

# Unit 12: Chapter 14: The Behavior of Gases

Content Area: **Science**  
Course(s): **Chemistry Honors, Chemistry AH**  
Time Period: **Generic Time Period**  
Length: **2 weeks**  
Status: **Published**

## Standards

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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

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What is the nature of gases?

## Content

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Pressure and its measurement

Partial pressures

Vapor Pressure

The relationships between pressure, volume, and temperature, and number of particles in gaseous systems

Ideal gas

## Skills

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Define Boyle's, Charles's, Combined, and the Ideal gas laws

Create and interpret volume, temperature, and pressure graphs

Solve gas law problems

## **Learning Activities/Instructional Strategies**

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- Chapter 14 Packet
- Gas Law Demos
- LAB: Common Gases
- LAB: Diffusion of Two Gases

## **Assessment of Learning**

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- Chapter test
- Discussion
- Homework
- Lab report

## **Differentiation**

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- 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**

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## **21st Century Themes**

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

## **21st Century Skills**

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

## **Interdisciplinary Connections**

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- Computers
- Engineering
- Math
- Science

## **Integration of Technology**

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- 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.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.C

Design: The design process is a systematic approach to solving problems.

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.