

# 4 Bunsen Burner Mini-Lab

February 5, 2019 9:59 AM

## The Bunsen Burner Mini-Lab

Name: \_\_\_\_\_

Block: \_\_\_\_\_

Group Members: \_\_\_\_\_

Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

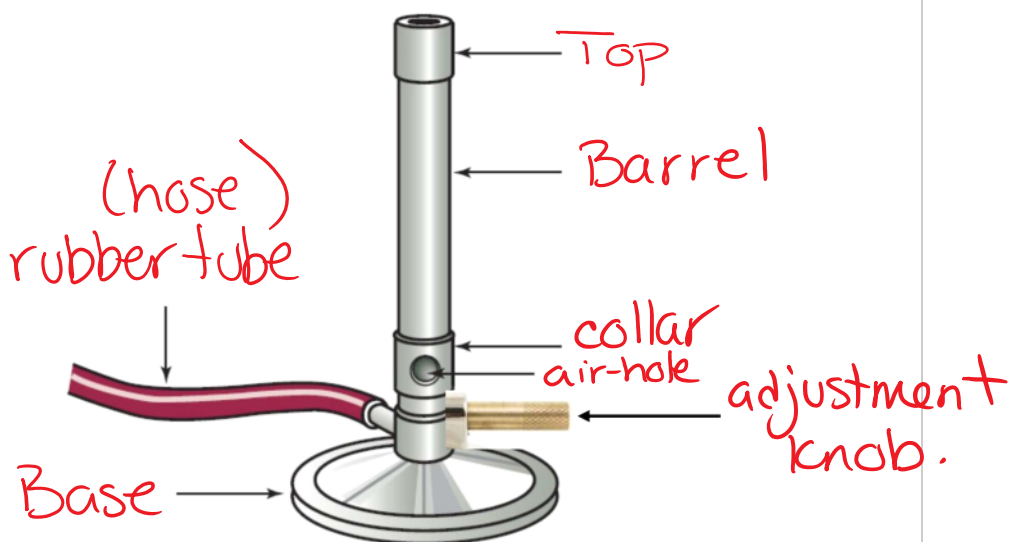
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**Background:** Often a chemist needs to heat materials. The Bunsen Burner is one of the most efficient ways of doing this. Burners mix gas with air to produce a hot flame. In this lab you will learn how to light and adjust a burner flame and to alternate between the safety flame and the heating flame.   
 (orange/yellow)   
 (blue)

### Parts of the Bunsen Burner:

Label the parts of the Bunsen burner below.

[air hole, barrel, base, collar, gas tube, top]



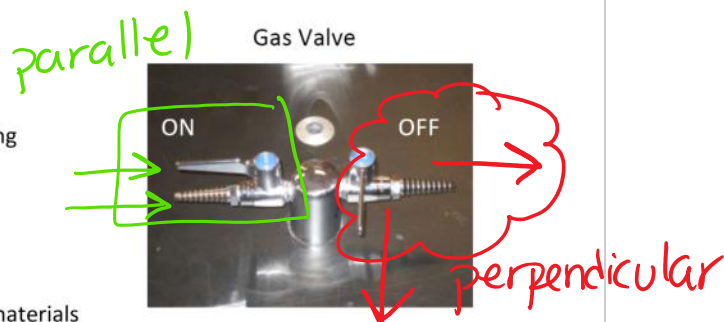
**Objective:** To investigate... how to safely light and operate a bunsen burner

**Materials:**

- |                 |                  |
|-----------------|------------------|
| • bunsen burner | • safety goggles |
| • striker       | • lab aprons     |
| • rubber tubing | • heat-proof mat |

**Safety:**

- 🔥 tie long hair back
- 🔥 Roll up sleeves and remove loose clothing
- 🔥 Put on safety goggles/glasses
- 🔥 Wear a lab apron
- 🔥 Check hose for cracks or damage
- 🔥 Clear the bench of any flammable materials
- 🔥 Check that the gas valve (*handle*) is in the OFF position (perpendicular to the gas tap)
- 🔥 Turn the collar of the Bunsen burner so the air hole is closed.



