Biology is an in-depth course that furthers mastery of scientific skills, fosters a deep understanding of key concepts, and promotes the application of the scientific method to biological topics.

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.

Lab activities reinforce critical thinking, writing, and communication skills and help students develop a deeper understanding of the nature of science.

Biology students are frequently asked to respond to scientific problems and issues via written assignments. Exploration activities challenge Honors students to deconstruct scientific claims, analyze scientific articles, and suggest follow-up experiments or topics for further research. Finally, Project and Checkup activities allow Honors students to use scientific process skills to delve deeper into topics.

This course is built to state standards and the National Science Education Standards (NSES).

Length: Two semesters

UNIT 1: INTRODUCTION TO BIOLOGY

LESSON 1: BIOLOGY AS SCIENCE

Study: The Nature of Science
Learn about what a scientist does, and what is and is not science.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: The Nature of Science
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: The Scientific Process
Learn about the scientific process and the scientific method.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: The Scientific Process
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Sleep Deprivation Experiment
Use the scientific method to explore the topic of sleep deprivation
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 2: CONNECTIONS IN BIOLOGY

Study: Themes in Biology
Learn about the themes that connect all of biology.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Themes in Biology
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Science, Society, and Technology
Learn about the connection between science and society.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Science, Society, and Technology
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Diversity in Science
Investigate more about the contributions of different scientists
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 3: DOING SCIENCE: INTRODUCTION TO BIOLOGY

Project: Semester 1 Honors Biology Project, Part 1
Students choose their project.
Duration: 0 hrs 30 mins Scoring: 20 points

Study: The Scientific Process
Learn about the process of scientific inquiry.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: The Scientific Process
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Lab: Scientific Method
Use the scientific method to perform a lab experiment
Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Scientific Method
Discuss the results of your lab.
Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 4: INTRODUCTION TO BIOLOGY WRAP-UP

Practice: Introduction to Biology
Practice problem-solving skills related to concepts in the lesson.
Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test
Take a computer-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test
Take a teacher-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

UNIT 2: THE CHEMISTRY OF BIOLOGY

LESSON 1: CHEMISTRY OF LIFE

Study: Common Elements in Living Things
Learn about the structure of an atom, and the six main elements living things are made from.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Common Elements in Living Things
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Chemical Reactions and Bonding
Learn about covalent and ionic bonds. Learn the principles of the chemical reactions that occur in living things.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Chemical Reactions and Bonding
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Air Pollution
Investigate about the impacts of air pollution
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 2: CARBOHYDRATES, LIPIDS, AND NUCLEIC ACIDS

Study: Carbohydrates
Learn about the structure and function of carbohydrate molecules.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Carbohydrates
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Nucleic Acids and Lipids
Learn about the structure and function of DNA, RNA, and lipids.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Nucleic Acids and Lipids
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Modeling Matter
Use the scientific method to perform an experiment outside of the traditional laboratory environment.
Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 3: PROTEINS, ENZYMES, AND WATER

Study: Proteins and Enzymes
Learn about the structure and function of protein molecules and enzymes
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Proteins and Enzymes
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Water
Learn about the importance of water in living organisms, including the processes of hydrolysis, dehydration, and osmosis.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Water
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Trans Fats
Explore the topic of trans-fats in foods and their impact on the human body
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: THE CHEMISTRY OF BIOLOGY

Project: Semester 1 Honors Biology Project, Part 2

Students submit research for their project.
Duration: 0 hrs 30 mins Scoring: 20 points

Study: Enzyme Action: How Clean Is Your Laundry?
Learn about the different types of science and how scientific experiments are designed.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Enzyme Action: How Clean Is Your Laundry?
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Lab: Enzyme Action: How Clean Is Your Laundry?
Perform a lab to observe the effects of enzymes
Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Enzyme Action: How Clean Is Your Laundry?
Discuss the results of your lab.
Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: THE CHEMISTRY OF BIOLOGY WRAP-UP

