/charts and discuss active lifestyle and personal hygiene and healthy eating habits including nutritious diet required for sport persons (right foods in the right amounts having carbohydrates, vitamins, minerals, protein, calcium, iron and fats).</li> <li>• Clarify myths/ misconceptions about food choices, diet and nutrition, through presentation /group discussions.</li> <li>• Identify trusted adults and seek their advice and support in various issues</li> </ul>	<p>preparatory and supplementary exercises, training and fitness tests in the game and sport of interest.</p> <ul style="list-style-type: none"> <li>• Describe various yogic practices with scientific attributes and apply this understanding in one's life and living to develop a healthy habit, humane values, physical, emotional and mental health through these yogic practices</li> <li>• Apply understanding of the connections between substance use, addictive behaviors, and physical and mental health to make safer choices about the use of medications, drugs, and other substances.</li> <li>• Describe the social and financial impacts (<i>e.g. medical costs, emotional trauma for friends and family</i>) of doping behaviours and that can lead to actions, injury or harm and loss of life.</li> <li>• Analyses various government policies and programmes related to health education and other related areas and their implementation.</li> <li>• Describe psychological (Interest, Aptitude and Motivation) and sociological (caste, class, and gender and differently abled) aspects of physical education, games and sports.</li> </ul>
---	--

<p>related to growth and development and in risky situation.</p> <ul style="list-style-type: none"> <li>• Design an effective campaign by exhibiting posters, street play, and pamphlets focusing on healthy life style.</li> <li>• .Gather information about various policies, programmes related to health, education and sports (National Health Policies, National Policy on Education, School health services and midday meal programme ,National Rural Health Mission, Sports policy, Khelo India, Fit India Movement Adolescence Education programme School health and wellbeing and others) career options, awards, and courses in physical education, sports and yoga and share with other student through charts /poster /PPTs .</li> <li>• collect information from various books, e-books, magazines, journals, libraries, internet, etc., about psychological (interest, aptitude and motivation) and sociological (caste, class, and gender and differently disabled caste, class, and gender and differently disabled) aspects of physical education, games and sports. Prepare a project and share it in the class or in the school magazine.</li> <li>• opt a range of different options for practicing skills of a game or sport and give them autonomy to choose activity they found most comfortable. The</li> </ul>	<ul style="list-style-type: none"> <li>• Explains about nutritious diet required for sport persons. (right foods in the right amounts having carbohydrates, vitamins, minerals, protein, calcium, iron and fats)</li> <li>• Describe causes of common sports injuries: sprain, strain, contusion, abrasion, cramp, muscle pull, dislocation and fracture etc, and explains the use of first aid.</li> <li>• Knows about doping and describes its consequences in term of physical, mental and social health; and also, in terms of financial and legal aspects.</li> <li>• Shows awareness about various career options, awards, and courses in physical education, sports and yoga.</li> <li>• Applies skill related to physical fitness means and methods for improvement of power, speed, agility and balance</li> <li>• Demonstrates methods of measurement and evaluation related to power, speed, agility, static and dynamic balance through various activities and tests.</li> <li>• Shows confidence while participating in physical activities, including individual game sports, and/or recreational activities</li> <li>• Acceptance of special children in</li> </ul>
--	--

<p>children then participated in the activity in which they feel most comfortable and confident. This confidence encourages them to face challenges themselves with more difficult tasks, and gradually sharpening mastering the skill.</p> <ul style="list-style-type: none"> <li>• Take challenge and responsibility for self learning of skills/ tactics of a particular sport and also help others classmates to learn.</li> <li>• Gather information about issues related to safety and injuries in school playground and outside (<i>home, in the workplace, in the community</i>) by discussing with peers, teachers and viewing videos and prepare safety guidelines including First -aid kit and share through school magazine/ news bulletin/ website etc.</li> <li>• Gather information about the anti-doping rules, prohibited drug/medicine, and nutritional supplements. Assess the risk and consequences even of being caught. Doping in advertently verses the role of healthy sport cultures, nutrition, and the importance of being fully informed of issues related to clean games and sports.</li> <li>• Participate and perform short and long-distance runs, sit-ups, pull-ups, push-ups, vertical and standing broad jumps, sports and games of choice to develop</li> </ul>	<p>classroom as well as in the community</p> <ul style="list-style-type: none"> <li>• Acceptance of losing or winning a game with same spirit called sportspersonship spirit</li> </ul>
---	---

<p>fundamental skills and also undergo physical fitness tests.</p> <ul style="list-style-type: none"> <li>• Participate/ attend advance training in the sports/games of their interest.</li> <li>• Collect information about different aspects of yoga (yama, niyama, asana, pranayama, pratyahara, kriyas, dharana, dhyana). Its origin, history and its impact of yoga and prepare a chart about the yogic practices he/she is doing regularly.</li> <li>• Collect information about various schemes scholarship of government of India, various policies, programmes, career options, awards, and courses in physical education, sports and yoga and share them at the appropriate platform.</li> <li>• Participate and be a part of health screening camps/ activities/, programmes in school and community including postural defects, physical deformities, etc.</li> <li>• Development of leadership qualities, decision making, team spirit through games and sports.</li> </ul>	
--	--

### **Physical Education can benefit Children with Cerebral Palsy – An Exemplar**

Uma is an adolescent with Cerebral Palsy. Her condition does not discourage her to attend school with other children in the neighborhood. Her condition is a result of insufficient oxygen supply in the brain tissue during her birth and has resulted in weakening of muscles. She believes that by participating in school sports and physical



education not only improves her physical strength but also her mental health. She had to face a number of barriers because of muscle spasticity and physical weakness but her physical education teacher motivated her to try and participate and that was a new exposure for her. In her words “I didn’t believe that I could do run and felt good that I achieved something. I was doing something everyone else was doing and I was enjoying. I also felt that I was a part of a team and other children were helping me. I was not in the back seat as I usually I am. I could also get out of my wheel chair which was such a good feeling. I wish I do this more often”