**Procedure:**

1. Connect hose securely to gas supply tap and Bunsen Burner
2. Make sure the air hole is closed
3. Close the gas flow adjustment valve at the bottom of the burner, and then open it 1 full turn.
4. With the striker in one hand, turn the gas valve-handle **parallel** to the gas tap & hose with your other hand.
5. **IMMEDIATELY** hold the striker over the top of the barrel and light the Bunsen Burner by creating a spark.  
**NOTE: when you first light your Bunsen Burner, it will be on the "safety" or yellow flame.**
6. Place one hand on the base to hold the burner steady, and using your other hand, turn the collar so the air hole is **open**.  
**NOTE: you have now turned the Bunsen Burner to the "heating" or blue flame**
7. Use the adjustment value to change the flame height.
8. When finished, turn the collar so the Bunsen burner is again on the safety flame, and turn the gas valve-handle to the **OFF position** to stop the flow of gas.

**Analysis Questions:**

1. Fill in the following blanks using the word bank below:

WORD BANK			
Rubber	Heat proof surface	Close	Top
Orange	Air-hole	Collar	Blue

NOTE: this question refers to matches, we will always use a striker!

**How to use a Bunsen burner**

1. Connect the Bunsen burner to a gas tap using a piece of rubber tubing.
2. Put the Bunsen burner on a heat proof surface.
3. close the air-hole.
4. Light a match.
5. Put the lighted match over the top and turn on the gas tap. The flame of the Bunsen burner should be orange and irregular in shape.
6. Open the collar slowly. The colour of the flame changes to blue.
7. When not using the Bunsen burner for a while, close air-hole. This will change the blue flame back to a yellow flame. The yellow flame is the safety flame.

**8. Turn off the gas tap after use.**

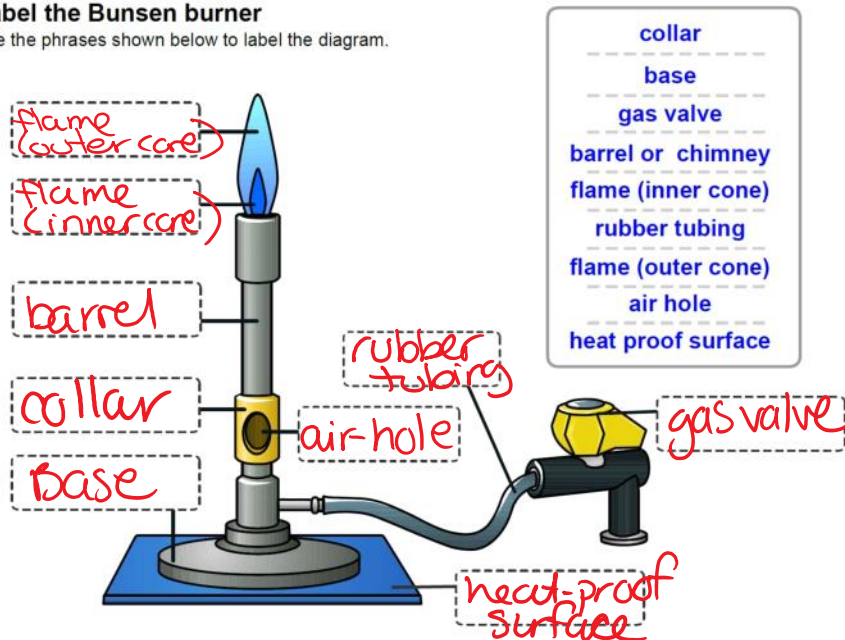
2. What is the colour of the Bunsen flame when the air hole is:

- a. OPEN: blue
- b. CLOSED: yellow / orange

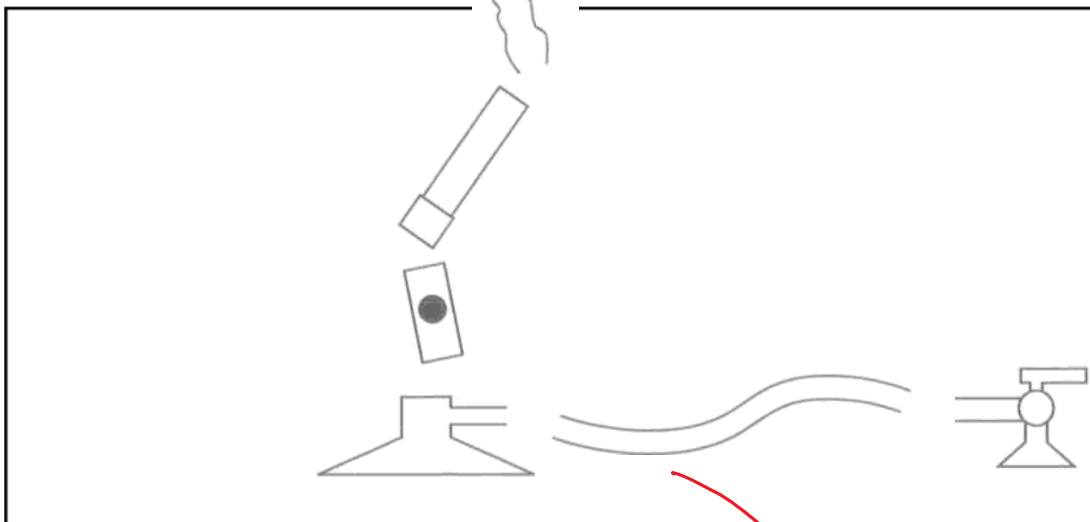
3. Label the Bunsen Burner:

