

Name: \_\_\_\_\_

Period: \_\_\_\_\_ Date: \_\_\_\_\_

### **Animated Gas Lab**

<http://www.grc.nasa.gov/WWW/K-12/airplane/Animation/frglab2.html>

Procedure:

1. On the left, under Freeze One Variable, click **Mass**.
2. Under Freeze Another, click **Temperature**.
3. Under Click to Animate, click **Effect of changing volume on pressure**.

Observe:

When the red piston moves down, what happens to the volume of the yellow gas inside the chamber?

As the red piston moves down, what happens to the pressure? Read the Press. gauge.

When the red piston moves up, what happens to the volume of the yellow gas inside the chamber?

As the red piston moves up, what happens to the pressure?

Describe the graph of pressure vs. volume. (Describe when the graph is complete. Ignore the red moving ball.)

What is the law that describes what you are watching?

Procedure:

4. Now click the other choice under Click to Animate, **Effect of changing pressure on volume**.

Observe:

What do the green objects represent?

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Is this the same relationship you observed in Step 3?

Procedure:

5. Click **Stop**.
6. Click **NEW CASE** under Click to Animate.
7. Under Freeze One Variable, click **Mass**.
8. Under Freeze Another, click **Volume**.
9. Under Click to Animate, click **Effect of changing temperature on pressure**.

Observe:

What happens to the temperature when the flame lights up?

What happens to the pressure when the flame lights up?

Describe the graph of pressure vs. temperature. (Describe when the graph is complete. Ignore the red moving ball.)

What is the law that describes what you are watching?

Procedure:

10. Click **Stop**.
11. Click **NEW CASE**.
12. Click **Mass**.
13. Click **Pressure**.
14. Click **Effect of changing temperature on volume**.

Observe:

What happens to the volume when the flame lights up?

Describe the graph of volume vs. temperature. (Describe when the graph is complete. Ignore the red moving ball.)

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What is the law that describes what you are watching?

What is the difference between this animation and the animation in Step 9? What causes that difference?

Procedure:

15. Click **Stop**.
16. Click **NEW CASE**.
17. Click **Pressure**.
18. Click **Temperature**.
19. Click **Effect of changing mass on volume**.

Observe:

What happens when the piston in the blue tube goes down? How does this affect the mass?

What happens to the volume when the piston in the blue tube goes down?

Describe the graph of volume vs. mass. (Describe when the graph is complete. Ignore the red moving ball.)

What is the law that describes what you are watching?