

Grade 10 – Learning Area specific course descriptions

ENGLISH

The purpose of Grade 10 English curriculum is to enable students to communicate effectively and appropriately in real-life situation. 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

The Mathematics curriculum in Grade 10 aims to enhance the capacity of students to employ Mathematics in solving day-to-day life problems. Students acquire the ability to solve problems using algebraic methods and apply the knowledge of simple trigonometry to solve problems of height and distances. They carry out experiments with numbers and forms of geometry, frame hypothesis and verify these with further observations. Students apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method and develop ability to think, analyse and articulate logically.

The Grade 10 curriculum is imparted through activities which may involve the use of concrete materials, models, patterns, charts, pictures, posters, games, puzzles and experiments. It helps students to further study the number system, algebra, geometry, trigonometry, mensuration, statistics, graphs and coordinate geometry.

SECOND LANGUAGE – HINDI*

By the end of Grade 10, students communicate in Hindi with confidence, locate details in the text, and develop coherent arguments supported by reason and examples. They use critical thinking to read between the lines and go beyond what is in text. They are able to modify their responses and manner of interaction to match a situation.

Students write soochna, vigyapan, anuched lekhan, and formal letters for real purposes and with accuracy. They recognise and respond to all compound words (samās), types of sentences (vaky bhed), and correct form of sentences (suddh vaky). Students undertake small projects like presentations and interviews on a regular basis. They develop the skill to listen and understand in a non - linear way, to make connections and draw inferences. They also acquire the ability to listen with concentration, empathy and understanding.

SCIENCE – PHYSICS, CHEMISTRY, BIOLOGY

The Science program of Grade 10 is designed to help students acquire knowledge and conceptual understanding and skills to solve problems, and make informed decisions in scientific and other contexts. Students learn through hands-on activities which include observing, recording, analysing, inferring and designing. They develop skills of scientific inquiry to design and carry out scientific investigations and learn to think analytically, critically and creatively. Students will explore some of the topics studied in the earlier classes in greater detail.

HISTORY

Under the Grade 10 curriculum, students explore the formation of nation states in Europe in the post-1830 period. Students discuss rise of nationalism and cover the relationship and difference between European nationalism and anti-colonial nationalisms. The theme 'Nationalism in India' familiarizes students with the writings and ideals of different political groups and individuals, notably Mahatma Gandhi. In 'The Age of Industrialization', students explore the Proto-Industrial phase and early factory system to understand the process of industrialization, and its impact on labour class.

Students explore the history of print in Europe, growth of press in nineteenth century India, the relationship between print culture, public debate and politics. Students discuss the link between print culture and the circulation of ideas. They examine pictures, cartoons, extracts from propaganda literature and newspaper debates on important events and issues in the past.

GEOGRAPHY

The Geography curriculum in Grade 10 allows students to understand the value of resources and the need for their judicious utilisation and conservation. They examine the importance of agriculture in national economy, identify various types of farming, describe the spatial distribution of major crops, and understand the relationship between rainfall regimes and cropping pattern. Students learn the various government policies for institutional and technological reforms since independence. They discuss various types of minerals and their uneven nature of distribution, while explaining the need for their judicious utilisation. Students explore various types of conventional and non-conventional resources and their utilization.

They understand the importance of industries in the national economy, and the regional disparities that causes the limits industries in certain areas. They also debate over the need for a planned industrial development and the role of government towards sustainable development. Students explain the importance of transport and communication in the ever shrinking world and understand the role of trade in the economic development of a country.

CIVICS

By the end of Grade 10, students are introduced to the centrality of power sharing in a democracy, as they understand the working of spatial and social power sharing mechanisms and analyse federal provisions and institutions. They explore the model of Panchayati Raj in rural and urban areas and analyse the relationship between social divisions and political competition with reference to the situations in India. They analyse the challenges posed by communalism to Indian democracy, the enabling and disabling effects of caste and ethnicity in politics. They will develop a gender perspective on politics, analyse party systems in democracies.

They will be introduced to major political parties in India, as they explore the role of social movements and non-party political formations. Students examine the difficult question of evaluating the functioning of democracies and develop skills of evaluating Indian democracy on some key dimensions. They distinguish between sources of strength and weaknesses of Indian democracy and reflect on the different kinds of measures possible to deepen democracy, promote an active and participatory citizenship.

ECONOMICS

By the end of Grade 10, students familiarise students with some macroeconomic concepts, sensitize them about the rationale for overall human development in our country, which include the rise of income, improvements in health and education rather than income. Students will inquire whether the increase in income alone is sufficient for a nation, how and why people should be healthy and provided with education, become aware of a major employment generating sector.

The content sensitises the learner of how and why governments invest in such an important sector. They investigate the concept of money as an economic concept; develop awareness of the role of financial institutions from the point of view of day-to- day life. Students gather idea about how a particular economic phenomenon is influencing their surroundings and day-to-day life. They develop awareness of their rights and duties as a consumer, familiarizing with the legal measures available to protect from being exploited in markets.

COMPUTER SCIENCE

Students get an introduction to Electronics. They learn to identify electronic components, determine resistance values and build simple series and parallel circuits. They identify Arduino Uno board components. They identify hazards of working with electricity. Students use Arduino Uno board and sensors such as motion detectors, photoresistors and piezo-plates to build detection and control systems for specific purposes.

Students get an introduction to App Inventor 2. They learn to test and publish apps. Students understand the need for Java functions. They learn about function headers, access modifiers and return types and write Java functions. They define arrays and learn to declare, instantiate and initialize arrays. They implement searching and sorting operations on Java arrays. They define and classify Exceptions and identify situations where Exception handling should be used. They learn about objects and classes. Students learn how to create and invoke methods of a class.

Practical Skills:

- Identify electronic components.
- Use resistors, power supply and LEDs to build simple series and parallel dc circuits.
- Design and build detection and control systems using Arduino.
- Explore the use of microcontrollers and sensors in designing solutions to real world problems.
- Use Google apps to create and share information and collaborate with peers.
- Design and build apps that address real world needs using App Inventor 2.
- Identify and implement single dimensional and multidimensional arrays.
- Implement searching and sorting algorithms using arrays.
- Write and invoke functions to solve specific programming questions.
- Use Exception handling techniques in programs.
- Write Java programs using objects and classes.

DISASTER MANAGEMENT - PROJECT WORK

Every student has to compulsorily undertake any one project on the following units /topics.

1. Disaster Management (Pertaining to GRADE 10 curriculum of Disaster Management only). OR
2. Popular Struggles and Movements OR
3. Money and Credit

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.

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