DriveEdumax Academy

SCIENCE

Curriculum for Grade X

Overview

This curriculum aims to provide students with a comprehensive understanding of fundamental scientific concepts and their applications. It is designed to foster critical thinking, problem-solving skills, and a scientific attitude. The curriculum will equip students with the knowledge and skills necessary for further studies in science and related fields.

Goals

- Develop a strong foundation in fundamental scientific concepts.
- Foster critical thinking and problem-solving skills.
- Promote scientific inquiry and experimentation.
- Encourage a lifelong interest in science and its applications.
- Prepare students for higher education and careers in science-related fields.

Pedagogical Approach

- **Inquiry-based learning:** Encourage students to explore questions and discover answers through experimentation and observation.
- **Hands-on activities:** Provide opportunities for students to engage in practical activities that reinforce theoretical concepts.
- **Real-world connections:** Relate scientific concepts to everyday life and current events.
- **Collaborative learning:** Promote teamwork and peer-to-peer learning.
- **Technology integration:** Utilize technology to enhance learning experiences and access additional resources.

Assessment

- **Formative assessment:** Use ongoing assessments, such as quizzes, assignments, and class discussions, to monitor student progress and provide feedback.
- **Summative assessment:** Conduct periodic exams, projects, and presentations to evaluate students' understanding of key concepts.
- **Practical assessments:** Assess students' ability to apply scientific knowledge and skills through laboratory experiments and practical tasks.

Key Features

- **Integrated approach:** Connect different scientific disciplines to provide a holistic understanding of the natural world.
- **Emphasis on practical skills:** Develop students' laboratory skills and ability to conduct experiments.
- **Focus on problem-solving:** Encourage students to apply scientific knowledge to solve real-world problems.
- **Integration of technology:** Utilize technology to enhance learning experiences and access additional resources.
- **Emphasis on scientific inquiry:** Foster a curiosity about the natural world and encourage students to ask questions and seek answers.

Chapters Detail

Chapter 1: Chemical Reactions and Equations

- Types of chemical reactions
- Balancing chemical equations
- Acids, bases, and salts
- Properties of acids and bases
- Neutralization

Chapter 2: Acids, Bases, and Salts

- Properties of acids and bases
- pH scale
- Salts and their formation
- Uses of acids, bases, and salts

Chapter 3: Metals and Non-metals

- Properties of metals and non-metals
- Reactivity series of metals
- Corrosion and its prevention
- Compounds of metals and non-metals

Chapter 4: Carbon and its Compounds

- Organic compounds
- Hydrocarbons
- Functional groups
- Isomerism
- Properties and uses of organic compounds

Chapter 5: Life Processes

- Cellular respiration
- Photosynthesis
- Nutrition
- Transportation
- Excretion

Chapter 6: Control and Coordination

- Nervous system
- Endocrine system
- Hormones and their functions
- Reflex actions

Chapter 7: How do Organisms Reproduce?

- Asexual reproduction
- Sexual reproduction
- Human reproductive system
- Reproductive health

Chapter 8: Heredity

- Mendel's laws of inheritance
- Genetic variation
- DNA and RNA
- Genetic engineering

Chapter 9: Light – Reflection and Refraction

- Laws of reflection
- Images formed by mirrors
- Laws of refraction
- Total internal reflection

Chapter 10: The Human Eye and the Colourful World

- Structure of the human eye
- Vision defects and their correction
- Dispersion of light
- The human eye and color vision

Chapter 11: Electricity

- Electric current
- Ohm's law
- Electrical circuits
- Heating effect of electric current
- Magnetic effect of electric current

Chapter 12: Magnetic Effects of Electric Current

- Magnetic field around a current-carrying conductor
- Electromagnets
- Electric motor
- Electric generator

Chapter 13: Our Environment

- Ecosystem
- Biodegradable and non-biodegradable waste
- Pollution and its effects
- Sustainable development
- Environmental conservation

This curriculum provides a solid foundation in science for Class 10 students, equipping them with the knowledge and skills necessary for future studies and careers. By focusing on inquiry-based learning, practical activities, and real-world connections, the curriculum aims to foster a lifelong interest in science and its applications.