

Course materials required. See 'Course Materials' below.

Chemistry Literacy Advantage provides a curriculum that emphasizes students' understanding of fundamental chemistry concepts while helping them acquire tools to be conversant in a society highly influenced by science and technology.

The course provides students with opportunities to learn and practice critical scientific skills within the context of relevant scientific questions. Topics include the nature of science, the importance of chemistry to society, atomic structure, bonding in matter, chemical reactions, redox reactions, electrochemistry, phases of matter, equilibrium and kinetics, acids and bases, thermodynamics, quantum mechanics, nuclear reactions, organic chemistry, and alternative energy.

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 helps below-proficient readers understand academic science content and make 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 the use of concept maps, illustrations, and graphic organizers aids students in developing crucial study skills. Checkup activities provide practice opportunities prior to assessments.

The content is based on the American Association for the Advancement of Science (AAAS) Project 2061 benchmarks and the National Science Education Standards and is aligned with state standards.

Length: Two semesters

UNIT 1: INTRODUCTION TO LEARNING ONLINE

LESSON 1: INTRODUCTION TO LEARNING ONLINE

Study: Active Reading

Learn skills and strategies that will help you be an active reader in this and other courses.

Duration: 0 hrs 45 mins Scoring: 0 points

Quiz: Understanding the Study

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 10 mins Scoring: 10 points

Study: Building a Vocabulary

Learn how to use words to express a variety of ideas and study a few helpful vocabulary words and tips.

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Understanding the Study

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 10 mins Scoring: 10 points

LESSON 2: GETTING STARTED IN CHEMISTRY

Study: Welcome to Chemistry

Learn what chemistry is and go over some of the topics you will be learning in this course.

Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Understanding the Study

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 10 mins Scoring: 10 points

LESSON 3: INTRODUCTION TO LEARNING ONLINE WRAP-UP

Review: Introduction to Learning Online

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Introduction to Learning Online

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

Duration: 0 hrs 20 mins Scoring: 20 points

Test (TS): Introduction to Learning Online

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: DIAGNOSTIC

Diagnostic: Introduction to Learning Online

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 10 points

UNIT 2: CHEMISTRY AND SOCIETY

LESSON 1: THE NATURE OF SCIENCE

Study: Science and Scientists

Learn about science and scientists; learn about why scientific processes and discoveries require time and careful work.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Science and Scientists

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Science and Scientists

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: The Scientific Process

Learn about the scientific method and associated processes that lead to reliable data as well as scientific controversy.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: The Scientific Process

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: The Scientific Process

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: THE IMPORTANCE OF CHEMISTRY

Study: Chemistry over Time

Learn what chemistry is and the history of chemistry.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Chemistry over Time

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Chemistry over Time

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Chemistry in the World

Learn about how chemistry is used in various careers and in medicine and technology, and about how the use of chemicals has impacted the environment both for good and bad.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Chemistry in the World

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Chemistry in the World

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: DOING SCIENCE: CHEMISTRY AND SOCIETY

Lab: Observing and Inferring

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Observing and Inferring

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 4: CHEMISTRY AND SOCIETY WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 5: DIAGNOSTIC

Diagnostic: Chemistry and Society

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 3: ATOMIC STRUCTURE

LESSON 1: MATTER, FORCES, AND ENERGY

Study: Matter and Forces

Learn about matter, the law of conservation of matter, and the forces that act on matter.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Matter and Forces

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Matter and Forces

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Energy

Learn about the different types of energy and how energy changes form.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Energy

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Energy

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: ATOMS

Study: Atomic Structure

Learn about how all matter is made of atoms; learn about the history of atomic theory; understand the Bohr atom and the differences between neutrons, protons, and electrons.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Atomic Structure

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Atomic Structure

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: The Periodic Table

Learn how to navigate the periodic table and use it to find numbers of protons, electrons, and neutrons.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: The Periodic Table

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: The Periodic Table

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: ELEMENTS

Study: Organization and History of the Periodic Table

Learn about the history of periodic table; the information in the periodic table; and how the table shows the unity, diversity, and organization of life.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Organization and History of the Periodic Table