Practice: The Chemistry of Biology
Practice problem-solving skills related to concepts in the lesson.
Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test
Take a computer-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test
Take a teacher-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

UNIT 3: CELLS

LESSON 1: CELL STRUCTURE

Study: General Structure of the Cell
Learn about the basic structure and function of cells.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: General Structure of the Cell
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Detailed Structure of the Cell
Learn about the functions of cellular organelles.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Detailed Structure of the Cell
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Observing Cells
Use the scientific method to perform an experiment outside of the traditional laboratory environment.
Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 2: CELL MEMBRANE

Study: Cell Membrane Structure
Learn about the structure of the cell membrane.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Cell Membrane Structure
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Cellular Transport
Learn about the different ways that substances move in and out of cells
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Cellular Transport
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Biofilms
Investigate how bacteria cells use biofilms
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 3: CELL DIFFERENTIATION

Study: Specialized Cells and Tissues
Learn about how specialized cells in plants and animals perform many different functions
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Specialized Cells and Tissues
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Cell Differentiation and Stem Cells
Learn about how cells in the body differentiate from stem cells and the controversies surrounding the use of stem cells in research.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Cell Differentiation and Stem Cells
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: More about Stem Cells
Investigate more about the topic of stem cells
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: CELLS

Project: Semester 1 Honors Biology Project, Part 3
Students submit a plan for their project.
Duration: 1 hr 40 mins Scoring: 20 points

Study: Why Are Cells So Small?
Learn about the size of cells and how they can be observed
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Why Are Cells So Small?
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Lab: Why Are Cells So Small?
Perform a lab to observe how cell shape affects diffusion
Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Why Are Cells So Small?
Discuss the results of your lab.
Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: CELLS WRAP-UP

Practice: Cells
Practice problem-solving skills related to concepts in the lesson.
Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test
Take a computer-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test
Take a teacher-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

UNIT 4: ENERGY TRANSFER

LESSON 1: PHOTOSYNTHESIS

Study: Photosynthesis Introduction
Learn about the main principles of photosynthesis.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Photosynthesis Introduction
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Process of Photosynthesis
Learn about the chemical reactions of photosynthesis.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Process of Photosynthesis
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Energy Conversions
Explore the topic of chemosynthesis
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 2: CELLULAR RESPIRATION

Study: Respiration Introduction
Learn about how living things use respiration to get cellular energy
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Respiration Introduction
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Process of Respiration
Learn about the chemical reactions of respiration and compare the reactions of respiration and photosynthesis.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Process of Respiration
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Observe Cellular Respiration and Photosynthesis
Use the scientific method to perform an experiment outside of the traditional laboratory environment.
Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 3: MATTER AND ENERGY

Study: Relationships in an Ecosystem
Learn about the types of relationships between organisms in an ecosystem.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Relationships in an Ecosystem
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Energy in the Food Web
Learn about how energy flows through ecosystems in complex food webs
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Energy in the Food Web
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Water Plants
Explore challenges water plants face and learn how their structures are adapted for those challenges
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: ENERGY TRANSFER

Project: Semester 1 Honors Biology Project, Part 4
Students submit their completed project.
Duration: 0 hrs 45 mins Scoring: 140 points

Study: Anaerobic Respiration of Yeast
Learn about writing predictions, reading graphs and analyzing variables in lab experiments.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Anaerobic Respiration of Yeast
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Lab: Anaerobic Respiration of Yeast
Perform a lab to observe how sugar availability affects fermentation
Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Anaerobic Respiration of Yeast
Discuss the results of your lab.
Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: ENERGY TRANSFER WRAP-UP

Practice: Energy Transfer
Practice problem-solving skills related to concepts in the lesson.
Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test
Take a computer-scored test to assess what you have learned in this unit.

Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 1 hr Scoring: 50 points

UNIT 5: EARTH'S RESOURCES

LESSON 1: BIOGEOCHEMICAL CYCLES

Study: Water and Oxygen Cycles

Learn about the cycles of water and oxygen in the atmosphere and the importance of these to the preservation of life.

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Water and Oxygen Cycles

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Carbon and Nitrogen Cycles

Learn about how carbon and nitrogen cycle through living things and the earth

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Carbon and Nitrogen Cycles

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Glaciers and Carbon Dioxide

Investigate more about glaciers and the water cycle

Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 2: A CHANGING EARTH

Study: Climate Change

Learn about the growing problem of climate change.

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Climate Change

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Human Population

Learn about how the growing human population is impacting the earth

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Human Population

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Research Your Ecosystem

Use the scientific method to perform an experiment outside of the traditional laboratory environment.

Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 3: SOLUTIONS FOR THE FUTURE

Study: Sustaining Resources

Learn about how science can impact the use of resources and waste management

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Sustaining Resources

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Alternative Energy

Learn about the different types of alternative energy

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Alternative Energy

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Vertical Farming

Investigate the process of vertical farming and evaluate its impacts

Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: EARTH'S RESOURCES

Study: Acid Rain and Brine Shrimp

Learn about pH acids and bases

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Acid Rain and Brine Shrimp

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Lab: Acid Rain and Brine Shrimp

Perform a lab to observe the impacts of acid rain on the environment

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Acid Rain and Brine Shrimp

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: EARTH'S RESOURCES WRAP-UP

Practice: Earth's Resources

Practice problem-solving skills related to concepts in the lesson.

Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

Take a computer-scored test to assess what you have learned in this unit.

Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 1 hr Scoring: 50 points

UNIT 6: SEMESTER 1 REVIEW AND EXAM

LESSON 1: SEMESTER 1 REVIEW AND EXAM

Review: Semester 1 Review

Prepare for the semester exam by reviewing key concepts covered in this semester.

Duration: 1 hr Scoring: 0 points

Exam: Semester 1 Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in this semester.

Duration: 1 hr Scoring: 100 points

Final Exam: Biology Semester 1

Take a teacher-scored exam to demonstrate your mastery of concepts and skills covered in this semester.

Duration: 1 hr Scoring: 100 points

UNIT 7: DNA AND HEREDITY

LESSON 1: THE CODE OF LIFE

Study: Organization of DNA
Learn about the organization of DNA into alleles, genes, and chromosomes.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Organization of DNA
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Mitosis
Learn about the process of mitosis.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Mitosis
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Model Mitosis
Use the scientific method to perform an experiment outside of the traditional laboratory environment.
Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 2: PASSING ON TRAITS

Study: Meiosis
Learn about the process of meiosis.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Meiosis
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Principles of Heredity
Learn about the principles of heredity and the importance of genetics to organisms.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Principles of Heredity
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Personalized Medicine
Investigate how the human genome project is affecting health care
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 3: MENDELIAN GENETICS

Study: Basics of Mendelian Genetics
Learn about the history and principles of Mendelian genetics.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Basics of Mendelian Genetics
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Predicting Genetic Outcomes
Learn how to predict genetic outcomes. Learn how to use Punnett squares.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Predicting Genetic Outcomes
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Sex-linked Diseases
Investigate how sex-linked traits are passed through families
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: DNA AND HEREDITY

Project: Semester 2 Honors Biology Project, Part 1
Students choose their project.
Duration: 0 hrs 30 mins Scoring: 20 points

Study: DNA Fingerprinting
Learn about DNA fingerprinting.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: DNA Fingerprinting
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Lab: DNA Fingerprinting
Perform a lab about DNA fingerprinting.
Duration: 1 hr 30 mins Scoring: 50 points

Discuss: DNA Fingerprinting
Discuss the results of your lab.
Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: DNA AND HEREDITY WRAP-UP

Practice: DNA and Heredity
Practice problem-solving skills related to concepts in the lesson.
Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test
Take a computer-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test
Take a teacher-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

