# **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**

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**

What is the nature of gases?

#### **Content**

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**

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**

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

### **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
- Multi-sensory
- Multiple texts
- 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
	tachnology concepts, systems and apprations

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.