Introduction to the Chemistry Laboratory

Laboratory Techniques

Alert: Please remember to always wear protective glasses.

The Bunsen Burner

You will learn to turn on the gas in the room, light a Bunsen burner, adjust a bunsen burner for the best flame and safely shut down a bunsen burner.

Answer these questions before lighting the Bunsen burner.

1. What is the name and formula of the gas used in our laboratory with the Bunsen burners?

2. A fire needs three things – oxygen, fuel and a spark to ignite it. What is the source of oxygen for the burner flame?

3. What is the fuel?

4. What is the name of the tool used to ignite the burner? How does it work?

5. The gas cock is a valve that allows gas to flow when needed. Sketch the valve in the open position and in the closed position:

6. How is the air flow controlled in the Bunsen burner?

Light the burner.

1. Describe the color and appearance of the flame.

2. Allow more air to flow but do not allow the flame to go out. Describe what occurs.

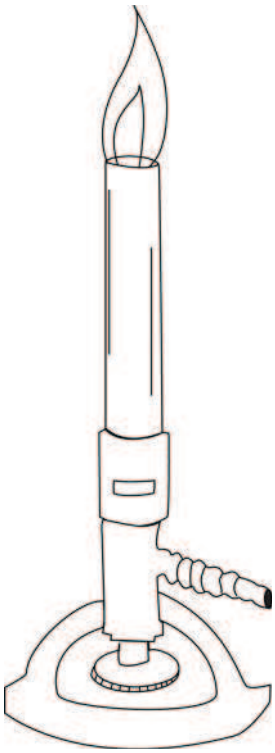
3. Restrict the air flow but do not allow the flame to go out. Describe what occurs.

4. Increase the gas flow. Describe what occurs.

5. Decrease the gas flow. Describe what occurs.

6. Describe the characteristics of the flame of a well adjusted burner.

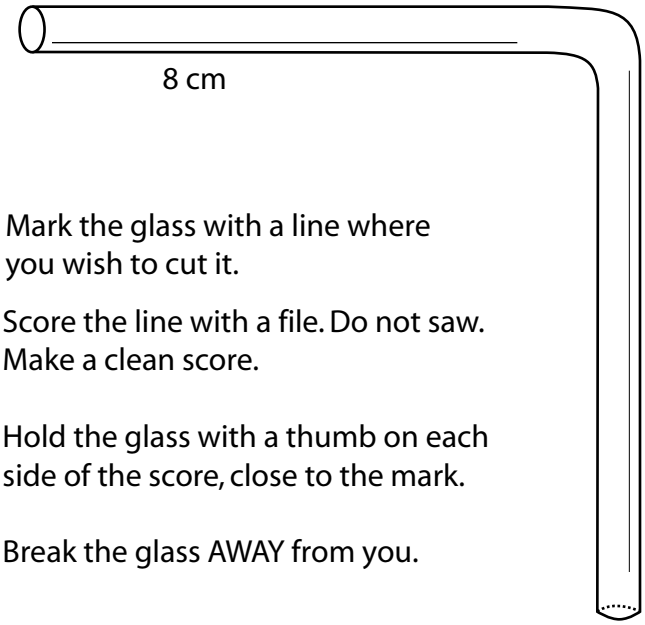
7. Label the following diagram with the terms gas inlet, air vents, barrel, needle valve, region of highest temperature, inner cone, outer cone, gas inlet.



Glassworking

Working with glass will give you practice using the Bunsen burner and some useful skills for making glass pieces used in the laboratory. You will learn to cut glass tubing, fire polish cut glass, bend glass tubing and draw out glass tubing to create microtubes. The glass pieces you will be making are diagramed on the following page. As you make each piece place it on the diagram. Your evaluation will be based on how accurately you reproduce the size and shape of these pieces.

To bend glass make sure it is hot enough. Remove it from the flame and bend it quickly in one smooth motion.

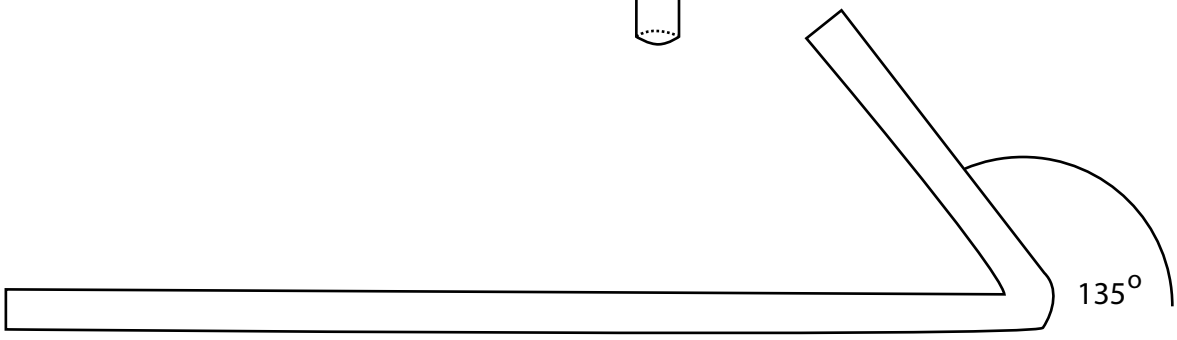


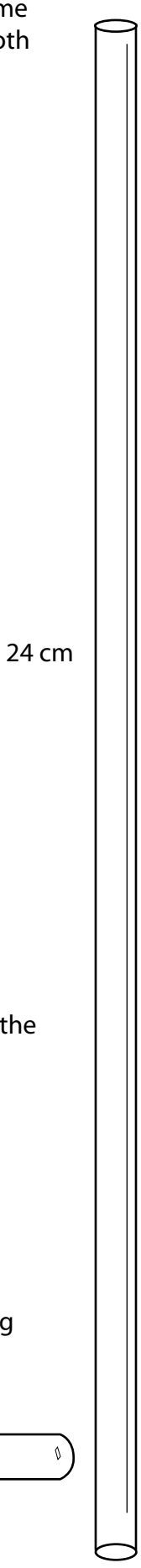
Mark the glass with a line where you wish to cut it.

Score the line with a file. Do not saw. Make a clean score.

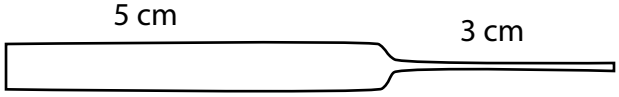
Hold the glass with a thumb on each side of the score, close to the mark.

Break the glass AWAY from you.

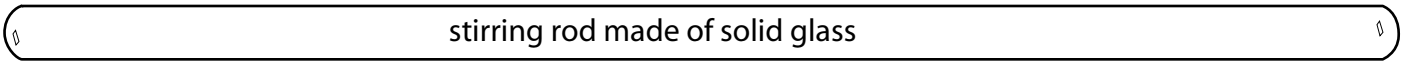




To fire polish the ends of the glass, hold the end in the flame until it partially melts.



To taper glass it must be pulled. This should be done after heating it and removing it from the flame. Pulling too fast will cause the glass to separate and the tip to close.



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