

HOW TO CHOOSE MICROSCOPES

If you're out to buy a microscope and are confused, you're not alone. There are many different types of microscopes out there to choose from, but I believe the easiest way to narrow down your choices is by determining what you are going to use the microscope for. For example, if you're going to need a microscope with very high magnification to study the internal structure of cells, you'll probably want a compound microscope. On the other hand, if you want a microscope to examine parts on a circuit board, you will benefit the most from a stereo microscope.

I. The three, most basic features your microscope should have if you're even a little bit serious:

- * Fine focus

- * Abbe condenser

- * Rotating nosepiece with removable 4x, 10x, and 40x objectives, preferably DIN lenses (an international standard, which means you will always be able to get replacement lenses even if your manufacturer discontinues a model).

II. Additional features you should really get if you're serious and your budget can accommodate them:

- * Mechanical stage - forget using your fingers to move the slide, especially if you work with high power much. The mechanical stage also allows you to find something repeatedly on a slide instead of playing hit-or-miss each time.

- * Oil-immersion objective lens (100x) - allows your microscope to be used at 1000x. Depending on what you're planning to study, this may not be optional. Some cell types and structures simply aren't visible at much below 1000x.

- * Binocular head - this is more of an optional feature, but if you'll be using your microscope very often, a binocular microscope feels much easier on the eyes.

OPTIONS TO CONSIDER WHEN SELECTING YOUR MICROSCOPE:

Biological Microscopes vs. Stereo Microscopes

Biological Microscopes use transmitted light and high magnification to view translucent sections of material on slides. Stereo microscopes use two eyepieces and both transmitted and incidental light at lower magnification to view 3D opaque objects.

Digital Microscopes

Digital scopes allow the user to plug the scope into a TV, computer, or projector to view and manipulate images in a larger format. A variety of connections and resolutions are available.

Cordless Microscopes

Cordless scopes operate on eco-friendly rechargeable batteries, eliminate safety hazards, and expand opportunities for use outside the traditional classroom setting. Look for the Cordless icon throughout the microscope section of your Frey Scientific catalog.

Size

Frey Scientific offers compact microscopes perfect for the smaller hands of elementary and middle school students as well as larger, standard-sized scopes for secondary and university use.

Head Type

Monocular scopes have a single eyepiece for one-on-one work. Dual head scopes are great for supervised viewing or working in small groups. Advanced binocular scopes have two stereoscopic eyepieces and are very sensitive to light and detail.

Objectives

All our compound scopes have 2x, 4x, and 40x/xR objectives. Some allow you to investigate slides in greater detail with a 100x/xR objective. Stereo microscopes are offered in a variety of magnifications including fixed, variable, and variable zoom.