

Grade 8 ICSE – Learning Area Specific Course Descriptions



ENGLISH

The English curriculum for Grade 8 aims at providing the students with a comprehensive knowledge of English language and equipping them with the effective linguistic skills that are essential for every walk of life. The curriculum takes a structured approach towards cultivating speaking, listening, reading, writing, creative and analytical skills that promotes high order skills in both thought and expression.

Besides the requisite skills in language, the Grade 8 English curriculum also ensures that students learn to read, analyse and appreciate classic and contemporary literature. The reading skill, which is vital to intellectual development, paves their way to being lifelong readers and teaches them to explore myriad human characters and experiences. Consequently the students learn to hone crucial emotional skills of sensitivity, empathy and imagination.

In Grade 8, students are introduced to some of the literary giants like William Shakespeare, Guy de Maupassant, William Wordsworth whose works are bound to broaden their intellectual horizons and help them look beyond the historical confines and identify the timeless characters and events of human life.

The curriculum also works toward strengthening their skill as persuasive writers who can articulate themselves precisely yet eloquently. Functional writing like letters, notices and emails also find their place in the English curriculum which would assure linguistic dexterity for the practical world.

The Grade 8 English curriculum promises that the students mature into avid readers with enriched vocabulary, assertive speakers, articulate writers and above all thoughtful, humane individuals.

MATHEMATICS

From the comfort of context and/or models linked to their experience, the students of Grade 8 move towards working with ideas. Learning to abstract helps formulate and understand arguments. The capacity to see interrelations among concepts help to deal with ideas in other subjects as well. It also helps to understand and make better patterns, maps, appreciate area and volume and see similarities between shapes and sizes. While this is regarding the relationship of other fields of knowledge to mathematics, its meaning in life and the environment is re-emphasised. Students will be able to identify the principles to be used in contextual situations, for solving problems, sift through, and choose the relevant information as the first important step. Students will be able to find a way to use the knowledge they have and reach where the problem requires them to go. They identify and define a problem, select or design possible solutions and revise or redesign the steps, if required. In Grade 8 students develop the ability to construct appropriate models by breaking up the problem and evolving their own strategies and analysis of problems.

By the end of Grade 8, students further explore concepts of Numbers and Algebra. Students apply the knowledge acquired in their previous grade to delve further into Geometry, Commercial Arithmetic, Statistics and Mensuration. The curriculum arranges for classroom activities that promote the true understanding of the nature of mathematics through specific knowledge, skills and attitudes among and between strands.



SCIENCE

The new Biology curriculum follows a disciplinary approach keeping in mind the six domains of science - Concepts, Processes, Applications, Attitudes, Creativity and Worldview. Emphasis has been laid upon mastering the fundamental principles of Biology rather than specific procedures. Students learn about the Transport Systems in both Plants and Humans (Circulation). In view of the increasing stress and work pressure, there are increasing incidents of cardiac problems and hence the knowledge about the circulation of blood in the human body assumes significance. They study about the reproduction in plants (both asexual and asexual) and animals. The syllabus gives details about the Human body as the students learn about the endocrine system, adolescence and the accompanying changes and nervous system. Key concepts regarding health and hygiene with a brief idea of communicable diseases. Students acquire knowledge about maintenance of health and hygiene so as to lead a trouble free life.

The learners explore simple forms of First Aid measures in day to day situations and learn about harmful effects of consumption of tobacco, drinking alcohol and drugs.

Ecosystem is a basic unit of ecology and as humans have increasingly altered ecosystems for their own uses, the students determine whether these changes will affect the sustainability of our life support systems.

Food Production is an important chapter in Grade 8 as food is basic to the existence of life on earth. The topic helps students imagine a future where crops could tolerate cold, flourish in drought and resist diseases and insects. They are given an opportunity to think carefully about their vision of what is possible and list their ideas.



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Chemistry Curriculum for grade 8 ICSE comprises 9 themes. Each theme is divided into 2 to 3 units. The themes include Matter, Physical and chemical changes, Elements compounds and mixture, Atomic structure, Language of Chemistry, Chemical reactions, Hydrogen, Water and Carbon and its compounds. Each theme has assignments at the end and thought provoking exercises. Curriculum provides scope for Systematic learning of all themes, including definitions, explanation and experiments to test the knowledge, understanding and application of the themes. Curriculum also focuses on diagrams, experiments and solutions to numerical problems to make the subject more interesting.

In grade 8, students understand about different kinds of physical and chemical changes which take place in day to day life, different types of mixtures and how to separate each and every component present in the mixture, writing the chemical formula and chemical equations using word equations and balancing chemical reactions. Students also understand in depth about different types of chemical reactions, reactivity series of metals and non metals. Theme Hydrogen is mainly about preparation of Hydrogen in Laboratory, properties and uses of Hydrogen. Students understand why water is considered a universal solvent and also reactivity of metals under different conditions. In Grade 8 ICSE students are introduced to the theme Carbon and its compounds under Organic Chemistry.

By the end of the academic year, students will be able to think creatively and practically, and will have acquired problem solving skills and subject understanding.

The Physics Curriculum for Grade 8 ICSE offers a deeper understanding of the fundamentals of Physical concepts connected with the real world. It starts off with continuing from their preliminary understanding of Matter, and an introduction to the particle theory that make up the properties of matter and the various other concepts linked to it, namely Density, Temperature, Pressure, change of state, energy conduction, etc. Further understanding of concepts like Density, Force, Pressure, Energy and their types, a more detailed understanding of Light energy and Sound Energies. Students develop basic steps of scientific study, namely measurements by studying techniques of measuring simple physical quantities like Density of various states of matter.