DRAFT

**LEARNING OUTCOMES FOR THE  
HUMAN ECOLOGY AND FAMILY SCIENCE  
HIGHER SECONDARY STAGE**

**Introduction**

Human Ecology and Family Sciences (HEFS) is a subject that is close to the subject widely known as 'Home Science'. Home Science is an umbrella term for a field of Applied Sciences, made up of Food and Nutrition, Human Development and Family Studies, Textiles and Apparel Science, Resource Management, and Communication and Extension. All these domains have their specific content and focus, which besides being important for the individual and the family also provide ample scope for professional avenues of higher education and career opportunities in diversified related fields. Home Science has been reconceptualized as a new field titled 'Human Ecology and Family Sciences' in the National Curriculum Framework (NCF) – 2005 of the NCERT. In this, there was an effort to break away from the conventional framework of the Home Science in significant way by liquidating the boundaries among different areas of this subject. Thus, the HEFS pertains to the study of human beings in relation to their environment and the dynamic relationships that children, adolescents and adults have with the various physical, economic, social and psychological elements in their ecology. It resolves to reconstruct knowledge in all areas from the perspective of the learner by focusing on enhancement of human resources, productivity, and better quality of life for individuals and society in general. People cannot be productive if they are physically unwell due to unhygienic personal and environmental conditions, children cannot learn if they are mal-nourished, or scared from abuse and neglect, people cannot work if disturbed by family turmoil or resource management problems, rejection in the family, workplace or society or domestic violence. Conversely, human beings whose development is fostered by positive environmental surroundings, nurturing relationships, good nutrition, access to basic amenities for health, safety and sanitary living conditions, can be well-adjusted and productive citizens. The HEFS targets to build professionals suitable for government, private institutions, industries, voluntary organizations and entrepreneurship in Food and Nutrition, Human Development and Family Studies, Textiles and Apparel, Resource Management, and Communication and Extension and fields related to these. It also intends to impart professional training to students and broaden their horizons by exposure to various training and job opportunities.

These Learning Outcomes are tuned with the spirit of this subject that is free of gender bias and capable of challenging young minds and teachers for creative study and practical work. The success of this effort lies in the hands of the teachers who must create a stimulating learning environment full of scope for time management; freedom of imagination, questioning, exploring, experimenting, and reflecting. Project work, field trips, research through observation and interview, problem solving, group discussions, creative work, review assignments, quiz, debates, etc. are the added essence in strengthening the learning and understanding the concepts as well as processes. Efforts must be made to add, modify, or adapt the activities and pedagogy to suit the contemporary needs and local contexts that embrace urban, rural, tribal, varied socio-economical groups, special needs and gender perspective. The whole process of teaching and learning must be made interesting and inclusive to promote the active participation of each learner, create and sustain their interest, and enhance learning in multifarious ways.

## **Curricular Expectations**

At this stage, the learners are expected to,

1. Recognize self in relation to family, society and workplace.
2. Be aware about their role and responsibilities as a productive and responsible individual and as a member of one's family, community, society and workplace and deliver accordingly.
3. Demonstrate respect for human dignity and rights, equity and equality with special reference to gender justice.
4. Develop sensitivity and critically analyze the issues and concerns of diversity, honesty, integrity, cooperation, and concern for the family, society and fellow workers .
5. Appreciate the importance of communication within the family, society and workplace.
6. Demonstrate and apply work simplification or time and energy saving methods in daily life.
7. Recognize the relevance of interdependence integrating learning across diverse domains forming linkages with other academic subjects and daily life experiences.
8. Recognize significance, relevance, application and scope of each domain within HEFS such as Food and Nutrition, Human Development and Family Studies, Textiles

and Apparel, Resource Management, and Communication and Extension and apply suitably .

9. Appreciate the scope of HEFS as a professional career, explore varied career options and make informed career choices.
10. Appreciate the potential of entrepreneurship as each of the areas in HEFS has ample scope for it and create opportunity to become an entrepreneur.
11. Appreciate the importance of life skills, nuances of work, livelihood and careers and practice these in real life.
12. Display positive attitude to promote mental health, self-control, concentration, discipline and perseverance.

DRAFT

## Pedagogical Processes and Learning Outcomes for Class XI

Suggested Pedagogical Processes	Learning outcomes
<p><b>The learners may be provided opportunities individually / in groups and encouraged to –</b></p> <ul style="list-style-type: none"> <li>☉ Ask learners to think what makes them different from others, write those aspects of theirs as ‘self identity’. Identify what they need to stick to in themselves and what they should try to change.</li> <li>☉ Facilitate learners to understand the concept of ‘self’ in its true sense by reading the theory of Erik H. Erikson i.e. ‘Eight Stages of Psychosocial Development’ through discussion mode</li> <li>☉ What are the subjects HEFS can relate to? Prepare a web of fields/subjects around HEFS exploring all subjects in relation to HEFS.</li> <li>☉ Teachers may create a place in school where learners can sit and express their feelings with full freedom.</li> <li>☉ Try this fun activity with your learners, in which ask them to Recall any one incident of life where they were feeling low, disappointed, or not well. Let them write about how their friends/ family/ parents helped them to overcome that situation/ feeling.</li> <li>☉ Ask your learners to prepare a ‘My family Tree’ poster. They can Either stick family photos onto the tree or draw pictures of their family (grandparents at the top, next their parents then they and their siblings at the bottom). Finally, under each family member’s photo/picture write down the names of each family member, their relationship with them (grandfather, mother, etc.) and their own feelings for each one of them.</li> <li>☉ In a class discussion ask learners to prepare on a topic ‘My</li> </ul>	<p><b>The learner –</b></p> <ul style="list-style-type: none"> <li>☉ Explains the importance of knowing oneself and the significance of developing a positive sense of self across life span, eg, <ul style="list-style-type: none"> <li>▪ Describes the factors influencing the development of selfhood and identity</li> <li>▪ Explains why the period of adolescence is critical for the development of self and identity</li> <li>▪ Describes the characteristics of self across life stages</li> <li>▪ Narrates the subject with respect to his/ her own context</li> </ul> </li> <li>☉ Describes the term HEFS in the context, its relationship with science, sociology, and other subjects, and explains the reasons for adapting the term HEFS and its role in sustaining and augmenting the quality of life</li> </ul>

