

SCIENCE 9

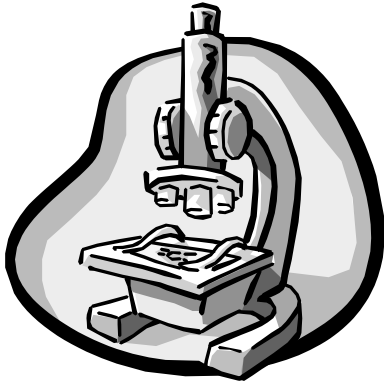
COURSE OUTLINE

Introduction

1. General Lab Safety
 - a. Classroom safety rules
 - b. Fire safety
 - c. Eye safety
 - d. Hazardous Identification Systems
 - e. Proper use of lab equipment
2. Scientific Method
3. SI Units and Scientific Notation
4. Graphing
 - a. How to draw a graph
 - b. Determining slope
5. Lab Report Format
6. Science & Technology
 - a. How are they related
 - b. Scientific Principles



Biology



1. Cell Growth & Reproduction
 - a. Cell structure
 - b. Why cells need to divide
 - c. DNA
 - d. Genes
 - e. The Cell Cycle
 - f. Mutations and cancer
 - g. Asexual reproduction
2. Sexual Reproduction
 - a. Meiosis
 - b. Gametes
 - c. Methods of sexual reproduction
 - d. Zygote development
 - e. Reproductive technologies
 - f. Stem cells

Chemistry

1. Properties of Matter
 - a. Pure substances and mixtures
 - b. Physical vs. chemical properties
 - c. Physical vs. chemical changes
 - d. Changes of state
 - e. Kinetic Molecular Theory
2. Modern Atomic Theory
 - a. Development of Modern Atomic Theory
 - b. Protons, neutrons and electrons
 - c. Atomic Number and Atomic Mass
 - d. Bohr Models
 - e. Atoms vs. ions
3. Periodic Table
 - a. Development of the Periodic Table
 - b. Understanding the Periodic Table
4. Chemical Formula
 - a. Valance, combining capacity and ion charge
 - b. Writing name and formula for simple ionic compounds
 - c. Writing name and formula for multivalent metals
 - d. Writing name and formula for polyatomic ions



Physics

1. Static Electricity
 - a. Types of charges
 - b. Conduction and induction
 - c. Insulators and conductors
 - d. Coulomb's Law
2. Current Electricity
 - a. Electric circuits
 - b. Current, voltage and resistance
 - c. Ohm's Law
 - d. Series and parallel circuits
3. Work, Energy & Power
 - a. Work
 - b. Kinetic vs. potential energy
 - c. Conservation of Energy
 - d. Power
 - e. Energy Consumption



Environmmnetal Science (IF time allows)



- Lesson 1: Introduction to earth's spheres
- Lesson 2: Sun's Energy: wind
- Lesson 3: Sun's Energy Ocean current
- Lesson 4: Food chains and food webs
- Lesson 5: Food pyramids
- Lesson 6: Water cycle
- Lesson 7: Carbon Cycle
- Lesson 8: Nitrogen and phosphorus cycle
- Lesson 9: Responsible decisions
- Lesson 10: Sustainability