

Miller & Levine Biology

http://biology.com/preview_biology.html

Table of Contents

Unit 1 The Nature of Life

1. The Science of Biology

- 1.1 What is Science?
- 1.2 Science in Context
- 1.3 Studying Life

2. The Chemistry of Life

- 2.1 The Nature of Matter
- 2.2 Properties of Water
- 2.3 Carbon Compounds
- 2.4 Chemical Reactions and Enzymes

Unit 2 Ecology

3. The Biosphere

- 3.1 What is Ecology?
- 3.2 Energy, Producers, and Consumers
- 3.3 Energy Flow in Ecosystems
- 3.4 Cycles of Matter

4. Ecosystems and Communities

- 4.1 Climate
- 4.2 Niches and Community Interactions
- 4.3 Succession
- 4.4 Biomes
- 4.5 Aquatic Ecosystems

5. Populations

- 5.1 How Populations Grow
- 5.2 Limits to Growth
- 5.3 Human Population Growth

6. Humans in the Biosphere

- 6.1 A Changing Landscape
- 6.2 Using Resources Wisely
- 6.3 Biodiversity
- 6.4 Ecological Science Serves Humanity

Unit 3 Cells

7. Cell Structure and Function

- 7.1 Life is Cellular
- 7.2 Cell Structure
- 7.3 Cell Transport
- 7.4 Homeostasis and Cells

8. Photosynthesis

- 8.1 Energy and Life
- 8.2 Photosynthesis: An Overview
- 8.3 The Process of Photosynthesis

9. Cellular Respiration and Fermentation

- 9.1 Cellular Respiration: An Overview
- 9.2 The Process of Cellular Respiration
- 9.3 Fermentation

10. Cell Growth and Division

- 10.1 Cell Growth, Division, and Reproduction
- 10.2 The Process of Cell Division
- 10.3 Regulating the Cell Cycle
- 10.4 Cell Differentiation

Unit 4 Genetics

11. Introduction to Genetics

- 11.1 The Work of Gregor Mendel
- 11.2 Applying Mendel's Principles
- 11.3 Other Patterns of Inheritance
- 11.4 Meiosis

12. DNA

- 12.1 Identifying the Substance of Genes
- 12.2 The Structure of DNA
- 12.3 DNA Replication

13. RNA and Protein Synthesis

- 13.1 RNA
- 13.2 Ribosomes and Protein Synthesis
- 13.3 Mutations
- 13.4 Gene Regulation and Expression

14. Human Heredity

- 14.1 Human Chromosomes
- 14.2 Human Genetic Disorders
- 14.3 Studying the Human Genome

15. Genetic Engineering

- 15.1 Selective Breeding
- 15.2 Recombinant DNA
- 15.3 Applications of Genetic Engineering
- 15.4 Ethics and Impacts

Unit 5 Evolution

16. Darwin's Theory of Evolution

- 16.1 Darwin's Voyage of Discovery
- 16.2 Ideas that Shaped Darwin's Thinking
- 16.3 Darwin Presents His Case
- 16.4 Evidence of Evolution

17. Evolution of Populations

- 17.1 Genes and Variation
- 17.2 Evolution as Genetic Change in Populations
- 17.3 The Process of Speciation
- 17.4 Molecular Evolution

18. Classification

- 18.1 Finding Order in Diversity
- 18.2 Modern Evolutionary Classification
- 18.3 Building The Tree of Life

19. History of Life

- 19.1 The Fossil Record
- 19.2 Patterns and Processes of Evolution
- 19.3 Earth's Early History

Unit 6 From Microorganisms to Plants

20. Viruses and Prokaryotes

- 20.1 Viruses
- 20.2 Prokaryotes
- 20.3 Diseases Caused by Bacteria and Viruses

21. "Protists" and Fungi

- 21.1 Protist Classification—The Saga Continues
- 21.2 Protist Structure and Function
- 21.3 The Ecology of Protists
- 21.4 Fungi

22. Introduction to Plants

- 22.1 What is a Plant?
- 22.2 Seedless Plants
- 22.3 Seed Plants
- 22.4 Flowering Plants

23. Plant Structure and Function

- 23.1 Specialized Tissues in Plants
- 23.2 Roots
- 23.3 Stems
- 23.4 Leaves
- 23.5 Transport in Plants

24. Plant Reproduction and Response

- 24.1 Reproduction in Flowering Plants
- 24.2 Fruits and Seeds
- 24.3 Plant Hormones
- 24.4 Plants and Humans

Unit 7 Animals

25. Introduction to Animals

- 25.1 What is an Animal?
- 25.2 Animal Body Plans and Evolution

26. Animal Evolution and Diversity

- 26.1 Invertebrate Evolution and Diversity
- 26.2 Chordate Evolution and Diversity
- 26.3 Primate Evolution

27. Animal Systems I

- 27.1 Feeding and Digestion
- 27.2 Respiration
- 27.3 Circulation
- 27.4 Excretion

28. Animal Systems II

- 28.1 Response
- 28.2 Movement and Support
- 28.3 Reproduction
- 28.4 Homeostasis

29. Animal Behavior

- 29.1 Elements of Behavior
- 29.2 Animals in Their Environments

Unit 8 The Human Body

30. Digestive and Excretory Systems

- 30.1 Organization of the Human Body
- 30.2 Food and Nutrition
- 30.3 The Digestive System
- 30.4 The Excretory System

31. Nervous System

- 31.1 The Neuron
- 31.2 The Central Nervous System
- 31.3 The Peripheral Nervous System
- 31.4 The Senses

32. Skeletal, Muscular, and Integumentary Systems

- 32.1 The Skeletal System
- 32.2 The Muscular System
- 32.3 Skin—The Integumentary System

33. Circulatory and Respiratory Systems

33.1 The Circulatory System

33.2 Blood and the Lymphatic System

33.3 The Respiratory System

34. Endocrine and Reproductive Systems

34.1 The Endocrine System

34.2 Glands of the Endocrine System

34.3 The Reproductive System

34.4 Fertilization and Development

35. Immune System and Disease

35.1 Infectious Disease

35.2 Defenses Against Infection

35.3 Fighting Infectious Disease

35.4 Immune System Disorders