<p>family’ and Make a video and share with friends, family, and classmates.</p> <ul style="list-style-type: none"> <li>☉ Ask learners to Make list of people and incidents from the family and society who has left any positive influence in their life.</li> <li>☉ Guide learners to Write few points on “how as a learner they can contribute to development of the society.”</li> <li>☉ Show and discuss the ‘Food Guide Pyramid’ to make learners understand the messages behind the illustration/s and text. Ask them to do the following tasks and share with teacher friends, classmates and family members: <ul style="list-style-type: none"> <li>- Label the food items given in pyramid with the major nutrient/s these are consumed for such as protein, carbohydrate etc.</li> <li>- Write down the reason for the broad base and narrow top of the food pyramid</li> </ul> </li> <li>☉ Facilitate planning and conduct of a small survey research on the existence of healthy/unhealthy eating habits in a selected group and discuss the results vis-à-vis fitness and well being.</li> <li>☉ Discuss food items which are rich sources of nutrients such as Protein, Iodine, Calcium, Iron, and Vitamins (A, B, C,) and describe the benefits of these nutrients including Vit. D, E,K)</li> <li>☉ Guide creation of leaflets (or any other visual aid forms) showing the information: about ‘How to keep oneself fit’, ‘Benefits of being fit’ nutritious recipes using low cost ingredients’, ‘How to increase iron, protein, Vit.C and calcium in the diet.</li> <li>☉ Discuss reason(s) behind obesity taking specific group e.g. among school age children.</li> <li>☉ Show a video/slides on the types of malnutrition and contributing factors.</li> <li>☉ Prepare questions and organize quiz competition for learners.</li> <li>☉ Facilitate learners to prepare an information bulletin on</li> </ul>	<ul style="list-style-type: none"> <li>☉ <b>Recognizes the importance of building healthy relationships and performing roles and responsibilities as a member of the family, community and society, eg,</b> <ul style="list-style-type: none"> <li>▪ Explains the meaning and importance of family and its functions for overall development of the individual</li> <li>▪ Demonstrates the knowledge of the family life cycle and analyzes dynamics within the family</li> <li>▪ Illustrates the interface between responsibilities and rights.</li> <li>▪ Conveys one’s own responsibilities towards self, family, community and the larger society.</li> <li>▪ Shows clarity of understanding, interdependence and integration on different factors of human relationships such as respect to self and others, care, compassion, compromise and adjustment.</li> </ul> </li> <li>☉ <b>Explains the significance, relevance, and application of</b></li> </ul>
--	---

food groups and share with others through various platforms.

- ☉ Guide learners to make a doodle art or a poster explaining the Benefits of Healthy Eating and nutrition or ‘Factors Affecting Nutritional Well-Being’ Share among family and friends.
- ☉ Guide learners to explore various campaigns and programmes catering to Adult’s health and wellness, its objectives and main features.
- ☉ Reflect on how food hygiene practices are maintained in homes taking examples from own houses.
- ☉ Facilitate learners to list down the points with suitable examples that must be kept in mind while maintaining food hygiene.
- ☉ Ask learners to reflect on how sanitation is maintained in the kitchen.
- ☉ Facilitate learners to explore the internet about the concept and history of money. Share the learning with the class then.
- ☉ Guide learners to create a video or audio on ‘Why budget making is important’, and share it among the family members and friends.
- ☉ Facilitate learners to create a questionnaire for survey to find out from young adults how much they are aware about the various investment avenues as well as the importance of financial management
- ☉ Ask learners to create a poster on “importance of savings” and try to make a little awareness about it.
- ☉ Explain learners about the family budgets, it’s important, Governmental Budget allocation for the year. Ask them to Find out what is the Financial Years and the budget system for our country.
- ☉ Guide learners to identify different clothing needed in summer and winter season? What is the textiles mainly used in these seasons and write about their qualities to be considered as suitable textiles and apparel in these

**food, nutrition, health, hygiene, fitness in life, eg,**

- Discusses the importance of the terms food, nutrition, nutrients, health, balanced diet, fitness, food groups, and the role of food and nutrition in maintaining health and fitness
- Classifies foods into appropriate groups and can plan balanced diets for specific groups
- Plans nutrient rich dishes for specific nutrients
- Identifies the factors which influence food habits of various groups of people e.g. adolescents
- Identifies the causes, symptoms and nutritional interventions related to eating disorders.
- Modifies diet related behavior in an appropriate manner.
- Describes the concept and dimension of wellness.
- Explains the health concerns and challenges of different groups e.g. adults.
- Identifies the consequences of under nutrition, over

seasons?

- ☉ Explain learners about clothing needs for infants, toddlers and adolescents. And ask them to write and suggest suitable textiles and apparel for these age groups and provide the rationale behind that.
- ☉ Facilitate learners to write down the differences for clothing for special needs children and find more about their clothing.
- ☉ Guide learners creating a understanding on textiles available at home and identify their names with the help of the family members. Also ask them to Collect different kinds of textiles available at home and identify their names with the help of the family members, Also, make a list of identified textiles available at home.
- ☉ Ask learners to read and learn more about textiles using internet for related text material and videos on the topics such as, textiles properties, fibers available in the nature (cotton, wool etc.), manufactured fibers (man-made fiber), emerging (eco-friendly) fibers, yarn processing, textiles production, textiles finishing and rug making
- ☉ Facilitate learners to create a table having three columns 'Different textiles, 'Textiles properties' and 'Material of the textiles. Fill them and share with classmates and teachers.
- ☉ Guide learners to Make an informative flowchart (draw pictures wherever necessary) from **fiber stage to textiles making** process for different natural fibers like cotton, silk and wool.
- ☉ Facilitate and guide learners to make a video explaining about Natural Fibres, 'Plant Fibres, 'Animal Fibres and 'Mineral Fibres and share. Collect their clothes and identify the fibres.
- ☉ Guide learners to make a list on new emerging fibers and collect their samples (take pictures from internet if not available at home) and paste them on a chart. Write down the major properties and uses in front of each fiber for

nutrition., and ignorance to immunization

- Conveys the importance of hygiene and sanitation for preventing food- borne diseases and follows hygienic practices.
- Describes the meaning of balanced diet, Recommended Dietary Allowances (RDAs) and apply the concept in planning and consuming diets.
- Identifies and explains nutrients in foods and the specific functions in maintaining health.
- Applies knowledge of the role of nutrition and healthy eating for disease prevention and wellness.
- Comprehends the role of nutrition and foods, and nutrient function, in maintaining normal health and nutrition support in disease throughout the life span.
- Narrates the aspects of nutrition behavior (eg. Socioeconomic status, culture, psychology,



example, pineapple, casein, jute, and banana fibers etc.

