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Laboratory Procedures

Good scientific practice involves using the right equipment, but it is equally important to use it correctly in order to make accurate measurements and observations.

There are specific procedures that should be used for different kinds of equipment. The procedures used for some common laboratory tools are listed below.

Microscopes

The microscope shown below has three different objective lenses. The shortest one has the lowest magnification, and the longest one has the highest. When mounting a new slide on the microscope, first turn the objective lens to the lowest magnification. Then mount the slide and focus on it with the lowest magnification first. If you try focusing with the highest magnification first, you may accidentally break the slide by trying to put the long lens right through it.



Thermometers

Different thermometers work differently. Electronic thermometers often have built-in timers. You can watch the temperature reading change on an alcohol thermometer and take the reading after the level stabilizes.

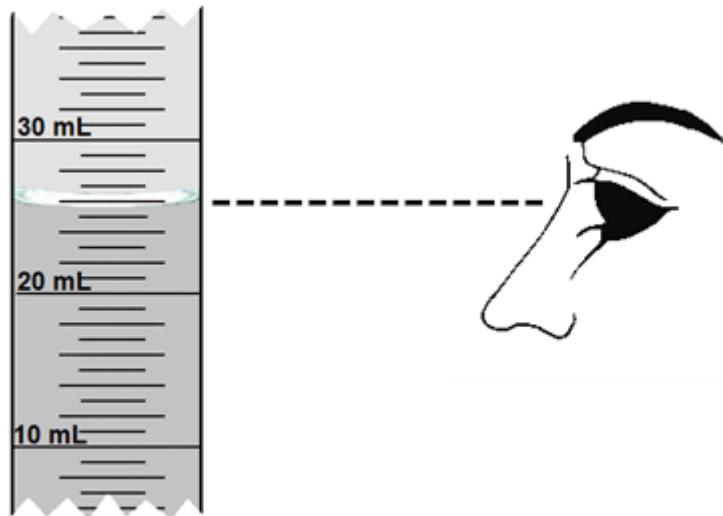
Bunsen Burners

To use a Bunsen burner, first connect the gas hose to the burner. Make sure the gas adjustment valve at the base of the burner—a needle valve in the image on the left—is completely closed. Turn on the gas, then open the needle valve. Next light the burner by applying a striker or sparker at the top. If it does not light immediately, turn the gas off and wait a while before trying again. Finally, adjust the air flow (often by rotating the main cylinder) until the flame is the right shape and size.



Graduated Cylinders

To use a graduated cylinder, set it on a level surface. Bend down until your eyes are at the same level as the surface of the liquid, then read the level from the *bottom* of the meniscus. In the image below, the graduated cylinder is filled to about 25.7 mL.



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