

# Syllabus

## COURSE STRUCTURE CLASS - 9 (ANNUAL EXAMINATION)

Marks : 80

Unit No.	Unit	Marks
I	Matter - Its Nature and Behaviour	25
II	Organisation in the Living World	22
III	Motion, Force and Work	27
V	Food; Food Production	06
	<b>Total</b>	<b>80</b>
	<b>Internal Assessment</b>	<b>20</b>
	<b>Grand Total</b>	<b>100</b>

### Theme: Materials

#### Unit I: Matter-Nature and Behaviour

Definition of matter; solid, liquid and gas; characteristics - shape, volume, density; change of state-melting (absorption of heat), freezing, evaporation (cooling by evaporation), condensation, sublimation.

**Nature of matter** : Elements, compounds and mixtures. Heterogeneous and homogenous mixtures, colloids and suspensions. Physical and chemical changes (excluding separating the components of a mixture).

**Particle nature and their basic units**: Atoms and molecules, Law of Chemical Combination, Chemical formula of common compounds, Atomic and molecular masses.

**Structure of atoms** : Electrons, protons and neutrons, Valency, Atomic Number and Mass Number, Isotopes and Isobars.

### Theme: The World of the Living

#### Unit II: Organization in the Living World

**Cell - Basic Unit of life** : Cell as a basic unit of life; prokaryotic and eukaryotic cells, multicellular organisms; cell membrane and cell wall, cell organelles and cell inclusions; chloroplast, mitochondria, vacuoles, endoplasmic reticulum, Golgi apparatus; nucleus, chromosomes - basic structure, number.

#### Tissues, Organs, Organ System, Organism :

Structure and functions of animal and plant tissues (only four types of tissues in animals; Meristematic and Permanent tissues in plants).

## Theme: Moving Things, People and Ideas

### Unit III: Motion, Force and Work

**Motion:** Distance and displacement, velocity; uniform and non-uniform motion along a straight line; acceleration, distance-time and velocity-time graphs for uniform motion and uniformly accelerated motion, elementary idea of uniform circular motion.

**Force and Newton's laws :** Force and Motion, Newton's Laws of Motion, Action and Reaction forces, Inertia of a body, Inertia and mass, Momentum, Force and Acceleration.

**Gravitation :** Gravitation; Universal Law of Gravitation, Force of Gravitation of the earth (gravity), Acceleration due to Gravity; Mass and Weight; Free fall.

**Floatation :** Thrust and Pressure. Archimedes' Principle; Buoyancy.

**Work, Energy and Power :** Work done by a Force, Energy, power, Kinetic and Potential energy; Law of conservation of energy (excluding commercial unit 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.

## Theme: Food

### Unit IV: Food Production

Plant and animal breeding and selection for quality improvement and management; Use of fertilizers and manures; Protection from pests and diseases; Organic farming.

#### Note for the Teachers:

1. The chapter Natural Resources (NCERT Chapter 14) will not be assessed in the year-end examination. However, learners may be assigned to read this chapter and encouraged to prepare a brief write up on any concept of this chapter in their Portfolio. This may be for Internal Assessment and credit may be given for Periodic Assessment/Portfolio.
2. The NCERT text books present information in boxes across the book. These help students to get conceptual clarity. However, the information in these boxes would not be assessed in the year-end examination.