- ⊙ Ask learners to find out from the elders the different methods they used for taking care of their textiles and ask them to list them down.
- ⊙ Guide learners to prepare a chart having two columns 'Type of Communication' and 'Examples of each Type of Communication' for example: write 'Mass Communication' as response in first column and Radio, TV etc. in second column.
- ⊙ Ask learners to Prepare a list, compare, and discuss about various communication methods and latest technologies that are being used in today's world.
- ⊙ Show a video/slides on creating a brochure on how effective communication can be led by the adults in their professional lives.
- ⊙ Discuss with learners and list down various communication methods.
- ⊙ Ask learners to write about the types of media. Also, highlight which media is fast and easy to understand from their point of view. Give reason for the same.
- ⊙ Discuss with your learners and identify and reflect on examples from their daily life where they have faced problems because of defective communication.
- ⊙ Guide learners in creating an understanding and list down various communication skills and play games to develop communication skills.
- ⊙ Make a small interactive activity with learners and ask them to think of any word and develop a meaningful story/message starting with that word.
- ⊙ Ask the learners to play a game of 'guess the movie name' with family members. One person has to act without saying a word and others have to guess the movie. This will improve their non-verbal communication skill.
- ⊙ Ask learners to bring in a poem, short story, or novel from a writer they admire. They should choose an excerpt from the piece (no longer than two paragraphs) that they feel is

consumer choices, costs) and their application to health risks.

⊙ **Explains the significance, relevance, and application of efficient planning and management of resources and finance in life, eg,**

- Discusses the concept, characteristics, and, need of resource
- Identifies and classifies resources into human and non-human
- Illustrates the steps in the management process
- Describes the meaning and concept of financial management such as types of income, investment, family budget and savings
- Plans savings and investment for the family

⊙ **Explains the significance, relevance, application and care of textiles and apparel in life, eg,**

- Identifies general clothing needs for different stages of development and clothing needs of children with special needs.
- Identifies the characteristics of different types of textiles

a good example of that author's writing. It will develop a vigor in them to analyze the writing carefully and figure out what message it is conveying.

- ④ Guide your learners to select one topic of their interest, and ask them to prepare on it and then speak about it for 15 minutes. Make a video and share.
- ④ Teachers may send some topics or pictures/photographs/illustrations to the learners and ask them to write a story on their understanding of those pictures or topic.
- ④ Ask your learners to Select a topic of their interest for e.g. 'steps taken in this pandemic by the government are right or not?' Organize a group discussion on it with the family members. Ask someone to make a video and share it.
- ④ Ask learners to explore from internet more about the concepts of survival, growth and development.
- ④ Ask learners to observe or watch an activity of a child and try to find which domain of development is being demonstrated.
- ④ Ask learners to explore the internet and watch a video on the working of a daycare, creche and pre-school.
- ④ Discuss with your children and ask them to make a colorful poster on Milestone Development among preschoolers covering the domains of development and share them among teachers and classmates.
- ④ Guide learners to make a colorful awareness poster for children on "Importance of good Nutrition" or "Healthy Living habits".
- ④ Ask learners to Create a worksheet for children on any domain of development which will help them to elevate their learning and development.
- ④ Facilitate learners to explore from internet find out various Infrastructural and facilities of ECCE centers in India.
- ④ Guide learners to list down various Indian as well as other thinkers on the concept of Care and education to children. For e.g. (Montessori, Rabindranath Tagore, etc.) and

- Names and classifies the textiles commonly seen around
- Explain the production techniques of various natural and man-made fibers and their physical properties
- Explains the process of turning the fibre into Yarn and different types of yarn
- Describe the knowledge about various testing procedures at yarn stage and textiles stage for quality control.
- Describes main methods of textiles construction like weaving, knitting braiding and decorative textiles
- Explains the characteristic features of different weaves and embroideries of different parts of India
- List and describe various types of weaves, their properties and uses
- Elaborates what is dyeing and printing and classifies different dyeing and printing techniques
- Illustrates different textiles finishes.
- Narrates different pattern

<p>discuss their ideas with teachers and friends.</p> <ul style="list-style-type: none"> <li>☉ Ask learners to list down some culturally appropriate activities using low-cost material for children which will help in holistic development of a child.</li> <li>☉ Ask learners to explore from internet about the concept of experiential learning in care and education of a child.</li> </ul>	<p>development methods and develop production pattern and interpret pattern information.</p> <ul style="list-style-type: none"> <li>▪ Defines different surface ornamentation techniques for garment design.</li> <li>▪ Makes informed selection of textiles products for specific end use</li> <li>▪ Knows the process of care and maintenance of different tetiles including stain removal and laundry.</li> <li>▪ Explains the importance of measurements, sizing systems and demonstrate correct procedure of taking body measurements</li> <li>▪ Explains various parts, attachments and functions of a sewing machine and terminologies related to it.</li> <li>▪ Explains different tools and equipments required for measuring, marking cutting and sewing.</li> <li>▪ Evaluates the properties and performance of fibers, textiles, and textiles products.</li> <li>▪ Identifies and describe textiles defects</li> </ul>
---	--

	<ul style="list-style-type: none"> <li>▪ Explains factors affecting selection of appropriate textiles and apparel for various purposes</li> <li>▪ Describes structure of garment industry and different departments of textiles and garment industry and their working</li> </ul> <p>© Explains the significance, relevance, and application of communication skills, media and extension in life, eg,</p> <ul style="list-style-type: none"> <li>▪ Defines the concept and significance of communication in everyday life.</li> <li>▪ Explains the meaning and types of communication skills</li> <li>▪ Narrates various communication skills</li> <li>▪ Displays the skill of effective communication in the family and society</li> <li>▪ Enlists different types of communication media, classifies them and describes their functions.</li> </ul> <p>© Explains the significance, relevance, and application of human growth and development</p>
--	---

