



UNIT 5: CHEMISTRY OF CLIMATE CHANGE

Workbook 5.1: Gas Laws

Lesson 8: What Goes Up

GUIDING QUESTION: DESCRIBE THE RELATIONSHIP BETWEEN PRESSURE, VOLUME, AND TEMPERATURE FOR GASES

- Do Now:

Write the three gas laws (Charles's Law, Boyle's Law, and Gay-Lussac's Law).

- What do you notice about these laws?
 - Similarities? Differences?

NOTES – PAGE 24

- Combined Gas Law
 - Looks at the relationship between all three variables.
 - It is not explicitly indirect or direct in the relationship between P, V, and T
 - More accurately reflects the real world applications of gases.

$$k = \frac{PV}{T}$$

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$$

CLOSURE


- Answer Guiding Question on page 24:
 - Describe the relationship between pressure, volume, and temperature for gases.
- Homework #10 due Friday, 4/27.
- Achieve 3000: “Making the World Clean and Safe” due Friday, 5/4.



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Lesson 9: Climate, A Changing Environment



GUIDING QUESTION: HOW CAN DATA HELP US TO SEE PAST AND PREDICT FUTURE TRENDS IN ENVIRONMENT?

- **Do Now:**

What do you think the difference is between climate and weather? Explain.



NOTES

- Absorption: The process of taking in and not reflecting something, such as a light ray or radiation



NOTES

- Carbon Footprint: the total amount of carbon gases produced directly and indirectly through human activities that use carbon-based fuels



NOTES

- Climate: the prevailing, average weather conditions influenced by temperature, precipitation, humidity, and other meteorological factors in a given region over a long period of time



NOTES

- GHG sink: any process, activity, or reservoir that releases a greenhouse gas (GHG) into the atmosphere.



NOTES

- Global climate change: A long-term significant change in Earth's climatic patterns



NOTES

- Global warming: The gradual increase of average surface temperatures of Earth caused by high levels of atmospheric carbon dioxide.



NOTES

- Greenhouse effect: The combined effect of certain gases in the atmosphere absorbing radiation, affecting the overall temperature of Earth.



NOTES

- Greenhouse Gas (GHG): any gas that absorbs infrared radiation in the atmosphere and contributes to the greenhouse effect.



NOTES

- Infrared Radiation: Electromagnetic radiation not visible to the eye, measured as heat or thermal energy



NOTES

- Paleoclimatology: study of past climate and its causes and effects



NOTES

- Reflection: process of scattering or bouncing back light or radiation.



NOTES

- Thermal Radiation: electromagnetic radiation emitted as heat



NOTES

- Weather: conditions in the atmosphere at a given time and location.

CLOSURE

- Answer Guiding Question on page 2:
 - How can data help us to see past and predict future trends in environment?
- Homework #10 due Friday, 4/27.
- Achieve 3000: “Making the World Clean and Safe” due Friday, 5/4.