**Label the Bunsen burner**

Use the phrases shown below to label the diagram.



Paste diagram from Questions #4 HERE:

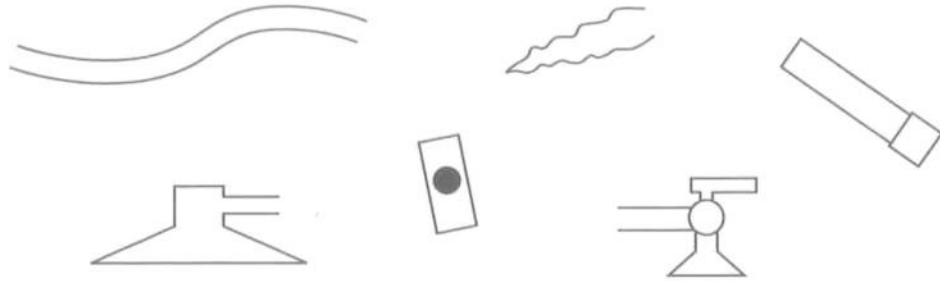


Paste answer to QUESTION #5 HERE:

*see next page*

1.	2.	3.	4.	5.
6.	7.	8.	9.	10.

4. Construct a diagram of a Bunsen burner connected to a gas tap, using the six parts below. **Cut out** each part and **paste** the parts into your book in the correct order. **LABEL** each part.



5. A Student is preparing to do a lab where they will be heating a beaker of water over a bunsen burner. **EXPLAIN** the correct order for this task by **cutting out** each of the following labels and diagrams. **Match** the correct text box with diagram and **paste** them into your booklet in the correct order for lighting the Bunsen Burner.

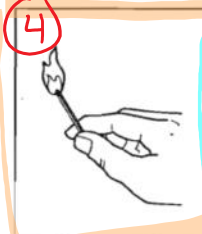
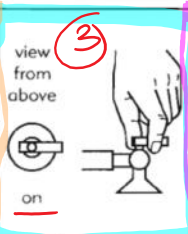
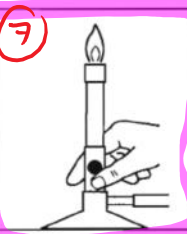

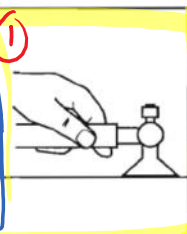

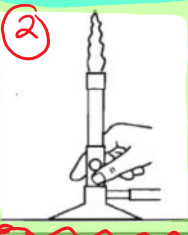
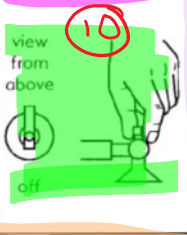

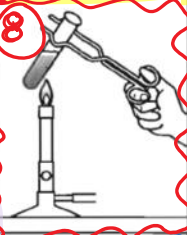
Key



airhole closed



airhole open

				
				
Close the air hole. <span style="float: right;">2</span>	Hold the test tube above the Bunsen burner. <span style="float: right;">8</span>	Light a match. <span style="float: right;">4</span>	Turn off the gas tap. <span style="float: right;">10</span>	Close the air hole again. <span style="float: right;">9</span>
Open the air hole. <span style="float: right;">7</span>	Blow out the match. <span style="float: right;">6</span>	Place flame of match near top of Bunsen burner. <span style="float: right;">5</span>	Attach the rubber hose of the Bunsen burner to the gas tap. <span style="float: right;">1</span>	Turn on the gas at the gas tap. <span style="float: right;">3</span>