

**Main Ideas, Key Points,  
Questions:**

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

**Objective(s):**

- *To investigate rates of chemical reaction (kinetics) in the laboratory.*
- *To explain the main ideas of collision theory.*
- *To use reaction energy diagrams to illustrate activation energy.*

**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. Kinetics is the study of reaction rates. Write the equation used to calculate reaction rates.**
- 2. If reactant A forms product B, what is the most common unit of measurement for the numerator in the reaction rate equation?**
- 3. What is a common unit of measurement for the denominator in the reaction rate equation?**
- 4. Collision theory states that a chemical reaction requires effective collisions. What are the two characteristics of an effective collision?**
- 5. Sketch a reaction energy diagram. Label the x and y axis, and label the hill on the graph "activation energy."**
- 6. Suggest two ways to speed up a chemical reaction.**
- 7. Write the equation that results from dissolving the antacid tablet in water. Use chemical symbols or write out the names of the reactants and products.**
- 8. As you plan an experiment with antacid tablets and film containers, write your hypothesis and draw a model that explains why the reaction rate changes the way it does. The model should demonstrate the effect that changing conditions have on the reactants and products.**

***At this point in the video, you are expected to plan an investigation of reaction rate using antacid tablets and film containers. You may use the document in the Chemistry Matters Toolkit for assistance. Once the hypothesis, model drawing, and experiment plan have been written, you may proceed to the Unit 9B video.***