

LESSON
106**CLASSWORK**

Speed Things Up

Rate of Reaction

Name _____

Date _____ Period _____

Purpose

To explore the factors that affect how fast a reaction occurs.

Observations**Demo 1—Breath of fire**

1. What is the lycopodium powder reacting with when it combusts?
2. Why didn't the pile of powder burn as well as the powder blown through the plastic tubing?

Demo 2—Glow sticks

3. What effect do you think temperature will have on what you observe? Write your prediction.
4. What does the temperature of the reactants have to do with the motions of the particles?

Demo 3—Rocket engine

5. How much ethanol was used for each reaction? Estimate how long each ethanol reaction took.
6. Describe what you observed when ethanol burned in each version of the demonstration.

7. What effect did shaking the bottle have on the ethanol before it was lit?

Demo 4—Elephant’s toothpaste

8. What role does the soap play in this demo?

9. What role does the catalyst play?

10. How do you think this catalyst works?

Demo 5—Blazing paper

11. Which has a higher activation energy for combustion, ethanol or paper? Explain.

Analysis

1. What happens to reactant particles when they are cooled? How would this affect a reaction?

2. Which demonstrations involved changing how the reactants were mixed?

3. **Making Sense** What factors affected the rates of the reactions in today’s demonstrations?

4. **If You Finish Early** Combustion can occur at low levels of oxygen concentration if the temperature of the environment is increased. Explain why.