

## Grade 9 – Learning Area specific course descriptions

### ENGLISH

The purpose of the Grade 9 English curriculum is to enable students to communicate effectively and appropriately in real-life situations. Students work further on the four language skills – listening, speaking, reading and writing. They read, comprehend and appreciate texts in English, using different strategies like reading aloud, silent reading, scanning and skimming. Students understand the rules of grammar and their use in writing, learn to write in an appropriate style and format, plan, organise and present ideas coherently. They also develop an interest in reading and appreciating Literature in English.

### MATHEMATICS

By the end of Grade 9, students further learn the number system, polynomials, linear equations in two variables, coordinate geometry, lines and angles, triangle. Euclid's geometry is introduced, along with geometrical constructions, circles, calculating areas (parallelograms and triangles), surface area and volume. Students develop the ability to analyse with statistics and probability. The curriculum is imparted through activities which may involve the use of concrete materials, models, patterns, charts, pictures, posters, games, puzzles and experiments.

### SECOND LANGUAGE – HINDI/Kannada

By the end of Grade 9, students begin to read and follow extended fiction and nonfiction texts, poems with confidence. They make use of comprehensible pronunciation, stress and intonation. They recognise and respond to all punctuation marks, anunasik, anuswar, nukta, upsarg - pratyay, varn - vichched, part of speech, word joining (sandhi), a few compound words (samās) and figures of speech. They learn to appreciate non-verbal clues and respond by speaking and writing.

Students familiarize with non - verbal clues and respond by speaking and writing. They write simple vigyapan, picture composition, paragraphs, informal letter, simple descriptive pieces, answers to unseen passage and poetries and scripts for role plays. Students communicate their views on general and curricular topics to peers, parent and teachers with confidence. They make use of information from other subjects, pictures and surroundings to facilitate learning.

### SCIENCE – PHYSICS, CHEMISTRY, BIOLOGY

The Science program is designed with an aim of developing a sense of wonder and curiosity about cosmos, subatomic world and biology and making students “science aware”. Students learn through hands-on activities which include researching, observing, recording, analysing, inferring and designing, thereby develop the skill of scientific inquiry and thinking analytically, critically and creatively.

In Physics, students investigate and understand the different physical phenomena. They come across various tools to quantify these phenomena and learn to use these tools to solve real life problems. Emphasis is given on strengthening the science aptitude and reasoning by working on relevant problems. Students would be able to solve the most complex problems through mathematical and logical interventions.

In biology, the course encompasses traditional concepts and encourages exploration of new discoveries in the field. The components include biochemistry, cell biology, cell processes, heredity and reproduction, the evolution of life, taxonomy, human body systems, and ecology. Earth and Space Science concepts are integrated in a strategic way, designed to deepen student

understanding of life on Earth and the interactions between the biotic and abiotic systems. Throughout the course students build an understanding of life and how life changes over time in response to a changing environment. Central to this understanding is the study of interactions of living organisms and their environments on both macroscopic and microscopic scales.

In chemistry, students learn about the fundamentals and its context in life. They learn about matter - its interaction, properties and its composition. Starting from basic structure of atom to properties of various elements and different chemical reactions involving these elements and compounds, students understand the relevant chemical phenomena occurring around them. Emphasis is laid on concept building, scientific reasoning and problem solving.

### HISTORY

The curriculum in Grade 9 lays emphasis on two major events and processes that have in major ways shaped the identity of the modern world. Each represents a different form of politics, and a specific combination of forces. One event is linked to the growth of liberalism and democracy, The French Revolution, one with socialism in Europe and the Russian Revolution and one with a negation of both democracy and socialism Nazism and the Rise of Hitler. The themes 'Forest Society' and 'Colonialism under Livelihoods, Economies and Societies' focuses on how different social groups grapple with the changes in the contemporary world and how these changes affect their lives.

### GEOGRAPHY

By the end of Grade 9, students delve further into the geography of India – its major landform features and the underlying geological structure; their association with various rocks and minerals as well as nature of soil types. The river systems of the country and their role in the evolution of human society are also explored. Students identify the various factors influencing the climate and explain the climatic variation of our country and its impact on the life of the people. They investigate the importance and unifying role of monsoons, the nature of diverse flora and fauna as well as their distribution, to develop concern about the need to protect the biodiversity of our country.

