

Unit 11: Chapter 13: States of Matter

Content Area: **Science**
Course(s): **Chemistry Honors, Chemistry AH**
Time Period: **Generic Time Period**
Length: **1 week**
Status: **Published**

Standards

PS1-3

PS3-2

SCI.9-12.HS-PS3-2	Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative position of particles (objects).
SCI.9-12.HS-PS1-3	Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Goals/Objectives

How does energy impact the behavior of individual particles and, in turn, account for the states of matter?

Content

Kinetic-molecular theory of matter

Interparticle and intraparticle forces

Changes in state

Energy and its relation to temperature

Pressure and its measurement

Melting and freezing points, boiling and condensation points

Skills

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

Relate temperature to the kinetic energy of particles

Measure and convert pressure

Interpreting heating curves

Calculate changes of energy related to the changes in state

Interpret phase diagrams

Learning Activities/Instructional Strategies

- Chapter 13 Packet
- Demo
- Lab: Ice to Steam

Assessment of Learning

- chapter test
- 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.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.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
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.