	<p><b>from a life span perspective, eg,</b></p> <ul style="list-style-type: none"><li>▪ Explains the concepts of survival, growth and development.</li><li>▪ Describes the relationship between growth, development and, health.</li><li>▪ Narrates the characteristics of different stages of human growth and development.</li><li>▪ Illustrates the developmental milestones for each stage of development.</li><li>▪ Describes development in different domains of development across life stages.</li><li>▪ Conveys the need for providing ‘care’ and ‘education’ at different stages of life.</li></ul>
--	---

## Pedagogical Processes and Learning Outcomes for Class XII

Suggested Pedagogical Processes	Learning outcomes
<p><b>The learners may be provided opportunities individually / in groups and encouraged to –</b></p> <ul style="list-style-type: none"> <li>Ⓢ Ask Learners to find out about the following from their family and nearby people, and prepare a brief report and share with teachers and classmates through email or any other digital media source:               <ul style="list-style-type: none"> <li>– Quality of Life (QoL) in their own context and in the context of the society.</li> <li>– Relationship between Quality of Life (QoL) and economic achievement.</li> <li>– Pertinent issues related to work, employment and careers.</li> </ul> </li> <li>Ⓢ Discuss and guide learners to write difference between standard of living and quality of life on their understanding of the chapter.</li> <li>Ⓢ Organize a discussion using online meeting platforms with learners on ‘pertinent issues related to work, employment and careers’. All the learners should be encouraged to participate in the discussion and share their own experiences with regard to the topic.</li> <li>• Discuss with learners and ask them to write the examples for following views of work in their notebook and share with friends and classmates requesting to add more examples. Collective</li> </ul>	<p><b>The learner –</b></p> <ul style="list-style-type: none"> <li>Ⓢ <b>Describes the importance of life skills, nuances of work, livelihood, careers, and entrepreneurship and their relationship with the quality of life, eg,</b> <ul style="list-style-type: none"> <li>▪ Corresponds the importance and strategies for meaningful work, healthy work environment, livelihood, careers and entrepreneurship</li> <li>▪ Expands the concepts of standard of living and quality of life</li> <li>▪ Displays the importance of social responsibility and volunteerism</li> <li>▪ Explains the attitudes and approaches that contribute to quality of work life and successful careers</li> <li>▪ Shows sensitivity to the issues of work in relation to traditional occupations and special groups such as</li> </ul> </li> </ul>

<p>response may be shared with the teachers:</p> <ul style="list-style-type: none"> <li>- 'Job' / means of making a 'living'</li> <li>- Task/ duty that entails a sense of obligation</li> <li>- 'Dharma' or duty</li> <li>- Part of spiritual practice</li> <li>- Source of joy and fulfillment</li> <li>- Scope</li> <li>- Hope</li> <li>- Self-esteem and dignity</li> <li>- Symbol of status, power and control</li> <li>- Rewarding experience</li> <li>- Self development and self-actualization</li> </ul> <p>Ⓢ Guide learners to search on the internet and ask them find out at least five individuals/ institutions/ organizations that opted for traditional occupations of India for example 'Khadi'. Ask learners to prepare a report having contact details, kind of traditional occupation opted, aim/ goal/ objective of the occupation, inspiration behind opting such occupation, process of running the occupation, challenges faced, financial assistance and income also ask them to mention other details and images, if available and share with their teacher and among their classmates.</p> <p>Ⓢ Show Video or slides of Indian traditional occupations and ask learners to prepare a list of 10 Indian traditional occupations that are slowly treading towards extinction. Also discuss in detail their importance and ask them to submit a report.</p> <p>Ⓢ Discuss with learners the following points and facilitate and guide them to prepare a file for the following activities:</p> <ul style="list-style-type: none"> <li>- Major nutrition related diseases in India</li> </ul>	<p>women, children and elderly</p> <ul style="list-style-type: none"> <li>▪ Demonstrates clarity of understanding, interdependence and integration on human development index (HDI) and work environment factors such as Quality of Life (education level, income, child mortality and longevity) and Quality of Work Life (autonomy in work, living wage, conflict resolution through social dialogue and life long employment)</li> </ul> <p>Ⓢ <b>Can plan and take necessary steps in maintaining and restoring good nutrition of an individual or a group</b></p> <ul style="list-style-type: none"> <li>▪ Displays clarity of concepts and significance of clinical nutrition and dietetics.</li> <li>▪ Establish connection between good nutrition and good health; prevention/management of diseases and nutrition care</li> <li>▪ Plan and execute steps in nutrition care</li> </ul> <p>Ⓢ <b>Can interrelate food safety and food quality; can outline and follow steps of food safety management, and the problems</b></p>
---	--

<ul style="list-style-type: none"> <li>- Classification of different age-groups and their nutritional problems</li> <li>- Age group that has more nutritional problems and the reasons behind it</li> <li>Ⓢ Guide learners to find out more information about the following Nutrition Programmes operational in India. Facilitate learners to prepare separate flyers/ brochures for each one of them and share with the teachers, family and classmates:</li> <li>- Nutrient Deficiency Control programmes: <ul style="list-style-type: none"> <li>○ National Prophylaxis programme for prevention of blindness due to vitamin ‘A’ deficiency</li> <li>○ National Anaemia control programme</li> <li>○ National Iodine deficiency disorder control programme</li> </ul> </li> <li>- Food Supplementation programmes like Mid-Day Meal programme</li> <li>- Food security programmes: <ul style="list-style-type: none"> <li>○ Public Distribution System</li> <li>○ Antyodaya Anna Yojana</li> <li>○ Annapurna Scheme</li> <li>○ National Food for Work Programme</li> </ul> </li> <li>Ⓢ Discuss with learners the importance of Calcium and Iron and guide them to prepare a diet plan for overcoming Calcium and Iron deficiency.</li> <li>Ⓢ Organize an online interactive session with learners using online platform with medical officer/ community or public nutritionist to discuss the problems of under nutrition and its possible causes with learners.</li> <li>Ⓢ Ask the learners to explore on the internet about other Home Science colleges under the State and Center run Universities including Universities under Indian Council of Agricultural Research (ICAR) and various institutions like Central Food</li> </ul>	<p><b>related to the public health, eg,</b></p> <ul style="list-style-type: none"> <li>▪ Explains the importance of various issues related to food safety and quality</li> <li>▪ Describe/differentiate terms used in public health, food safety and quality</li> <li>▪ Enumerate how food-borne illnesses occur</li> <li>▪ Illustrates the importance of food safety management systems (delete)</li> <li>▪ Displays knowledge about national and international food standards and their role in ensuring food quality and safety</li> <li>▪ Identify the nutritional problems of public health, responsible factors and strategies to handle</li> <li>▪ Describe the programmes operating to tackle important nutritional problems</li> <li>▪ Conveys strategies that can be used to tackle nutritional problems (delete)</li> </ul> <p>Ⓢ <b>Describe catering and food services as a flourishing industry and how an individual can contribute in it</b></p> <ul style="list-style-type: none"> <li>▪ Illustrate various types of catering services, operations</li> </ul>
--	---



Technological Research Institute (CFTRI) etc. which are running professional courses and prepare a matrix of information needed for choosing 'Clinical Nutrition and Dietetics' as career (such as departments, courses, admission process etc.).