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Organization and History of the Periodic Table

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Elements on the Periodic Table

Learn about the elements of the periodic table.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Elements on the Periodic Table

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Elements on the Periodic Table

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: ATOMIC STRUCTURE

Lab: Mass, Volume, and Density

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Mass, Volume, and Density

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: ATOMIC STRUCTURE WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Atomic Structure

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 4: BONDING IN MATTER

LESSON 1: ELECTRONS AND PERIODIC TRENDS

Study: Electrons and Orbitals

Learn about energy levels of electrons, electron configurations, and the filling of orbitals.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Electrons and Orbitals

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Electrons and Orbitals

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Predictions and the Periodic Table

Learn about the patterns on the periodic table and the information that can be gained by using the table.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Predictions and the Periodic Table

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Predictions and the Periodic Table

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: BONDING AND FORCES

Study: Intramolecular Forces

Learn about forces within molecules, draw Lewis structures, and make predictions about the type of bond formed between two atoms.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Intramolecular Forces

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Intramolecular Forces

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Intermolecular Forces

Learn about the forces between molecules and how they determine properties of substances.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Intermolecular Forces

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Intermolecular Forces

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: COMPOUNDS AND MOLECULES

Study: Molecular Shape

Learn how to predict molecular shape.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Molecular Shape

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Molecular Shape

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Naming Substances

Learn about naming and writing formulas for compounds.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Naming Substances

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Naming Substances

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: BONDING IN MATTER

Lab: Periodic Properties

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Periodic Properties

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: BONDING IN MATTER WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Bonding in Matter

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 5: CHEMICAL REACTIONS

LESSON 1: THE MOLE

Study: The Significance of the Mole

Learn about moles and their main uses and how to perform unit conversions.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: The Significance of the Mole

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: The Significance of the Mole

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Using the Mole

Learn how to use moles to determine mass percent composition, the empirical formula, and the molecular formula.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Using the Mole

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Using the Mole

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: CHANGES IN MATTER

Study: Chemical Reactions

Learn how to define chemical reactions.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Chemical Reactions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Chemical Reactions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Types of Reactions

Learn about the main types of chemical reactions.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Types of Reactions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Types of Reactions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: BALANCING CHEMICAL REACTIONS

Study: Balancing Inorganic Reactions

Learn about balancing inorganic chemical reactions.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Balancing Inorganic Reactions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Balancing Inorganic Reactions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Balancing Organic Reactions

Learn about the significance of organic reactions, such as combustion, and how to balance these reactions.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Balancing Organic Reactions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Balancing Organic Reactions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: CHEMICAL REACTIONS

Lab: Precipitation Reactions

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Precipitation Reactions

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: CHEMICAL REACTIONS WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Chemical Reactions

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 6: CHEMISTRY AT WORK

LESSON 1: REDOX REACTIONS

Study: Understanding Redox Reactions

Learn about the significance of redox reactions.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Understanding Redox Reactions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Understanding Redox Reactions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Balancing Redox Reactions

Learn about half-reactions and how to balance redox reactions.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Balancing Redox Reactions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Balancing Redox Reactions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: ELECTROCHEMISTRY

Study: Galvanic Cells

Learn about galvanic cells, batteries, and cell voltages.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Galvanic Cells

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Galvanic Cells

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Electrolytic Cells

Learn how about spontaneous and nonspontaneous redox reactions, including electrolytic cells.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Electrolytic Cells

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Electrolytic Cells

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: TYING IT TOGETHER

Study: Calculating with the Periodic Table

Learn how to calculate average atomic mass and theoretical yield of products, and how to determine the limiting reagent and the percent yield.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Calculating with the Periodic Table

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Calculating with the Periodic Table

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Scientific Themes

Learn about the themes that link chemistry to the other sciences.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Scientific Themes

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Scientific Themes

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: CHEMISTRY AT WORK

Lab: Oxidation-Reduction Reactions

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Oxidation-Reduction Reactions

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: CHEMISTRY AT WORK WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Chemistry at Work

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 7: CHEMISTRY SEMESTER 1 REVIEW AND EXAM

LESSON 1: CHEMISTRY SEMESTER 1

Review: Chemistry Semester 1

Get ready for the exam by reviewing important ideas and skills covered in this semester.

