CHEMISTRY MATTERS
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NOTE-TAKING GUIDE: Unit 9, SEGMENT D

Name:

Date:

Main Ideas, Key Points, Questions:

After watching the video segment, write down key points, main ideas and big questions.

Objective(s):

- *To use the Kinetic Molecular Theory to explain the characteristics of gas particles.*
- *To use the Ideal Gas Law to predict relationships between pressure, volume, temperature and number of moles of gas.*
- *To develop and draw molecular models to represent the effect of changes in pressure, volume, temperature and number of moles of gas.*

Notes:

During the video segment, use words, phrases or drawings to take notes.

Summary:

After watching the video segment, write at least three sentences explaining what you learned.
You can ask yourself: "If I was going to explain this to someone else, what would I say?"

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QUESTIONS TO CONSIDER:
Unit 9, SEGMENT D

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After watching the video and performing any associated labs and/or experiments, you should be able to answer the following:

1. There is approximately one ton of air pressing down on us on the surface of the Earth. Why do we not feel it?

2. Observe the demonstration of air pressure on an aluminum can very carefully. What crushed the can?

The Kinetic Molecular Theory views gases as tiny molecules spaced far apart, moving independently and rapidly through space, until they collide with something. Answer these questions to understand the five main parts of the Kinetic Molecular Theory.

3. What are gases made of?

4. How do gases move?

5. As collisions increase between gas particles, what happens to gas pressure?

6. Why are gas particles so far apart?

7. What happens to the average kinetic energy of gas particles as temperature increases?

8. The Ideal Gas Law is a simple mathematical equation that predicts the behavior of an Ideal Gas. Write the Ideal Gas Law equation and identify the meaning of the five letters in the equation.

9. What will happen to gas pressure in a container if the number of moles of gas are increased? Why?

10. What will happen when a balloon containing trapped air is placed into a container, and some of air is removed using a vacuum pump, predict what will happen to the volume of air inside the balloon.

11. What happens to the marshmallow when air is allowed to return to the container?

At this point, you should draw molecular models to explain what happens to a balloon or a marshmallow inside the vacuum container. Once you have drawn these models, you may continue to the Unit 9E video.