

Unit 01: Chapters 1 & 2: Introduction To Chemistry and Matter and Change

Content Area: **Science**
Course(s): **Chemistry Honors, Chemistry AH**
Time Period: **Semester 1**
Length: **3 weeks**
Status: **Published**

Standards

HS-PS1

SCI.9-12.HS-PS1-1 Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

Goals/Objectives

How does the nature of matter affect the world around you?

How does the behavior of the parts account for the behavior of the whole?

What does it mean to work safely?

Content

Pure substances v. Mixtures

Physical v. Chemical properties

The connection between the submicroscopic and the macroscopic world

Kinetic-molecular theory of matter

Changes in state

Laboratory safety rules and practices

Skills

Classify matter as a element, compound, heterogeneous mixture, or a homogeneous mixture (solution)

Make quantitative and qualitative observations

Use scientific models

Contrast physical and chemical properties

Differentiate among the states of matter

Describe the motion of particles according to kinetic-molecular theory

Describe what happens to particles when they change state

Identify and perform safe practices in a lab setting

Identify practices that are not safe in a lab setting

Learning Activities/Instructional Strategies

- Activity: Classification of Matter
- Chapter 1 & 2 Packet
- Lab: Separating a Mixture
- One Pot Experiment
- Safety/Lab Equipment Scavenger Hunt

Assessment of Learning

- Chapter Test
- Class discussion
- Homework
- Lab Report

Differentiation

- Alternative Assessments
- Choice of activities
- Choice of books
- Flexible grouping
- Guided reading
- Homework options (describe)
- Independent research and projects
- Leveled rubrics
- Modified materials

- Multiple texts
- Multi-sensory
- Personal agendas
- Pre-teach
- Re-teach
- Stations/Centers

21st Century

21st Century Themes

- Business, Financial, Economic Literacy
- Civic Literacy
- Global Perspectives
- Health Literacy

21st Century Skills

- Communication and Collaboration
- Creativity and Innovation
- Critical Thinking and Problem Solving
- Information Literacy
- Life and Career Skills
- Media Literacy

Interdisciplinary Connections

- Computers
- Engineering
- Math
- Science

Integration of Technology

- Calculators
- Computer Lab/Laptops
- Digital Scales & Meters

- Graphing Calculators
- Internet Resources
- iPads
- SMART Board

TECH.8.1.12.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.
TECH.8.1.12.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.12.C	Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
TECH.8.1.12.D	Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
TECH.8.1.12.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
TECH.8.1.12.F	Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
TECH.8.2.12.A	The Nature of Technology: Creativity and Innovation: Technology systems impact every aspect of the world in which we live.
TECH.8.2.12.B	Technology and Society: Knowledge and understanding of human, cultural and society values are fundamental when designing technology systems and products in the global society.
TECH.8.2.12.C	Design: The design process is a systematic approach to solving problems.
TECH.8.2.12.D	Abilities for a Technological World: The designed world is the product of a design process that provides the means to convert resources into products and systems.
TECH.8.2.12.E	Computational Thinking: Programming: Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.