In Grade 8, students get introduced to representing Physical Concepts in the form of relations using symbols and expressing them mathematically. They also get an idea of how to apply these relations in examples of real world situations where simple numerals are involved.

As part of Heat energy, they learn about various effects of Heat on matter, including expansions and how this is of use in the real world. In Light energy, they delve deeper into topics of Light like Reflection, both with plane and curved mirrors, get an introduction to Refraction and its applications, and in the topic of Sound, they will understand the features/characteristics of sound, as also applications like Sonar.

Towards the end of Grade 8 they are introduced to Basic Concepts of Electrical energy starting from Static Electricity, their formation, application in natural Phenomena like Lightning, measurements using Electroscopes and finally a basic understanding of simple electric circuits and safety precautions.

SOCIAL SCIENCE

The History curriculum provides a comprehensive learning about the Mughal Empires in India and the achievements of significant rulers. In World History, students do an in depth study of the Renaissance period in Europe. The content provides opportunities to develop historical understanding through key concepts, including evidence, continuity and change, cause and effect, perspective and contestability. These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

In Civics, students analyze the constitution and the fundamental rights and duties of citizens. They will be able to classify the Hierarchy and Types of Law in our country. Students will investigate the factors that shape national identity

There are two units of study in the Year 8 curriculum for Geography: 'Landforms and landscapes' and 'Changing nations'.

'Landforms and landscapes' focuses on investigating geomorphology through a study of landscapes and their landforms. This unit examines the processes that shape individual landforms, the values and meanings placed on landforms and landscapes by diverse cultures, hazards associated with landscapes, and management of landscapes. 'Landforms and landscapes' develops students' understanding of the concept of environment and enables them to explore the significance of landscapes to people, including Indigenous Peoples. These distinctive aspects of landforms and landscapes are investigated using studies drawn from India and throughout the world.

'Changing nations' investigates the changing human geography of countries, as revealed by shifts in population distribution. The spatial distribution of population is a sensitive indicator of economic and social change, and has significant environmental, economic and social effects, both negative and positive. The unit explores the process of urbanisation and draws on a study of a country of the Asia region to show how urbanisation changes the economies and societies of low- and middle-income countries. It investigates the reasons for the high level of urban concentration in India, one of the distinctive features of India's human geography, and compares India with other countries. The redistribution of population resulting from internal migration is examined through case studies of India and China, and is contrasted with the way international migration reinforces urban concentration in more developed countries. The unit then examines issues related to the management and future of India's urban areas.



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SECOND LANGUAGE – HINDI/KANNADA

By the end of Grade 8 students begin to communicate in Hindi/Kannada using a range of vocabulary and formulaic expressions appropriate for context and need. They recognise and respond to various elements of the language - punctuation marks, anunasik, anuswar and nukta, joining common words (sandhi) and compound words (samās). Students brainstorm, plan, draft and compose written work - samvaad, soochna, chitra varnan/chitrada varnane, vigyapan/vignapane, radio show, and letters. They are receptive to others' opinions - modifying their response and manner of interaction to match context. Students will get familiar with different types of Hindi/Kannada texts like, One act plays, biographical narratives, travelogues and formal letter writing.

Students are able to recognize that intonation carries meaning. They use comprehensible pronunciation to emphasise what they convey. They use their proficiency in Hindi/Kannada to explore and study other areas of knowledge through print and non-print media. Students will also make use of formal and informal salutations in their talk and interact with peers to negotiate and complete assigned project. They acquire the ability to listen with concentration, empathy and understanding.

THIRD LANGUAGE

Grade 8 curriculum offers Kannada / French as the third language*. The third language curriculum helps students with the skills of listening, speaking, reading and writing in a variety of contexts and trains students to be able to adapt language to suit different tasks, audiences and purposes. It aims to develop confidence in the students so that they can communicate in the language effectively. It helps the students work on their ability to critique - to analyse and evaluate diverse texts, thereby, questioning ideas and articulating their point of view.

*Please check school specific second and third language options as Boards specify these for all their schools.



COMPUTER SCIENCE

Students analyze the consequences of leaving digital footprints online. They identify Arduino Uno board components and common electronic components. They identify the hazards of working with electricity. Students use Arduino Uno board and sensors such as motion detectors, photoresistors and piezo-buzzers to build detection systems and control systems for specific purposes. Students explore Python Collections- lists, dictionaries and tuples. Students understand how data can be grouped and manipulation using dictionaries and tuples. They are then introduced to Python functions. Students write various python programs to explore the use of functions. They implement searching and sorting algorithms using Python functions. Students learn about data representation in computers. They convert data present in one number system to another system. They design technology based solutions for real world problems. They learn about computer networks.

Practical Skills:

- Design, build and test detection and control systems using Arduino.
- Use Google apps to create and share information and collaborate with peers.
- Recall Python Lists
- Manipulate Python - Dictionaries and Tuples.
- Demonstrate the use of built in functions and modules.
- Create and demonstrate user defined functions in Python.
- Demonstrate how standard searching and sorting algorithms work using Python functions.



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LIFESKILLS

The life-skills curriculum in Middle 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, importance of teamwork, etc. 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.



OTHER

Students in Grade 8 also attend weekly sessions in Yoga, Physical Education and quiet reading time at the school library.