② Facilitate and help the learners to prepare an activity after discussing about the "role of dietician", and ask them to act as a dietician for a day and also guide them to plan and write the diet recommendation to the family members according to their age and health issues.

② Help learners and ask them to explore websites related to clinical nutrition and dietetics to learners and then ask them to make a list of career opportunities related to this field.

② Guide learners to find out the following information about different types of catering services:

- List of staff corresponding to different catering services like hotels, restaurants etc.
- Detailed roles and responsibilities of catering staff specially food service manager, chef/ cook, cafeteria manager, catering manager, production manager, purchase manager and food service director /asst food service director etc.
- Qualification required for recruitment for the post in which they are interested in such as chef, manager, food service supervisor, etc.

② Discuss about various institutes, colleges, and universities offering course in ECCE or Human Development and Family Studies and guide learners to explore and make a list of long term, short term and Nursery Teachers Training (NTT) courses available in this area.

② Facilitate learners to write an assignment about basic

in each and important terms used

- Explain menu and its importance. Can plan a menu taking an example of a catering service.

② **Describe food processing and technology industry: its importance, growth and associated concepts**

- Identify which foods are processed and the technology associated with it.
- Prepare and evaluate a processed food product

② **Prepare oneself/guide others for a career in Clinical Nutrition and Dietetics; Public Health and Nutrition; Catering and Food Service Management; Food Processing and Technology and Food Quality and Safety.**

- Draw the spectrum of job opportunities (both wage and self employment) available in these areas
- Describe the knowledge base and skills needed thoughts on

② **Appreciates the human development and family studies as discipline of HEFS having potential for other**

principles and importance of Early Childhood Care and Education (ECCE).

- ④ Along with learners plan learners to prepare an activity book for pre-schoolers and add 10-15 creative activities that the pre-school children enjoy and learn from. Ask them to include the list of material required and procedure explained in the activities.
- ④ Discuss with learners and facilitate them to prepare a video, highlighting about difference between inclusive and integrated education as well as what are the support services required. Ask children to write reflection on the video.
- ④ Organize an online interactive session for learners with the 'Special Educator' appointed in their school. Learners can talk to the special educator and ask her about how she teaches children with special needs along with other children in the class.
- ④ Ask learners to prepare a chart explaining about different elements of design. This will create a better understanding between all the elements.
- ④ Discuss about textiles and guide learners to Identify different clothes from their wardrobe or family's wardrobe and collect 5 clothes of vertical, horizontal, diagonal and curved lines each. Take picture and paste it into their suitable category.
- ④ Facilitate learners to make an info graphics of principles of design (proportion, balance, rhythm, harmony and emphasis) to explain the concepts to learners.
- ④ Guide learners to explore on internet different terminology related to fashion and fashion industry. Make a chart of atleast 15 related terminologies with their explanation.
- ④ Ask learners to identify any two clothes at home and try to find the quality measures for it (color check like faded or removal of it after a wash,

**varied professional opportunities under different sub-domains such as, Early Childhood Care and Education (ECCE), special education, inclusive education and related support services.**

**Eg,**

- Elaborates the concepts under each sub-domain and skills required for related career avenues
  - Conveys why services, institutions and programmes are needed for children, youth and elderly
  - Describes the aspects, knowledge and skills involved in management of institutions and running various such programmes
- ④ **Explains the importance of textiles and apparel design, principals of design, process of mass production of apparel, identification of defects, quality assurance, care of textiles and apparel as well as necessary equipments, eg,**
- Uses appropriate terminology in identifying and describing design elements and principles pertaining to apparel design.

sewing check inside the cloth whether it is not withered, durability check etc.). Make these 3 columns for the clothes.

- ④ Discuss a List of different types of textiles used in clothes and home furnishing and explain about their wash property (easily washable, dry clean or hand washable).
- ④ Make a table on how to take care of different types of textiles, discuss with learners.
- ④ Ask learners to write about the significance of fashion design and merchandising in garment industry.
- ④ Explain in detail the knowledge and skills required for being in a fashion business
- ④ Ask learners to observe, identify and list the various types of stores in their nearby market.
- ④ Discuss the difference between fashion designer and fashion merchandiser.
- ④ Guide learners to find out someone working as a Human Resource Manager in a company or independently. Find out the work involved in the above subareas of Contributions of HRD. Discuss it with their classmates and compare answers.
- ④ Guide learners to choose a job profile and find out the duties, responsibilities and skills required. Every learner should take up different capacities and share it with their classmates.
- ④ Ask learners to find out the markers to measure the human development.
- ④ Find out and discuss some of the developmental programs in India to tackle MDGs
- ④ Guide learners to find out a case study on corporate communication and how they handle crisis.
- ④ Organize a visit with a company to find out the ways in which companies manage their public relations.

