CLASS :IX SUBJECT : ENGLISH

Learning Outcomes

The learner

- Listens to announcements, instructions, read aloud texts, audio /videos, for information, gist and details; responds by answering questions accordingly.
- Listens to and discusses literary / nonliterary inputs in varied contexts to infer, interpret and appreciate.
- Communicates thoughts, ideas, views and opinions verbally and non-verbally
- Speaks fluently with proper pronunciation, into nation and pause, using appropriate grammar.
- Listens to and speaks on a variety of verbal inputs viz. debate, speech, group discussion, power point presentation, radio show interview, mock parliament etc.
- Reads aloud and recites poems with proper stress, pause, tone and intonation.
- Reads with comprehension, the given text /materials, employing strategies like skimming, scanning, predicting, previewing, reviewing, inferring.
- Reads silently with comprehension, interprets layers of meaning
- Writes short answers , paragraphs, reports on a given theme using appropriate vocabulary and grammar
- Writes letters, both formal and informal, invitations, advertisements, notices, slogans, messages and emails etc
- Writes short dialogues and participates in role plays, skits, street plays for the promotion of social causes like beti bachao – beti padhao, swachh bharat abhiyaan, conservation of environment, child labour and promotion of literacy etc.
- Uses appropriate punctuation marks, correct spellings of words while taking down dictation
- Takes notes and makes notes while listening to tv news, discussions, speech, reading aloud silent reading of texts, etc. and summarizes.
- Organizes and structures thoughts, presents information and opinions in a variety of oral and written forms for different audiences and purposes.
- Interprets map /graph /table and speaks or writes a paragraph based on interpretation.
- Edits passages with appropriate punctuation marks, grammar and correct spelling.
- Uses grammar items in context such as reporting verbs, passive and tense, time and tense etc
- Uses words, phrases, idioms and words chunks for meaning-making in varied contexts.
- Understands and elicits meanings of the words in different contexts, and by using dictionary, thesaurus and digital facilities.
- Reads literary texts for enjoyment / pleasure and compares, interprets and appreciates characters, themes, plots and incidents and forms an opinion.
- Explains specific features of different literary genres for interpretation and literary appreciation.
- Identifies and appreciates significant literary elements such as – metaphor, imagery, symbol, simile, onomatopoeia, intention /point of view, rhyme scheme etc.
- Writes short stories and composes poems on the given theme or on their own.
- Exhibits in action and practice the values of honesty, cooperation, patriotism, and while speaking and writing on a variety of topics.
- Uses bilingual /multilingual abilities to comprehend a text and participates in activities like translations and bilingual /multilingual discourses on various themes.
- Reads the poems, stories, texts given in braille; graphs and maps given in tactile /raised material; interprets, discusses, and writes with the help of a scribe.
- Appreciates similarities and differences across languages in a multilingual classroom and society.
- Recognizes and appreciates cultural experiences / diversity in the text and makes oral and written presentations.

CLASS :IX SUBJECT : MATHS

Learning Outcomes

The learner —

- **Applies logical reasoning in classifying real numbers, proving their properties and using them in different situations.**
- **Identifies /classifies polynomials among algebraic expressions and factorizes them by applying appropriate algebraic identities.**
- **Relates the algebraic and graphical representations of a linear equation in one /two variables and applies the concepts to daily life situations.**
- **Identifies similarities and differences among different geometrical shapes.**
- **Derives proofs of mathematical statements particularly related to geometrical concepts, like parallel lines, triangles, quadrilaterals, circles etc. by applying axiomatic approach and solves problems using them.**
- **Finds areas of all types of triangles by applying appropriate formulae.**
- **Constructs different geometrical shapes like bisectors of line segments, angles, and triangles under given conditions and provides reasons for the processes of such constructions.**
- **Develops strategies to locate points in a cartesian plane.**
- **Identifies and classifies the daily life situations in which mean, median and mode can be used.**
- **Analyses data by representing it in different forms like, tabular form (grouped or ungrouped), bar graph, histogram (with equal and varying width and length), and frequency polygon.**
- **Calculates empirical probability through experiments.**
- **Derives formulas for surface areas and volumes of different solid objects like, cubes, cuboids, right circular cylinders / cones, spheres and hemispheres and applies them to objects found in the surroundings.**

