

COURSE STRUCTURE

CLASS IX

Second Term	Marks : 90
Units	Marks
I. Matter - Its Nature and Behaviour	17
II. Organisation in the Living World	25
III. Motion, Force and Work	36
IV. Our Environment	12
Total	90

Theme : Materials **(28 Periods)**

Unit : Matter - Nature and Behaviour

Particle nature, basic units : atoms and molecules. Law of constant proportions. Atomic and molecular masses.

Mole Concept : Relationship of mole to mass of the particles and numbers. Valency. Chemical formula of common compounds.

Structure of atom : Electrons, protons and neutrons; Isotopes and isobars.

Theme : The World of The Living **(23 Periods)**

Unit : Organization in the living World.

Biological Diversity : Diversity of plants and animals - basic issues in scientific naming, basis of classification. Hierarchy of categories / groups, Major groups of plants (salient features) (Bacteria, Thallophyta, Bryophyta, Pteridophyta, gymnosperms and Angiosperms). Major groups of animals (salient features) (Non-chordates upto phyla and chordates upto classes).

Health and Diseases : Health and its failure. Infectious and Non-infectious diseases, their causes and manifestation. Diseases caused by microbes (Virus, Bacteria and protozoans) and their prevention, Principles of treatment and prevention. Pulse polio programmes.

Theme : Moving Things, People and Ideas **(24 Periods)**

Unit : Motion, Force and Work

Floatation : Thrust and pressure. Archimedes' principle, buoyancy, elementary idea of relative density.

Work, energy and power : Work done by a force, energy, power; kinetic and potential energy; law of conservation of energy.

Sound : Nature of sound and its propagation in various media, speed of sound, range of hearing in humans; ultrasound; reflection of sound; echo and SONAR.

Structure of the human ear (auditory aspect only).

Theme : Natural Resources

(15 Periods)

Unit : Our environment

Physical resources : Air, Water, Soil.

Air for respiration, for combustion, for moderating temperatures; movements of air and its role in bringing rains across India.

Air, water and soil pollution (brief introduction). Holes in ozone layer and the probable damages.

Bio-geo chemical cycles in nature : Water, oxygen, carbon and nitrogen

PRACTICALS

Practical should be conducted alongside the concepts taught in theory classes.

SECOND TERM

1. To verify laws of reflection of sound.
2. To determine the density of solid (denser than water) by using a spring balance and a measuring cylinder.
3. To establish the relation between the loss in weight of a solid when fully immersed in
 - a. tap water
 - b. strongly salty water, with the weight of water displaced by it by taking at least two different solids.
4. To observe and compare the pressure exerted by a solid iron cuboid on fine sand/ wheat flour while resting on its three different faces and to calculate the pressure exerted in the three different cases.
5. To determine the velocity of a pulse propagated through a stretched string/slinky.
6. To study the characteristic of spirogyra/Agaricus, Moss/Fern, Pinus (either with male or female cone) and an Angiospermic plant. Draw and give two identifying features of groups they belong to.
7. To observe and draw the given specimens-earthworm, cockroach, bony fish and bird. For each specimen record
 - a. one specific feature of its phylum.
 - b. one adaptive feature with reference to its habitat.
8. To verify the law of conservation of mass in a chemical reaction.
9. To study the external features of root, stem, leaf and flower of monocot and dicot plants.
10. To study the life cycle of mosquito.