Duration: 1 hr Scoring: 0 points

Exam: Chemistry Semester 1

Take a computer-scored exam to check what you have learned in this semester.

Duration: 1 hr Scoring: 100 points

Final Exam: Chemistry Semester 1

Take a teacher-scored exam to check what you have learned in this semester.

Duration: 1 hr Scoring: 100 points

UNIT 8: ENERGY IN MATTER

LESSON 1: PHASES OF MATTER

Study: Kinetic Theory

Learn how the kinetic theory explains phases.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Kinetic Theory

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Kinetic Theory

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Solids

Learn about the properties of solids, particularly metallic solids.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Solids

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Solids

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: LIQUIDS AND SOLUTIONS

Study: Solutions

Learn about the properties of solutions, how mixtures are different from solutions, and what factors influence the rate of solution formation.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Solutions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Solutions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Melting and Boiling

Learn about how intermolecular forces affect melting points and how the addition of a solute affects melting and freezing points.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Melting and Boiling

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Melting and Boiling

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: GASES

Study: Changes in Gases

Learn about changes in gases and how to use graphs to explain what happens as gases change.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Changes in Gases

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Changes in Gases

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: The Ideal Gas Law

Do calculations with absolute temperature, the ideal gas law, and partial pressures.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: The Ideal Gas Law

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: The Ideal Gas Law

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: ENERGY IN MATTER

Lab: Freezing Point Depression

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Freezing Point Depression

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: ENERGY IN MATTER WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Energy in Matter

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 9: EQUILIBRIUM AND KINETICS

LESSON 1: EQUILIBRIUM

Study: The Equilibrium Constant

Learn about the concept of equilibrium and about what happens when equilibrium is disturbed.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: The Equilibrium Constant

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: The Equilibrium Constant

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Acid and Base Equilibrium

Learn about acids and bases and the equilibria of acids and bases.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Acid and Base Equilibrium

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Acid and Base Equilibrium

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: ACIDS AND BASES

Study: The pH Scale

Learn about common acids and bases, pH, and pOH.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: The pH Scale

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: The pH Scale

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Acid-Base Reactions

Learn principles of acid-base reactions, predict products of acid-base reactions, and learn about buffers.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Acid-Base Reactions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Acid-Base Reactions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: KINETICS

Study: Reaction Rate

Learn about reaction rate.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Reaction Rate

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Reaction Rate

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Calculating the Reaction Rate

Learn about how to calculate the reaction rate.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Calculating the Reaction Rate

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Calculating the Reaction Rate

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: EQUILIBRIUM AND KINETICS

Lab: Disturbing Equilibrium

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Disturbing Equilibrium

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: EQUILIBRIUM AND KINETICS WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Equilibrium and Kinetics

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 10: TRANSFERRING ENERGY

LESSON 1: TRANSFERRING HEAT

Study: Thermal Energy

Learn about thermal energy and heat flow.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Thermal Energy

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Thermal Energy

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Calculating Heat

Learn about specific heat and heat calculations.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Calculating Heat

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Calculating Heat

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: ENTHALPY

Study: Enthalpy and Reactions

Learn about heat transfer in chemical reactions, about energy storage in chemical bonds, and about the enthalpy of reaction and the enthalpy of formation.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Enthalpy and Reactions

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Enthalpy and Reactions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Calculating Enthalpy

Learn about how to use Hess's law.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Calculating Enthalpy

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Calculating Enthalpy

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: ENTROPY AND SPONTANEITY

Study: Entropy

Learn about entropy and its relationship to physical and chemical changes.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Entropy

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Entropy

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Spontaneity of a Reaction

Learn about the spontaneity of a reaction.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Spontaneity of a Reaction