Learning Outcomes

The learner —

- **Differentiates materials / objects / organisms / phenomena / processes, based on such as prokaryote and eukaryote, plant cell and animal cell, diffusion and osmosis, simple and complex tissues, distance and displacement, speed and velocity, balanced and unbalanced forces, element, compound and mixture, solution, suspension and colloid, isobars and isotopes, etc.**
- **Classifies materials / objects / organisms / phenomena / processes, based on, properties / characteristics, such as classification of plants, animals under various hierarchical sub-groups, natural resources, classification of matter based on their states (solid / liquid / gas) and composition (element / compound / mixture), etc.**
- **Plans and conducts investigations / experiments to arrive at and verify the facts / principles / phenomena or to seek answers to queries on their own, such as how does speed of an object change? How objects float / sink when placed on surface of liquid? Is there any change in mass when chemical reaction takes place? What is the effect of heat on state of substances? What is the effect of compression on different states of matter? Where are stomata present in different types of leaves? Where are growing tissues present in plants?**
- **Relates processes and phenomena with causes / effects, such as symptoms with diseases / causal agents, tissues with their functions, production with use of fertilizers, process of evaporation with cooling effect, various processes of separation with the physical and chemical properties of the substances, production of sound with vibrations of source, etc.**
- **Explains processes and phenomena, such as function of different organelles, spread of diseases and their prevention, effect of force on the state of motion of objects, action and reaction, revolution of planets and satellites, conservation laws, principle of separation of different gases from air, melting / boiling / freezing, how bats use ultrasound to catch prey, etc.**
- **Calculates using the data given, such as distance, velocity, speed, frequency, work done, number of moles in a given mass of substance, concentration of solution in terms of mass by mass percentage of substances, conversion of Celsius scale to kelvin scale and vice versa, number of neutrons in an atom from atomic number and mass number, speed of sound, kinetic and potential energies of an object, boiling points of liquids to predict the order of their separation from the mixture, etc.**
- **Draws labelled diagrams / flow charts / concept map /graphs, such as biogeochemical cycles, cell organelles and tissues, human ear, distance-time and speed-time graphs, distribution of electrons in different orbits, process of distillation / sublimation, etc.**

CLASS :IX SUBJECT : SCIENCE

Learning Outcomes

- **Analyses and interprets graphs / figures etc., such as distance-time and velocity-time graphs, computing distance / speed / acceleration of objects in motion, properties of components of a mixture to identify the appropriate method of separation, crop yield after application of fertilizers, etc.**
- **Uses scientific conventions /symbols / equations to represent various quantities / elements /units, such as SI units, symbols of elements, formulae of simple compounds, chemical equations, etc.**
- **Measures physical quantities using appropriate apparatus /instruments / devices, such as weight and mass of an object using spring balance, mass using a physical balance, time period of a simple pendulum, volume of liquid using measuring cylinder, temperature using thermometer, etc.**
- **Applies learning to hypothetical situations, such as weight of an object at moon, weight of an object at equator and poles, life on other planets, etc.**
- **Applies scientific concepts in daily life and solving problems, such as separation of mixtures, uses safety belts in automobiles, covers walls of large rooms with sound absorbent materials, follows intercropping and crop rotation, takes preventive measures to control disease causing agents, etc.**
- **Derives formulae / equations / laws, such as mathematical expression for second law of motion, law of conservation of momentum, expression for force of gravity, equations of motion from velocity time graphs, etc.**
- **Draws conclusion, such as classification of life forms is related to evolution, deficiency of nutrients affects physiological processes in plants, matter is made up of particles, elements combine chemically in a fixed ratio to form compounds, action and reaction act on two different bodies, etc.**
- **Describes scientific discoveries / inventions, such as discovery of various atomic models, discovery of cell with invention of microscope, experiments of Lavoisier and Priestley, beliefs regarding motion, discovery of real cause for peptic ulcers, Archimedes principle, classification of living things, etc.**
- **Designs models using eco-friendly resources, such as 3-d model of a cell, water purification system, stethoscope, etc.**
- **Records & reports experimental data objectively and honestly. Exhibits values of honesty / objectivity / rational thinking / freedom from myths /superstitious beliefs while taking decisions, respect for life, etc., such as records and reports experimental data exactly, sexually transmitted diseases are not spread by casual physical contact, vaccination is important for prevention of diseases, etc.**
- **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.**
- **Applies the interdependency and interrelationship in the biotic and abiotic factors of environment to promote conservation of environment, such as organic farming, waste management, etc.**