

GRADE – 10

- ✓ **Chemistry**- Safety in the laboratory, properties and classification of matter, chemistry in our world, models of atom, elements and compounds, families – group 1,2,17,18, periodic table, metals and non metals, metalloids, hydrogen , isotopes and atomic molar mass, IUPAC, ionic compounds, compounds with multivalent metals, polyatomic atoms, molecular compounds, covalent bond, water, acids and bases, buffers, pH, neutralization, our chemical society, chemical reaction and equations, balancing equations, significant digits, mole,
- ✓ **Earth and Space Science** – energy flow in global system- the biosphere, atmosphere, spheres of atmosphere, weather vs climate, effect of climate on humans, effect of climate on other organisms, climate change, changing climate, types of evidence, instrumental evidences, direct evidence, indirect evidence, tree ring analysis, ice core sampling, fossil records& pollen samples, Energy transfer through the biosphere – mechanism for change, solar energy, insolation & the angle of inclination, earth/ sun relationship, angle of incidence, albedo, importance of albedo, summary of earth/sun relationship, natural greenhouse effect, greenhouse gases, net radiation budget, thermal energy transfer, conduction, convection , thermal energy transfer in the in the atmosphere, global wind patterns, thermal energy transfer in the hydrosphere, specific heat capacity, quantity of thermal energy, the hydrologic cycle and energy transfer, phase changes , heat of fusion& heat of vaporization, heating curve of water, calculating the heat of fusion of fusion or vaporization, theoretical heat of fusion and vaporation, Biomes – biomes are open systems, earth’s biomes, the six biomes, tundra, taiga, deciduous forest, grassland, rainforest, desert, climatographs, use of climatographs , Climate change – changes in greenhouse gases, measuring a change in greenhouse gases, carbon sinks & carbon sources, other sources, global warming, political collaboration on climate change, impacts of climate change,
- ✓ **Physics – significant digits** – truth in numbers, digits and significant digits, scientific notation vs expanded form , converting an expanded form numbers into scientific notations, adjusting the number of significant digits, motion- uniform motion, using variables in physics, speed, rearranging a formula, using graphs to analyze average speed, using graphs to analyse motion , velocity – speed vs velocity, scalar vs vector quantities, distance travelled vs displacement, distance travelled, sign convention, identifying vector directions, vectors in science, velocity, acceleration- falling or rising objects, graphs, force – newtons law of motion, force, work, work - work input vs work output , work and energy , types of energy , categories of energy(Potential and kinetic energy), nuclear energy, energy conversions, volta pile the first battery, joule’s experiments, potential energy – what is potential energy, gravitational potential energy, why no negatives, weight vs mass, other types of potential energy , kinetic energy & motion – calculating kinetic energy , a closer look at the formula & an example, how do we calculate EK if the object is accelerating , mechanical energy – energy conversions, converting between E_p and E_k , the law of conservation of energy, for falling or rising objects, energy conversions in nature, energy conversions to produce electricity, hydroelectric power stations, coal – burning power plants, nuclear power plants, solar cells, hydrogen fuel cells
- ✓ **Biology** – The microscope, development of cell theory, development in imaging, staining and cell research, the cell, cell tissues and systems, the leaf and photosynthesis, transport in plants, control system in plants