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Activities

Virtual Gas Tap

Name: _____ Date: _____

This Planet Diary activity will help you visualize gas behavior on a microscopic level. You'll be at the controls of a virtual gas tap to explore some of the gas laws.

Directions

- First, refresh your memory of Boyle's Law and Charles's Law. View the animations, read the text, then answer Workspace questions 1 and 2.
- Check out this gas behavior simulation tool. Notice the "P" (pressure), "V" (volume), and "T" (temperature) sliders. (The "n" sliders adjust the amount of gas; you won't need to change them in this activity). First, you'll explore Boyle's Law. Before you begin, answer questions 3 and 4.
- Click *Reset*. Run several trials to test your prediction about Boyle's law. Keep the factor you gave in question 3 the same. Click the blue circle next to one of the two variable factors you listed in question 4. Move the slider of the other factor to change its value. Notice what happens. Was your prediction correct? If not, figure out why and run the simulation again.
- Next, you'll simulate Charles's Law. First, answer questions 5 and 6.
- Click *Reset*. For Charles's Law, keep the factor you gave in question 5 the same in each trial. Run several trials to see how the other two factors change relative to each other. Was your prediction correct? Rethink it and run it again, if necessary.

Workspace

1. State Boyle's Law.

2. State Charles's Law.

3. Which factor needs to stay constant to test Boyle's Law?

4. Predict how the other two factors will change relative to each other in the Boyle's Law simulation.

5. Which factor needs to stay constant to test Charles's Law?

6. Predict how the other two factors will change relative to each other in the Charles's Law simulation.

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