UNIT 8: DNA TO PROTEIN

LESSON 1: STRUCTURE OF GENETIC MATERIAL

Study: DNA Replication
Learn about the structure of DNA. Learn about the process of DNA replication.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: DNA Replication
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Viruses and Bacteria
Learn about the structure of viruses and bacteria, how they obtain food and reproduce, and their significance to ecosystems.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Viruses and Bacteria
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Model DNA Replication
Use the scientific method to perform an experiment outside of the traditional laboratory environment.
Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 2: FROM DNA TO PROTEIN

Study: Transcription
Learn about how DNA is read to make mRNA in the process of transcription
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Transcription
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Translation
Learn about mRNA is used to build molecules of protein
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Translation
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Techniques for Studying Genomes
Investigate more about the contributions of different scientists
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 3: CHANGES TO DNA

Study: Genetic Mutations
Learn how genetic mutations occur, the effect of mutations, and different types of mutations.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Genetic Mutations
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: DNA Technology
Learn about technologies related to DNA, their significance, and the ethical and societal issues related to them.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: DNA Technology
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Cloning Dolly
Investigate more about the process used to clone an adult animal
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: DNA TO PROTEIN

Project: Semester 2 Honors Biology Project, Part 2
Students submit research for their project.
Duration: 0 hrs 30 mins Scoring: 20 points

Study: Mutations
Learn about methods to study DNA.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Mutations
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Lab: Mutations
Perform a lab to explore mutations.
Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Mutations
Discuss the results of your lab.
Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: DNA TO PROTEIN WRAP-UP

Practice: DNA to Protein
Practice problem-solving skills related to concepts in the lesson.
Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test
Take a computer-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test
Take a teacher-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

UNIT 9: ECOSYSTEMS AND NATURAL SELECTION

LESSON 1: ECOSYSTEMS

Study: Ecosystems and Biomes
Learn about what makes up an ecosystem and about different types of ecosystems.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Ecosystems and Biomes
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Stability and Change in an Ecosystem
Learn how an ecosystem responds to change.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Stability and Change in an Ecosystem
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Fishing our Oceans
Investigate about the factors affecting aquatic ecosystems
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 2: POPULATIONS

Study: Population Structure
Learn about factors that affect populations.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Population Structure
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Population Dynamics
Learn about how genes are passed through populations.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Population Dynamics
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Observe a Living System
Use the scientific method to perform an experiment outside of the traditional laboratory environment.
Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 3: ADAPTATION AND NATURAL SELECTION

Study: Variation and Adaptation
Learn how species vary geographically and over time and how they adapt to their habitats.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Variation and Adaptation
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Natural Selection
Learn how and why natural selection occurs, what affects natural selection, and what is and is not natural selection.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Natural Selection
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: More about Adaptation
Learn more about the adaptations organisms have for survival
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: ECOSYSTEMS AND NATURAL SELECTION

Project: Semester 2 Honors Biology Project, Part 3
Students submit a plan for their project.
Duration: 1 hr 40 mins Scoring: 20 points

Study: Natural Selection
Learn about using simulations models and other experimental techniques
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Natural Selection
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Lab: Natural Selection
Perform a lab to observe how the frequency of traits in a population changes over time
Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Natural Selection
Discuss the results of your lab.
Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: ECOSYSTEMS AND NATURAL SELECTION WRAP-UP

Practice: Ecosystems and Natural Selection
Practice problem-solving skills related to concepts in the lesson.

Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test
Take a computer-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test
Take a teacher-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

UNIT 10: EVOLUTION AND CLASSIFICATION

LESSON 1: EVOLUTION

Study: Mechanism for Evolution
Learn about the process of evolution and the history of the theory of evolution.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Mechanism for Evolution
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Evidence for Evolution
Learn about the fossil record and the implications for evolutionary thought.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Evidence for Evolution
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Human Evolution
Investigate more about the evolution of humans
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 2: CLASSIFICATION

Study: Speciation
Learn what defines a living thing.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Speciation
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Methods for Classification
Learn about the taxonomic systems for classifying organisms.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Methods for Classification
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Use an Identification Key
Use the scientific method to perform an experiment outside of the traditional laboratory environment.
Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 3: DIVERSITY OF LIFE

Study: Life on Earth

Learn about microorganisms and fungi.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Life on Earth
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Plants and Animals
Learn about plant and animal structure and function.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Plants and Animals
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Mass Extinctions
Investigate the cycle of mass extinctions on earth
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: EVOLUTION AND CLASSIFICATION

Project: Semester 2 Honors Biology Project, Part 4
Students submit their completed project.
Duration: 0 hrs 45 mins Scoring: 140 points

Study: Bone Comparison
Learn about the scientific process of classifying living things.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Bone Comparison
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Lab: Bone Comparison
Perform a lab to observe some characteristics of two classes of vertebrates.
Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Bone Comparison
Discuss the results of your lab.
Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: EVOLUTION AND CLASSIFICATION WRAP-UP

Practice: Evolution and Classification
Practice problem-solving skills related to concepts in the lesson.
Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test
Take a computer-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test
Take a teacher-scored test to assess what you have learned in this unit.
Duration: 1 hr Scoring: 50 points

UNIT 11: HUMAN BIOLOGY

LESSON 1: STRUCTURE OF THE BODY

Study: The Nervous System
Learn about tissues and the muscular and skeletal systems.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: The Nervous System
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Respiration and Circulation
Learn about respiration and circulation.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Respiration and Circulation
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Bones and Muscles
Learn about bones and muscles.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Bones and Muscles
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Bone Mass
Explore the factors that affect bone mass
Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 2: FUEL, DEFENSE, AND SIGNALING

Study: Digestive and Excretory Systems
Learn about the digestive and excretory systems.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Digestive and Excretory Systems
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: The Immune System
Learn about the immune system.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: The Immune System
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: The Endocrine System
Learn about the endocrine system.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: The Endocrine System
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Checkup: Investigate Your Diet
Use the scientific method to perform an experiment outside of the traditional laboratory environment.
Duration: 0 hrs 30 mins Scoring: 0 points

LESSON 3: REPRODUCTION AND DEVELOPMENT

Study: Males and Females

Learn about males and females.

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Males and Females

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Fertilization and Development

Learn about fertilization and development.

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Fertilization and Development

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Explore: Pollution and Brain Development

Investigate the relationship between pollution and brain defects

Duration: 0 hrs 30 mins Scoring: 25 points

LESSON 4: DOING SCIENCE: HUMAN BIOLOGY

Study: The Effects of Antibiotics

Learn about how antibiotics work.

Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: The Effects of Antibiotics

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Lab: The Effects of Antibiotics

Perform a lab to explore the effects of antibiotics.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: The Effects of Antibiotics

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: HUMAN BIOLOGY WRAP-UP

Practice: Human Biology

Practice problem-solving skills related to concepts in the lesson.

Duration: 1 hr 15 mins Scoring: 40 points

Review: Unit Review

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

Take a computer-scored test to assess what you have learned in this unit.

Duration: 1 hr Scoring: 50 points

Test (TS): Teacher-Scored Unit Test

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 1 hr Scoring: 50 points

UNIT 12: SEMESTER 2 REVIEW AND EXAM

LESSON 1: SEMESTER 2 REVIEW AND EXAM

Review: Semester 2 Review

Prepare for the semester exam by reviewing key concepts covered in this semester.

Duration: 1 hr Scoring: 0 points

Exam: Semester 2 Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in this semester.

Duration: 1 hr Scoring: 100 points

Final Exam: Biology Semester 2

Take a teacher-scored exam to demonstrate your mastery of concepts and skills covered in this semester.

Duration: 1 hr Scoring: 100 points