MAGNIFY SCIENCE

Microscope + Video camera = The Big Picture

Why Video?

Video brings color and life to the details of the micro-world and allows the whole class to see the specimen at the same time.

Videosystems save money. With video systems, it is not necessary to have a microscope for every student in the class, nor is it necessary to set up complicated instrumentation repeatedly for special experiments. Just set up a video camera and tape both the set-up and experiment.

How easy is it?

Cambridge produces complete, stand-alone video/microscopy systems, including the interface between the microscope and camera. However, if you are adapting your video to our microscopes, all you need to do is....

1. Make sure that the microscope has a trinocular head or camera port which will accept a video adapter (one which has a "C-mount" at one end). Since each manufacturer has slightly different versions, make sure that the video adapter fits your scope.
2. Attach the threaded part of the adapter to the camera and the other side to the microscope.
3. Attach the video cable to the VIDEO OUT port on the camera and the other end to the VIDEO IN on your monitor.

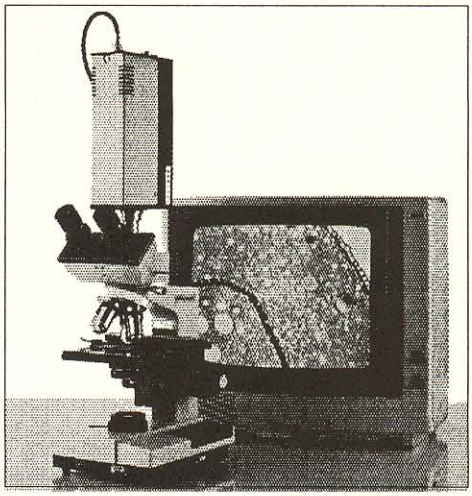
Finally, turn on the monitor, focus the microscope for sharpest image, and begin teaching.

What will you see?

About 75% of the view seen in the microscope (depending on the camera used) but bigger and, in many cases, clearer.

How can you get the best image?

1. Make sure that the microscope is set up correctly. For compound microscopes, set the optics and illumination for the crispest image; for stereo microscopes, correct lighting is especially important.
2. Chose a good sample - one which is flat (for compound microscopes), cleanly prepared, and has well-defined structures.
3. Stained or colored materials show up best.
4. If the monitor has adjustments for contrast, brightness and/or color, adjust it for the best image, just as you would your TV at home.
5. If the detail is very, very small, try Cambridge's HIGH RESOLUTION VIDEOMICROSCOPY SYSTEM.



Cambridge Instruments
Optical Systems Division

"Let's go to the Video Tape..."

That great demonstration that you did last Thursday is now a great video presentation, available any day, any time, any where.

Instead of connecting the video cable between the camera and monitor, put a recorder in the loop (Just remember to go OUT of the first device and IN to the second). Cambridge's video camera is compatible with most VCR's and color monitors.

For BIOLOGY:
Observing dissections on the stereo microscope, with follow-up observations on fixed and stained slides viewed through a compound microscope; Observing cytoplasmic streaming; slowing down high speed motion and watching ciliary or flagellal action at high magnification.

For CHEMISTRY:
Growing crystals and observing various crystal forms; observing chemical reactions "up close and personal"; comparing optical and physical properties, especially using polarized light.

For PHYSICS:
Observing circuitry on microelectronics; demonstrating practical applications of optics, including the effects of polarized light; demonstrating basic phenomena such a Brownian motion and diffusion.

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