

GENETIC TOPICS

UNIT 1: INTRODUCTION TO GENETICS (Chapter 8): 10 days

- Chromosomal Theory
- Chromosome structure and numbers
- Cell Cycle: Interphase and cell division
- Mitosis: phases
- Meiosis: stages and gamete development

UNIT 2: MENDELIAN GENETICS (Chapter 9): 10 days

- Mendel's Experiments: Monohybrid crosses
- Mendel's Postulates of Inheritance

UNIT 3: EXTENSIONS OF MENDELIAN GENETICS (Chapter 9,12): 15 days

- Types of Dominance
- Multiple Alleles
- Polygenic Inheritance
- Complex Traits
- Epistasis and Pleiotropy
- Sex determination, sex-linked genes, sex-influenced traits
- Mutations and Genetic Disorders

UNIT 4: DNA STRUCTURE, REPLICATION, PROTEIN SYNTHESIS (Chapter 10): 10 days

- DNA structure and Replication
- RNA structure, types and functions
- Genetic Code
- Protein synthesis and Mutations

UNIT 5: MUTATIONS AND GENETIC DISEASE (Chapter 13): 10 days ***

- DNA Technology
- Chromosomal mutations
- Project: Genetic diseases

*** This unit will be dependent on time available