

Course materials required. See 'Course Materials' below.

Biology Literacy Advantage focuses on the mastery of basic biological concepts and models while building scientific inquiry skills and exploring the connections between living things and their environment.

The course begins with an introduction to the nature of science and biology, including the major themes of structure and function, matter and energy flow, systems, and the interconnectedness of life. Students then apply those themes to the structure and function of the cell, cellular metabolism, and biogeochemical cycles. Building on this foundation, students explore the connections and interactions between living things by studying genetics, ecosystems and natural selection, and evolution. The course ends with an applied look at human biology.

Scientific inquiry skills are embedded in the direct instruction, wherein students learn to ask scientific questions, form and test hypotheses, and use logic and evidence to draw conclusions about the concepts. Lab activities reinforce critical thinking, writing, and communication skills and help students develop a deeper understanding of the nature of science.

Extensive scaffolding aids below-proficient readers in understanding academic science content and in making the leap to higher-order thinking. The controlled release of scientific vocabulary helps struggling readers find success with complex material. This strategic support, including explicit comprehension and vocabulary strategies, helps students master material while simultaneously developing their literacy skills. Note-taking guides support engagement with direct instruction and use concept maps, illustrations, and graphic organizers to aid students in developing crucial study skills.

The content is based on the National Science Education Standards (NSES) and is aligned with state standards.

Length: Two semesters

UNIT 1: INTRODUCTION TO LEARNING ONLINE

- Lesson 1: Introduction to Learning Online
- Lesson 2: Getting Started in Biology
- Lesson 3: Introduction to Learning Online Wrap-Up
- Lesson 4: Diagnostic

UNIT 2: INTRODUCTION TO BIOLOGY

- Lesson 1: Biology as Science
- Lesson 2: Connections in Biology
- Lesson 3: Doing Science: Introduction to Biology
- Lesson 4: Unit Review
- Lesson 5: Diagnostic

UNIT 3: CHEMISTRY OF LIFE

- Lesson 1: Chemistry of Life
- Lesson 2: Carbohydrates, Lipids, and Nucleic Acids
- Lesson 3: Proteins, Enzymes, and Water
- Lesson 4: Doing Science: Chemistry of Life
- Lesson 5: Unit Review
- Lesson 6: Diagnostic

UNIT 4: CELLS

- Lesson 1: Cell Structure
- Lesson 2: Cell Membrane

- Lesson 3: Cell Differentiation
- Lesson 4: Doing Science: Cells
- Lesson 5: Unit Review
- Lesson 6: Diagnostic

UNIT 5: ENERGY TRANSFER

- Lesson 1: Photosynthesis
- Lesson 2: Cellular Respiration
- Lesson 3: Matter and Energy
- Lesson 4: Doing Science: Energy Transfer
- Lesson 5: Unit Review
- Lesson 6: Diagnostic

UNIT 6: EARTH'S RESOURCES

- Lesson 1: Biogeochemical Cycles
- Lesson 2: A Changing Earth
- Lesson 3: Solutions for the Future
- Lesson 4: Doing Science: Earth's Resources
- Lesson 5: Unit Review
- Lesson 6: Diagnostic

UNIT 7: BIOLOGY SEMESTER 1 REVIEW AND EXAM

- Lesson 1: Biology Semester 1

UNIT 8: DNA AND HEREDITY

- Lesson 1: The Code of Life
- Lesson 2: Passing On Traits
- Lesson 3: Mendelian Genetics
- Lesson 4: Doing Science: DNA and Heredity
- Lesson 5: Unit Review
- Lesson 6: Diagnostic

UNIT 9: DNA TO PROTEIN

- Lesson 1: Structure of Genetic Material
- Lesson 2: From DNA to Protein
- Lesson 3: Changes to DNA
- Lesson 4: Doing Science: DNA to Protein
- Lesson 5: DNA to Protein Wrap-Up
- Lesson 6: Diagnostic

UNIT 10: ECOSYSTEMS AND NATURAL SELECTION

- Lesson 1: Ecosystems
- Lesson 2: Populations
- Lesson 3: Adaptation and Natural Selection
- Lesson 4: Doing Science: Ecosystems and Natural Selection
- Lesson 5: Unit Review
- Lesson 6: Diagnostic

UNIT 11: EVOLUTION AND CLASSIFICATION

- Lesson 1: Evolution
- Lesson 2: Classification
- Lesson 3: Diversity of Life
- Lesson 4: Doing Science: Evolution and Classification

- Lesson 5: Unit Review
- Lesson 6: Diagnostic

UNIT 12: HUMAN BIOLOGY

- Lesson 1: Structure of the Body
- Lesson 2: Fuel, Defense, and Signaling
- Lesson 3: Reproduction and Development
- Lesson 4: Doing Science: Human Biology
- Lesson 5: Unit Review
- Lesson 6: Diagnostic

UNIT 13: BIOLOGY SEMESTER 2 REVIEW AND EXAM

- Lesson 1: Biology Semester 2