CHEMISTRY MATTERS
gpb.org/chemistry-matters

Name:

Date:

Main Ideas, Key Points, Questions:

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

Objective(s):

- *To develop a model to explain the differences between materials with low and high specific heat capacity.*
- *To plan and carry out an investigation of the specific heat capacity of four atmospheric gases.*

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?"

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

1. What is thermal conductivity?

2. You have drawn a model of metal and plastic showing how they transfer heat. According to your model, why is metal able to transfer heat energy more quickly than plastic molecules?

3. Substances with a low specific heat capacity are more sensitive to changes in temperature, while those with a higher specific heat capacity are more resistant to changes in temperature. Does water have a high or low specific heat capacity?

4. Does water heat up slowly or quickly?

5. Compare the specific heat capacity of metal and air. Which has the lowest specific heat capacity?

6. The Moon receives the same solar energy from sunlight as the Earth does. Why does the Moon cool down to -150° Celsius once the sun has gone down?

7. Name three gases found in our atmosphere. Do all of these gases have the same specific heat capacity?

8. Why are some of the gases in our atmosphere known as "greenhouse gases"?

You will now use bottles of air, water vapor, methane and carbon dioxide gas to investigate the specific heat capacity of these gases. You will set up this investigation and record data using the lab instructions in the Chemistry Matters Toolkit. Once the data has been recorded, you may continue to the Unit 8D video.