

# THE AMERICAN BIOLOGY TEACHER



## About Our Cover

Taking photographs of objects seen through a microscope has become much easier and more accessible to students and teachers with the advent of digital cameras. Whether using a point-and-shoot (P&S) digital camera or a cell phone with a built-in camera, you and your students can learn to take good-quality digital photographs through your microscope.

The quality and build of the microscope itself obviously affects the final image, as does the resolution and type of sensor in the camera. There are, however, other variables that you can control. For example, camera shake (stability of the camera) has the biggest impact on your final image. It is, therefore, important to have a stable position in which to hold the camera up to the eyepiece of the microscope. A tripod-mounted camera may be used, but this can be unwieldy in positioning the camera. Another possibility involves the use of sturdy tubing (anything from cardboard to PVC tubing) that fits securely over the eyepiece and allows the camera lens to rest against the tube at the proper distance. With practice and patience, holding the camera up to the microscope is also very effective if the elbows and/or hands are braced in some way to reduce camera shake.

P&S digital cameras with internally focusing lenses work better than those with lenses that protrude from the camera. Similarly, cell phone cameras are internally focused and work well. Live View function is essential in seeing that you are within the optical axis of the microscope. Other recommended functions are macro mode and zoom, if available.

Once your students are accustomed to using their P&S cameras or cell phones to take digital photographs through the microscope, their enthusiasm for the world of microscopy will increase and spread!

Students in this sophomore-level general biology class were exploring living organisms in pond water and were using a P&S camera to take digital photographs to document various species. The photographer is Carol Robertson, a biology and genetics instructor at Fulton High School in Fulton, Missouri (crobertson@fulton58.org).

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