



Course: Honors Chemistry

We hope that you, your families and loved ones are well! During the COVID-19 pandemic school closure, we will be doing our best to provide you engaging activities that will enrich your understanding of Chemistry. During term 4, you will primarily be exploring matter and its interactions, including types of chemical reactions, stoichiometry, energy transfer and properties of solutions.

Goal for this week

Learning Objectives:

Students will be able to ...

1. understand that gases are fluids with low densities.
2. use the combined gas law to determine how the behavior of a constant amount of gas changes with variations in pressure, volume and temperature.
3. apply the ideal gas law to molar volumes, density, and stoichiometry problems.

[2016 MA STE Standard: HS-PS2-8(MA)]

Literacy Objectives:

1. Reading: to understand a concept and construct meaning
2. Writing: to take notes
3. Writing: to generate a response to what one has read, viewed, or heard
4. Reasoning: to identify a pattern, explain a pattern, and/or make a prediction based on a pattern

(<https://www.bpsma.org/schools/brockton-high-school/about-us/mission-literacy-charts>)

Lesson:

Chemistry Café: Gas Laws

- See the page(s) below for a complete description of what to do and the resources you will need.
- ***Your science teacher will be in contact to clarify expectations (like when and how to submit your work for credit) for your class.***

WHY THIS MATTERS

The Gas Laws are important because they help predict the relationships between pressure, volume, temperature, and moles. Perhaps you remember the “Deflategate” scandal Tom Brady and the New England Patriots were involved in during the 2014-2015 season. In their defense, they invoked the Ideal Gas Law. The NFL’s investigation concluded that [footballs had been tampered with](#) while others think the [science exonerates them](#). Who do you think got it right?

Additional Support

Email:

- Please reach out to your science teacher with specific questions about the lesson.

Office Hours:

- Here is a list of the [science teachers’ office hours](#). Please email your teacher to set up meeting times.

Other questions:

- Science Department Head
Dr. David Mangus
davidmangus@bpsma.org



Chemistry Café

Topic: Gas Laws

Assignments to do:

Click on the link to view the resource ...

1. Read through the [PowerPoint](#) and take notes.
2. Watch the following videos [Gases: Boyle's Law](#), [Gases: Charles' Law](#), [Gases: Gay-Lussac's Law](#), [Gases: Avogadro's Gas Law](#), [Gases: Combined Gas Law](#), [Gases: The Ideal Gas Law](#), [Molar Volume of a Gas Explained](#) and take notes.
3. Complete the [Gas Laws Open Response](#) questions based on what you have learned from the PowerPoint and watched in the videos.
4. Choose 3 assignments from the café below to complete:
You should select 1 appetizer, 1 main course, and 1 dessert

Appetizer

Complete the PLIX simulations for [Boyle's Law](#), [Charles' Law](#), [Gay-Lussac's Law](#), and [Avogadro's Law](#).

Complete the [Gas Laws Practice Problems Worksheet](#).

Complete the [Gas Laws Worksheet](#).

Main Course

Complete the [PHET simulation: Gas Properties](#). Only complete the ideal box.

Complete the [Ideal and Combined Gas Laws Worksheet](#).

Complete the [Ideal and Combined Gas Laws Worksheet 2](#).

Dessert

Complete the [PLIX Simulation: Air Bags](#).

Complete the [Molar Volume Worksheet](#).

Complete [Molar Volume Worksheet 2](#).

Recommended Pacing

Monday: Memorial Day Holiday, **Tuesday:** Complete pre-work assignments, **Wednesday:** Complete an appetizer, **Thursday:** Complete a main course, **Friday:** Complete a dessert