

CLASS 10th - Science

1. Chemical Reactions and Equations

- Chemical equations
 - Writing a chemical equation
 - Balanced chemical equations
- Types of chemical reactions
 - Combination reaction
 - Decomposition reaction
 - Displacement reaction
 - Double displacement reaction
 - Oxidation and reaction
- Have you observed the effects of oxidation reactions in everyday life
 - Corrosion
 - Rancidity

2. Acids, Bases and Salts

- Understanding the chemical properties of acids and bases
 - Acids and bases in the laboratory
 - How do acids and bases react with the metals
 - How do metal carbonates and metal hydrogencarbonates react with acids
 - How do acids and bases react with each other
 - Reaction of metallic oxides with acids
 - Reaction of a non-metallic oxide with base

- What do all acids and all bases have in common
 - What happens to an acid or a base in a water solution?
- How strong are acid or base solutions?
 - Importance of pH in everyday life
- More about salts
- Family of salts
 - pH of salts
 - Chemicals from common salt
 - Are the crystals of salts really Dry?

3. Metals and Non-metals

- Physical properties
 - Metals
 - Non-metals
- Chemical properties of metals
 - What happens when Metals are burnt in Air?
 - What happens when Metals react with Water?
 - What happens when Metals react with Acids?
 - How do Metals react with Solutions of other metal Salts?
 - The Reactivity Series
- How do metals and non-metals react?
 - Properties of Ionic Compounds
- Occurrence of metals
 - Extraction of Metals
 - Enrichment of Ores
 - Extracting Metals Low in the Activity Series

- Extracting Metals in the Middle of the Activity Series
- Extracting Metals towards the Top of the Activity Series
- Refining of Metals
- Corrosion
 - Prevention of Corrosion

4. Carbon and its Compounds

- Bonding in carbon – the covalent bond
- Versatile nature of carbon
 - Saturated and Unsaturated Carbon Compounds
 - Chains, Branches and Rings
 - Homologous series
 - Nomenclature of carbon compounds
- Chemical properties of carbon compounds
 - Combustion
 - Oxidation
 - Addition Reaction
 - Substitution reaction
- Some important carbon compounds
 - Properties of Ethanol
 - Properties of Ethanoic Acid
- Soaps and detergents

5. Periodic Classification of Elements

- Making order out of chaos – early attempts at the classification of elements
 - Döbereiner's Triads

- Newlands' Law of Octaves
- Making order out of chaos – mendeleev's periodic table
 - Achievements of Mendeleev's Periodic Table
 - Limitations of Mendeleev's Classification
- Making order out of chaos – the modern periodic table
 - Position of Elements in the Modern Periodic Table
 - Trends in the Modern Periodic Table

6. Life Processes

- What are the life process?
- Nutrition
 - Autotrophic nutrition
 - Heterotrophic Nutrition
 - How do organisms obtain their nutrition?
 - Nutrition in human beings
- Respiration
- Transportation
 - Transportation in human beings
 - Transportation in plants
- Excretion
 - Excretion in Human Beings
 - Excretion in Plants

7. Control and Coordination

- Animals – nervous system
 - What happens in Reflex Actions?

- Human Brain
- How are these Tissues protected?
- How does the Nervous Tissue cause Action?
- Coordination in plants
 - Immediate Response to Stimulus
 - Movement Due to Growth
- Hormones in animals

8. How do Organisms Reproduce?

- Do Organisms create exact copies of themselves?
 - The Importance of Variation
- Modes of Reproduction used by Single Organisms
 - Fission
 - Fragmentation
 - Regeneration
 - Budding
 - Vegetative Propagation
 - Spore Formation
- Sexual Reproduction
 - Why the Sexual Mode of Reproduction?
 - Sexual Reproduction in Flowering Plants
 - Reproduction in Human Beings
 - Male Reproductive System
 - Female Reproductive System
 - What happens when the Egg is not Fertilised?
 - Reproductive Health

9. Heredity and Evolution

- Accumulation of variation during reproduction
- Heredity
 - Inherited Traits
 - Rules for the Inheritance of Traits –
 - Mendel’s Contributions
 - How do these Traits get Expressed?
 - Sex Determination
- Evolution
 - An Illustration
 - Acquired and Inherited Traits
- Speciation
- Evolution and Classification
 - Tracing Evolutionary Relationships
 - Fossils
 - Evolution by Stages
- Evolution should not be equated with ‘Progress’
 - Human Evolution

10. Light – Reflection and Refraction

- Reflection of light
- Spherical mirrors
 - Image Formation by Spherical Mirrors
 - Representation of Images Formed by Spherical
 - Mirrors Using Ray Diagrams
 - Sign Convention for Reflection by Spherical Mirrors
 - Mirror Formula and Magnification

- Refraction of light
 - Refraction through a Rectangular Glass Slab to understand
 - The Refractive Index
 - Refraction by Spherical Lenses
 - Image Formation by Lenses
 - Image Formation in Lenses Using Ray Diagrams
 - Sign Convention for Spherical Lenses
 - Lens Formula and Magnification
 - Power of a Lens

11. The Human Eye and the Colourful World

- The human eye
 - Power of accommodation
- Defects of vision and their correction
- Refraction of light through a prism
- Dispersion of white light by a glass prism
- Atmospheric refraction
- Scattering of Light
 - Tyndall Effect
 - Why is the colour of the clear Sky Blue?
 - Colour of the Sun at Sunrise and Sunset

12. Electricity

- Electric current and circuit
- Electric potential and potential difference circuit diagram
- Ohm's law
- Factors on which the resistance of a

- Conductor depends
- Resistance of a system of resistors
 - Resistors in Series
 - Resistors in Parallel
- Heating effect of electric current
 - Practical Applications of Heating Effect of Electric Current
- Electric power

13. Magnetic Effects of Electric Current

- Magnetic field and field lines
- Magnetic field due to a current carrying conductor
 - Magnetic field due to a current through a straight conductor
 - Right hand thumb rule
 - Magnetic Field due to a Current through a circular loop
 - Magnetic Field due to a Current in a solenoid
- force on a current-carrying conductor in a magnetic field
- Electric motor
- Electromagnetic induction
- Electric generator
- Domestic electric circuit

14. Sources of Energy

- What is a good source of energy?

- Conventional sources of energy
 - Fossil Fuels
 - Thermal Power Plant
 - Hydro Power Plants
 - Improvements in the Technology for using Conventional Sources of Energy
- Alternative or non-conventional sources of energy
 - Solar Energy
 - Energy from the Sea
 - Geothermal Energy
 - Nuclear Energy
- Environmental consequences
- How long will an energy source last us?

15. Our Environment

- What happens when we add our waste to the environment?
- Eco-system — what are its components?
 - Food Chains and Webs
- How do our activities affect the environment?
 - Ozone Layer and How it is Getting Depleted
 - Managing the garbage we Produce

16. Sustainable Management of Natural Resources

- Why do we need to manage our resources?
- Forests and wild life

- Stakeholders
 - Sustainable Management
- Water for all
 - Dams
 - Water Harvesting
- Coal and petroleum
- An overview of natural resource management