

SCIENCE SYLLABUS

Class – 9

9th Class Science Syllabus – An Overview

Syllabus for Class 9 Science is designed to provide a foundational understanding of various scientific principles. It is divided into three broad sections: Physics, Chemistry, and Biology. Here's a detailed breakdown of the topics and sub-topics covered in the Class 9 Science syllabus:

Here our chapters for ITSE Examination :-

Chapter 1: Matter in Our Surroundings

Chapter 2: Is Matter Around Us Pure?

Chapter 3: Atoms and Molecules

Chapter 4: Structure of the Atom

Chapter 5: The Fundamental Unit of Life

Chapter 6: Tissues

Chapter 7: Diversity in Living Organisms

Chapter 8: Motion

Chapter 9: Force and Laws of Motion

Chapter 10: Gravitation

Chapter 11: Work and Energy

Chapter 12: Sound

Chapter 13: Why Do We Fall Ill?

Chapter 14: Natural Resources

Chapter 15: Improvement in Food Resources

Chapter 1: Matter in Our Surroundings

Topics and Sub-topics:

- **Physical Nature of Matter:** Characteristics and States
- **Properties of Matter:** Solid, Liquid, Gas
- **Change of State:** Melting, Freezing, Evaporation, Condensation, Sublimation
- **Latent Heat:** Latent Heat of Fusion and Vaporization
- **Evaporation:** Factors Affecting Evaporation and Its Applications.

Chapter 2: Is Matter Around Us Pure?

Topics and Sub-topics:

- **Pure Substances:** Elements and Compounds
- **Mixtures:** Homogeneous and Heterogeneous

- **Separation of Mixtures:** Various Techniques
- **Colloids and Suspensions**

- **Physical and Chemical Changes**

Chapter 3: Atoms and Molecules

Topics and Sub-topics:

- **Laws of Chemical Combination:** Law of Conservation of Mass, Law of Constant Proportions.

- **Dalton's Atomic Theory**

- **Atoms and Molecules:** Definitions and Differences

- **Molecular Mass and Mole Concept**

- **Chemical Formulas:** Writing and Balancing

Chapter 4: Structure of the Atom

Topics and Sub-topics:

- **Discovery of Subatomic Particles:** Electrons, Protons, Neutrons.

- **Models of Atom:** Thomson's Model, Rutherford's Model, Bohr's Model.
- **Distribution of Electrons in Shells (Bohr's Model)**
- **Valency and Atomic Number**
- **Isotopes and Isobars**

Chapter 5: The Fundamental Unit of Life

Topics and Sub-topics:

- **Cell Theory**
- **Structure of Cell:** Plant and Animal Cells
- **Cell Organelles and Their Functions:** Nucleus, Mitochondria, Ribosomes, etc.
- **Prokaryotic and Eukaryotic Cells**
- **Cell Division:** Mitosis and Meiosis

Chapter 6: Tissues

Topics and Sub-topics:

- **Plant Tissues:** Meristematic and Permanent Tissues.
- **Animal Tissues:** Epithelial, Connective, Muscular, Nervous Tissues.

Chapter 7: Diversity in Living Organisms

Topics and Sub-topics:

- **Classification and its Importance**
- **Five Kingdom Classification:** Monera, Protista, Fungi, Plantae, Animalia.
- **Hierarchy of Classification Groups:** Phylum, Class, Order, Family, Genus, Species.
- **Nomenclature and Scientific Naming**
- **Major Groups in Kingdom Plantae and Animalia**

Chapter 8: Motion

Topics and Sub-topics:

- **Describing Motion:** Distance and Displacement, Uniform and Non-Uniform Motion.
- **Speed and Velocity**
- **Acceleration**
- **Graphical Representation of Motion**
- **Equations of Motion by Graphical Method**
- **Uniform Circular Motion**

Chapter 9: Force and Laws of Motion

Topics and Sub-topics:

- **Concept of Force:** Balanced and Unbalanced Forces
- **First Law of Motion:** Inertia and Momentum

- **Second Law of Motion:** Force, Mass, and Acceleration Relationship
- **Third Law of Motion:** Action and Reaction Forces
- **Law of Conservation of Momentum**

Chapter 10: Gravitation

Topics and Sub-topics:

- **Universal Law of Gravitation**
- **Force of Gravitation of Earth (Gravity)**
- **Free Fall and Acceleration due to Gravity**
- **Mass and Weight**
- **Weight of an Object on the Moon**
- **Thrust and Pressure**

- **Archimedes' Principle and Buoyancy**
- **Relative Density**

Chapter 11: Work and Energy

Topics and Sub-topics:

- **Concept of Work:** Work Done by a Constant Force
- **Energy:** Kinetic and Potential Energy
- **Work-Energy Theorem**
- **Law of Conservation of Energy**
- **Power:** Definition and Formula
- **Commercial Unit of Energy**

Chapter 12: Sound

Topics and Sub-topics:

- **Production and Propagation of Sound**
- **Sound Needs a Medium to Travel**
- **Characteristics of Sound Waves**
 - Frequency, Amplitude, Time Period, Wavelength
- **Speed of Sound in Different Media**
- **Reflection of Sound: Echo and Reverberation**
- **Range of Hearing in Humans**
- **Applications of Ultrasound**
- **SONAR and its Applications**
- **Structure of Human Ear**

Chapter 13: Why Do We Fall Ill?

Topics and Sub-topics:

- **Health and Its Failure**
- **Disease and Its Causes**
- **Infectious and Non-Infectious Diseases**
- **Infectious Disease Agents**
- **Principles of Treatment and Prevention**
- **Immunity and Vaccination**

Chapter 14: Natural Resources

Topics and Sub-topics:

- **Renewable and Non-Renewable Resources**
- **Importance of Water, Air, and Soil**

- **Biogeochemical Cycles:** Water Cycle, Oxygen Cycle, Carbon Cycle, Nitrogen Cycle.

- **Greenhouse Effect and Global Warming**
- **Ozone Layer and Its Depletion**

- **Sustainable Management of Natural Resources**

Chapter 15: Improvement in Food Resources

Topics and Sub-topics:

- **Improvement in Crop Yields**
- **Nutrient Management**
- **Irrigation and Cropping Patterns**
- **Pest Control and Management**
- **Animal Husbandry and Dairying**
- **Poultry Farming and Fisheries**
- **Organic Farming**