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Spontaneity of a Reaction

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: TRANSFERRING ENERGY

Lab: Heats of Reaction

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Heats of Reaction

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: TRANSFERRING ENERGY WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Transferring Energy

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 11: QUANTUM AND NUCLEAR CHEMISTRY

LESSON 1: QUANTUM MECHANICS

Study: Waves

Learn about frequency, wavelength, velocity, and energy of light waves, and about the electromagnetic spectrum.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Waves

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Waves

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Quantization

Learn about the quantization of light and electrons.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Quantization

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Quantization

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: ENERGY IN ELECTRONS AND NUCLEI

Study: Spectra

Learn about flame tests, and about absorption and emission spectra.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkpoint: Spectra

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Spectra

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Nuclear Structure

Learn about the structure of the nucleus, and the forces that act within the nucleus.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Nuclear Structure

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Nuclear Structure

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: NUCLEAR REACTIONS

Study: Fission, Fusion, and Radioactive Decay

Learn about fission and fusion reactions, and about radioactive decay.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Fission, Fusion, and Radioactive Decay

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Fission, Fusion, and Radioactive Decay

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Half-life

Learn about half-lives and radioactive dating.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Half-life

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Half-life

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: QUANTUM AND NUCLEAR CHEMISTRY

Lab: Radioactivity and Radiation

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Radioactivity and Radiation

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: QUANTUM AND NUCLEAR CHEMISTRY WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Quantum and Nuclear Chemistry

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 12: ENERGY IN ORGANIC MOLECULES

LESSON 1: FOUNDATIONS OF ORGANIC CHEMISTRY

Study: Carbon Compounds

Learn about why carbon atoms form a wide variety of molecules; learn about the general structure and importance of organic compounds.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Carbon Compounds

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Carbon Compounds

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Hydrocarbons

Learn about the naming of simple hydrocarbons.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Hydrocarbons

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Hydrocarbons

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: INTRODUCTORY BIOCHEMISTRY

Study: Functional Groups

Learn about the structures of the main functional groups on organic molecules.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Functional Groups

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Functional Groups

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Biological Molecules

Learn about the main biological macromolecules.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Biological Molecules

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Biological Molecules

Take a quiz to check your understanding of what you have learned.

LESSON 3: ENERGY IN THE WORLD

Study: Fossil Fuels

Learn about the chemistry of fossil fuels, and about the environmental issues connected to fossil fuels.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Fossil Fuels

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Fossil Fuels

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Alternative Fuels

Learn about biofuels, nuclear energy, and other alternative fuel sources.

Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Alternative Fuels

Work through problems related to the study.

Duration: 0 hrs 10 mins Scoring: 0 points

Quiz: Alternative Fuels

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: DOING SCIENCE: ENERGY IN ORGANIC MOLECULES

Lab: Molecular Models

Use the scientific method and scientific skills to perform a lab experiment.

Duration: 1 hr 30 mins Scoring: 50 points

Discuss: Molecular Models

Discuss the results of your lab.

Duration: 0 hrs 20 mins Scoring: 15 points

LESSON 5: ENERGY IN ORGANIC MOLECULES WRAP-UP

Review: Unit Review

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Computer-Scored Unit Test

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

Duration: 1 hr Scoring: 50 points

LESSON 6: DIAGNOSTIC

Diagnostic: Energy in Organic Molecules

Take a diagnostic test that will create a study plan based on your answers.

Duration: 1 hr Scoring: 25 points

UNIT 13: CHEMISTRY SEMESTER 2 REVIEW AND EXAM

LESSON 1: CHEMISTRY SEMESTER 2

Review: Chemistry Semester 2

Get ready for the exam by reviewing important ideas and skills covered in this semester.

Duration: 1 hr Scoring: 0 points

Exam: Chemistry Semester 2

Take a computer-scored exam to show what you have learned in this semester.

Duration: 1 hr Scoring: 100 points

Final Exam: Chemistry Semester 2

Take a teacher-scored exam to show what you have learned in this semester.

Duration: 1 hr Scoring: 100 points