Students analyse the uneven nature of population distribution and show concern about its large size. They understand the various occupations of people, explain various factors of population change; explain various dimensions of national policy and understand the needs of adolescents as underserved group.

### CIVICS

Grade 9 Civics provides opportunities for students to develop conceptual skills of defining democracy. They understand how different historical processes and forces have promoted democracy and develop a sophisticated defence of democracy against common prejudices. Students learn about the making of the Constitution and develop respect and appreciation for Constitutional values.

Students recognise that the Constitution is a living document that undergoes changes. They explore the idea of representative democracy via competitive party politics. They familiarize themselves with the electoral system. Students develop an appreciation of citizen's increased participation in electoral politics and recognise the significance of the Election Commission.

### ECONOMICS

The Grade 9 Economics curriculum familiarizes students with basic economics concept through an imaginary story of Palampur village . They familiarize with a few population related concepts and sensitize themselves to the fact that people as asset can participate and contribute in nation building. They examine and sensitize themselves to poverty as a challenge. They will appreciate the government's initiative to alleviate poverty. Students investigate the Food Security of India to understand an economic issue which is the basic necessity of life, appreciate and critically look at the role of government in ensuring food supply.

### DISASTER MANAGEMENT - PROJECT WORK

Every student has to compulsorily undertake one project on Disaster Management (Pertaining to Grade 9 curriculum of Disaster Management only). The projects have been carefully designed so as to:

- Create awareness in learners.
- Enable them to understand and co-relate all aspects of Disaster Management.
- Relate theory with practice.
- Relation of different aspects with life.
- Provide hands on experience.

### COMPUTER SCIENCE

Students get an introduction to BlueJ IDE for Java. They learn about features of BlueJ, and history and types of Java programs. Students learn about basic elements of a Java program. Students get familiar with the different types of operators and their functions. They use Scanner class to read user input. Students explore the uses of mathematical functions present in the Math package. They write programs to solve specific problems using Scanner class and math functions. Students learn to use StreamReader class to read data. They implement conditional statements using IF and SWITCH CASE. They learn about FOR loops, DO-WHILE loops and WHILE loops in Java. They examine the differences between FOR and WHILE loops. They apply sequential, conditional and loop program constructs to write solutions to programming problems. They learn about character and string functions in Java. They write programs to demonstrate the use of these functions. Students examine the different kinds of errors that occur in Java programs. They use Java in solving real world problems.

Practical Skills:

- Use Google apps to create and share information and collaborate with peers.
- Design, create, build, and debug Java programs.
- Apply algorithmic thinking to solve programming problems.
- Use appropriate variables and data types during program development.
- Use methods in Math class to perform numerical calculations.
- Apply decision structures in Java programs.
- Compare SWITCH-CASE with IF-ELSE IF statements.
- Apply loop structures to perform repetitive tasks.
- Identify errors and debug programs.
- Apply concepts in Java to design and implement a solution for a real life problem.
- Write programs to manipulate strings using character and string functions in Java.

### LIFESKILLS

The life-skills curriculum in Senior School is modelled off habits of the mind and heart, used by both students and teachers. This helps students develop a realistic sense of their personal abilities, qualities, strengths and the factors that influence and affect their emotional responses. Students participate in discussions on real life situations and understand how to tackle such instances – learning how to deal with roles and responsibilities and importance of teamwork. Students are able to express themselves freely in a positive and safe environment.

Through role plays and activities, they learn to show respect for and understand others' perspectives. As learners, they manage and monitor their own emotional responses, and persist in completing tasks and overcoming hurdles. Students are exposed to problem solving and decision-making skills that teach them how to use particular strategies to manage themselves in a range of situations. Students reflect on and evaluate their learning, identify personal characteristics and learn from success and failure.

### OTHER

Students in Grade 9 also attend weekly sessions in Yoga, Physical Education and quiet reading time at the school library.