- Narrates the design development process and use of Computer Aided Design (CAD) software for design development.
- Explains the significance and systems of mass production of textiles and apparel
- Conveys the concept of quality textiles and apparel
- Identifies the textiles and apparel defects before and after production
- Communicates the importance of textiles conservation, its types and recognize factors of deterioration of textiles
- Discusses the significance of care and maintenance of textiles and textiles products including those in use in hospitals and hotels
- Narrates the process and various equipments required for textiles production, sewing and cleaning and their usage

④ **Appreciates the Textiles and Apparel as discipline of HEFS having potential for other varied professional opportunities under different sub-domains such as fashion**

- ② Show a video on how communication helps in working towards development? Ask learners to write about it.
- ② Create a poster highlighting the skills required in field of communication & journalism. Discuss about it with learners.
- ② Prepare a poster on role of media in changing society. Discuss its importance with learners.
- ② Guide learners to find out the information about any two great innovators in the world and prepare a write-up on their life and innovative work. Submit the report to the teachers and share their life story with the friends and classmates through different media
- ② Discuss the information about eminent nutritionists. Ask learners to prepare a report and submit to the teachers.
- ② Teachers should organize an online interactive session for learners with the ‘Special Educator’ appointed in their school. Learners can talk to the special educator and ask her about how she teaches children with special needs along with other children in the class.
- ② Describe the knowledge and skills they will need in order to pursue a career in management of institutions and programmes for children/youth/elderly.
- ② Create a poster highlighting the skills required in field of communication & journalism.

**business and merchandising in garment industry. Eg,**

- Explains the knowledge and skills required to be in fashion business and merchandising in garment industry and other career avenues.
- Describes the role and function of a fashion designer, merchandiser, manufacturer, and quality control manager etc.

② **Appreciates the resource management as discipline of HEFS having potential for other varied professional opportunities under different sub-domains such as, human resource management, hospitality management, event management, interior and exterior designing, and consumer education and protection. Eg,**

- Explains the significance and scope under each sub-domain and skills required for related career avenues
- Describes the role and function of human resource management professionals, event manager, interior and exterior designer, and the

professionals related to consumer education and protection etc.

© **Appreciates the communication and extension as discipline of HEFS having potential for other varied professional opportunities under different sub-domains such as, programme development and evaluation, corporate communication, journalism, public relations, media planning and media management, media research, media design, media development, media production, and advocacy/ social mobilization. Eg,**

- Explains the concept, significance and scope under each sub-domain and skills required for related career avenues
- Describes the role and function of programme developer, evaluator, journalists, public relation officers, media professionals, and advocacy personals.

© **Displays knowledge of the scope for self employment as**

	<p><b>small, medium or large scale entrepreneurs under each domain within HEFS such as Food and Nutrition, Human Development and Family Studies, Textiles and Apparel, Resource Management, and Communication and Extension</b></p>
--	---

### **Suggested Pedagogical Processes in an Inclusive Setup**

- ⊗ Verbal descriptions of graphical representations and pictures like, tactile, models, block paintings, pictures (labeled and captioned) printing, pictures, posters, flash cards, audio visual materials (films and videos) should be used considering the specific requirements of children with special needs
- ⊗ There may be some students who may have learning difficulties including language, visual-spatial or mixed processing problems. They may require additional teaching support and some adaptation in the curriculum.
- ⊗ Create awareness about needs of special needs students among the peers and teachers.
- ⊗ Organization of group work like debates, quizzes, reading activities, cut and paste etc.
- ⊗ Organization of excursions, trips and visits for the students to the relevant places.
- ⊗ Involve students in exploring the environment using other senses like smell and touch.
- ⊗ Give a brief recap of earlier learning and overview of today's class at the beginning of each lesson.
- ⊗ Highlight/underline/repeat the key points and words.
- ⊗ Plan occasions/ activities with real life experiences.
- ⊗ Draw links with what has been taught earlier and sequencing makes it easier to connect information.
- ⊗ Make use of multisensory inputs.
- ⊗ Asking relevant questions frequently to check how much the child has learnt as it helps in assimilating information.

## **Development Team**

### **Advisor:**

Hrushikesh Senapaty, Professor and Director, NCERT, New Delhi

### **Core Committee:**

Prof. Hrushikesh Senapaty, **Chairperson**

Prof. Sridhar Srivastava, Joint Director

Prof. A. K. Srivastava, Dean (Research) and Head, DER

Prof. Anita Julka, Dean (Coordination)

Prof. Anup Rajpoot, Head, Publication Division

Prof. Veer Pal Singh, Head, ESD

Prof. Ranjana Arora, I/C Curriculum Group and Head, DTE

Prof. A. D. Tewari, **Convener**

### **Development Team, NCERT:**

A.K. Wazalwar, Professor, DESM

Anjali Kaul, Professor, DESM

Aparna Pandey, Professor, SESS

Ashish K. Srivastava, Assistant Professor, DESM

Ashita Raveendran, Associate Professor, I/c head, PMD

C. Padmaja, Professor, RIE, Mysore

C. V. Shimray, Assistant Professor, DESM

Chaman Ara Khan, Associate Professor, DEL

Diwan Hannan Khan, Professor, DEL

Dinesh Kumar, Professor, DESM

Gagan Gupta, Associate Professor, DESM

Gauri Srivastava, Professor and Head, DESS

Harish Meena, Assistant Professor, DESS

Jaya Singh, Professor, DESS

Jitendra Mohan Mishra, Professor, DEL

Jyotshna Tiwari, Professor, DEAA

K. C. Tripathi, Professor, DEL

Lal Chand Ram, Professor, DEL

M.V. Srinivasan, Professor, DESS

Md. Farooq Ansari, Professor, DEL

Md. Moazzauddin, Professor, DEL

Meenakshi Khar, Assistant Professor, DEL

Mridula Saxena, Professor, PSSCIVE

Naresh Kohli, Professor, DEL

Neelkanth Kumar, Assistant Professor, DEL

P. K. Mondal, Professor, DESS

Pawan Sudhir, Professor and Head, DEAA  
Prabhat K. Mishra, Professor, DEPFE  
Pramila Tanwar, Assistant Professor, DESM  
Pramod Kumar Dubey, Professor, DEL  
Pushpa Lata Verma, Assistant Professor, DESM  
R. K. Parashar, Professor, DESM  
R. Meghnathan, Professor, DEL  
R. R. Koirang, Assistant Professor, Curriculum Group  
Rachna Garg, Professor, DESM  
Reetu Chandra, Assistant Professor, DEE  
Ruchi Verma, Assistant Professor, DESM  
Sandhya Rani Sahoo, Professor, RIE, Bhubaneswar  
Sandhya Singh, Professor and head, DEL  
Sanjay Kumar Suman, Professor, DEL  
Sarbari Banerjee, Assistant Professor, DEAA  
Sarika Saju, Associate Professor, RIE, Bhopal  
Saroj Yadav, Professor, Dean (A)  
Shashi Prabha, Professor, DESM  
Seema Ojha, Professor, DESS  
Shankar Sharan, Professor, DESS  
Shraddha Dhiwal, DEPFE  
Sipra Vaidya, Professor, DESS  
Sunita Farkya, Professor and Head, DESM  
Tanu Malik, Professor, DESS  
Ved Prakash Mishra, Assistant Professor, DEL

