

Name:  
Date:  
Period:



# Bunsen Burner Lab

**Purpose:** To become familiar with the Bunsen Burner: how it works and how to use it safely.

## Materials:

## Safety Rules:

## Procedures:

### 1. Practice lighting the Bunsen Burner:

- Connect the burner to the gas outlet (nozzle) using the rubber hose. Turn the barrel so that the air intake holes are half open. Hold a LIGHTED match a short distance above the top and to one side of the barrel opening. Turn the gas valve (tap) to extinguish the flame. The gas valve (tap) is off when the handle is perpendicular to the outlet pipe.
- If at any time the force of the gas blows out the match, turn the gas off and try to light it again holding the match further from the center of the gas stream. **DO NOT LEAN OVER THE BURNER OR PUT YOUR ARMS OVER THE BURNER AT ANY TIME!!**
- Sometimes, when the air holes are open too wide or the gas pressure is too low, the burner may STRIKE BACK. (This means it will burn at the base.) If this happens, turn the gas off immediately and cut off some of the air. Relight.
- Turn the burner off. Using the hooded sparker light the burner. Practice using the sparker before you turn the gas on - then turn the gas on, hold the hooded sparker at an angle by the mouth of the burner and light.

### 2. Adjusting the air flow:

- After safely lighting the burner, open and close the air holes at the bottom of the barrel. Observe, in detail, what happens to the flame with more or less air. Record your data.

### 3. Observing the heat distribution:

- Adjust the height of the flame to about 5 cm. Using tongs, hold an index card horizontally in the base of the flame (at the top of the barrel). **DO NOT ALLOW THE CARD TO CATCH ON FIRE.** Observe what happens to the card.

- Turn off the burner. Push a T-pin through a wooden match stick just below the head. Suspend the match into the barrel. The head of the match should show above the top of the barrel. Light the burner.

## Data Collection:

### Observing the Air Flow

Open Air Holes	Closed Air Holes

### Observe Heat Distribution

**Describe what happened to your card.**

Be sure to attach it to the bottom right corner of your lab.

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## Conclusion Questions:

1. Diagram, label, and describe the function of each of the parts of the Bunsen Burner listed: base, barrel, gas intake tube, and air intake holes.
2. Describe what happens to the flame when you open the air holes, allowing more air to mix with the gas.  

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3. Describe what happens to the flame when you close the air holes, keeping air from mixing with the gas.  

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4. Draw and label the 'perfect' flame. Label the hottest and coolest part of the flame.

5. What happens to the match stick when suspended in the center of the barrel?

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6. Name two sources of heat that you could use if a Bunsen Burner were not available.

a. \_\_\_\_\_

b. \_\_\_\_\_

7. What causes the Bunsen Burner to "Strike Back"?

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8. List three safety precautions that are necessary to observe while using the Bunsen Burner:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

9. Explain the difference in technique for lighting the Bunsen Burner with a match as opposed to using the hooded sparker.

How to light the Burner with a match	How to light the burner with a hooded sparker