**Review Committee for Science Subjects:**

Prof. P. C. Aggarwal, Principal, RIE, Bhubaneswar  
Prof. S. V. Sharma, Principal, RIE, Ajmer  
Prof. B. Barthakur, Principal, NERIE, Omiam, Shillong  
Prof. S. C. Roy, Dean (Academic), NERIE, Omiam, Shillong  
Prof. Rajrani, DTE  
Prof. J. P. Bagchi, RIE, Ajmer  
Dr. Arnab Sen, NERIE, Omiam, Shillong  
Dr. Som Shekhar, RIE, Mysuru

**Review Committee for Social Science Subjects:**

Prof. Saroj Bala Yadav, Dean (Academic)  
Prof. Anita Julka, Dean (Coordination)  
Prof. Preetish Acharya, RIE, Bhubaneswar  
Prof. Ratnamala Arya, RIE, Bhopal  
Prof. Malli Gandhi, RIE, Mysuru



Prof. Seema Saigal, NERIE, Omiam, Shillong  
Dr. Newmei, NERIE, Omiam, Shillong

**Review Committee for Mathematics:**

Prof. Anup Rajput, Head, Publication Division  
Dr. Patanjali Sharma, RIE, Ajmer  
Dr. V. Prasad, RIE, Mysuru  
Dr. K. Vijayan, DTE

**Review Committee for Languages:**

Prof. K. C. Tripathi, DEL  
Prof. Sandhya Rani Sahoo, RIE, Bhubaneswar  
Prof. Kiran Walia, DTE  
Prof. Rajesh Mishra, RIE, Ajmer  
Prof. Usha Sharma, DEE  
Dr. Satrupa Palit, NERIE, Omiam, Shillong  
Dr. Anup Kumar, RIE, Bhubaneswar

**Review Committee for Psychology:**

Prof. K. B. Rath, RIE, Ajmer  
Prof. I. B. Chugtai, RIE, Bhopal  
Prof. I. P. Gowramma, RIE, Bhubaneswar  
Dr. Prachi Gildiyal, NERIE, Omiam, Shillong

**Review Committee for Human Ecology and Family Science:**

Prof. Poonam Aggrawal, DGS  
Prof. Suniti Sanwal, DEE  
Prof. Pinki Khanna, PSSCIVE, Bhopal  
Prof. Anupam Ahuja, International Relation Division

**Review Committee for Arts Education:**

Prof. Ayushman Goswami, RIE, Ajmer  
Prof. Madhulika Patel, DTE  
Prof. Sarvesh Maurya, RIE, Mysuru  
Dr. Rashmi Rekha Sethi, RIE, Bhubaneswar  
Dr. Saurab Mishra, RIE, Bhubaneswar

**Review Committee for Health and Physical Education:**

Prof. Dinesh Kumar, DESM  
Prof. B.P. Bhardwaj, DTE  
Prof. C. Padmja, RIE, Mysuru

Prof. Anjni Koul, DESM  
Dr. Reetu Chandra, DEE

### **External Reviewers**

Abha Jha, Lecturer, Gargi Sarvodaya Kanya Vidyalaya, New Delhi  
Anuradha Kumari, Retd. PGT, Sardar Patel School, Delhi  
Ateequallah, Prof. (Retd.) University of Delhi, Delhi  
Atul Modi, Associate Professor (Retd.), VES College of Arts, Science & Commerce, Mumbai  
B. C. Kapri, Prof. Physical Education, BHU  
B. K. Tripathi, Director, IUCTE, BHU  
Brahm Prakash, Prof. (Retd.), DESM  
Daya Pant, Prof. (Retd.), DEPF  
D. K. Vaid, Prof. (Retd.), ESD  
Dinesh Prasad Saklani, Prof. Modern History, Garhwal University, Uttarakhand  
G. Omkar Nath, Prof. Economics, University of Hyderabad  
H. C. Pradhan, Professor, Homi Bhabha Centre for Science Education, Mumbai, Maharashtra  
Hukum Singh, Prof. (Retd.), DESM  
Indira Khetrpal, Salwan Public School  
K. K. Arora, Zakir Hussain Delhi College, Delhi University  
K.L. Sharma, Retd. Professor Sociology, Jaipur National University  
Md Nauman Khan, Prof. (Retd.), DEL  
M.H. Qureshi, Retd Prof. Geography, CSR, JNU  
Neelam Srivastava, PGT Psychology, Vasant Valley School, New Delhi  
Neetu Chaudhary, Music Teacher, SKV Shakti Nagar No.1, Delhi  
Prema Raghwan, Prof. (Retd.), RIE Mysuru  
Rajeev Lochan, Prof. Modern History, Punjab University, Chandigarh  
Ramakar Raizada, Prof. (Retd.), RIE Bhopal  
Ratnesh Singh, Associate Professor GGV Central University, Bilaspur  
Reeta Sharma, Prof. (Retd.) RIE Bhopal  
Saroj Yadav, Dean (A)(Retd.), NCERT  
S.K.S. Gautam, Prof. (Retd.), ESD  
Sabya Sachin, Vice Principal, Rajkiya Sarvodaya Bal Vidyalaya  
Savithri Singh, Principal (Retired), Acharya Narendra Dev College, (University of Delhi), Govindpuri, New Delhi 110019  
Suchitra Raut, HOD Fine Arts, DPS Bhopal  
Sushma Gulati, Prof. (Retd.), DEPF  
Vijay Sarda, 1B/18-C, Ashok Vihar, Phase-1, New Delhi-  
Vikash Kumar, TGT Art Education, KV No.3 Delhi Cantt.

**Project Coordinators:**

A. D. Tewari, Professor, ERC/ESD

Ranjana Arora, Professor, I/C Curriculum Group and Head, DTE

**Secretarial Support:**

Renu Bisht, PA, ERC/ESD

DRAFT