





Figure 4. Students' ability to create is limited only by their talent and imagination.

loading and exploring the free Starter Edition first to get the feel of the application. For the classroom, teachers/schools should negotiate directly with Ambient Design to receive lab-pack or site-licensed pricing.

### ArtRage 2.5

Ambient Design Ltd.  
Free Starter Edition; \$25 for single download; \$39.95 for shipped CD with printed manual, video tutorials, and extras  
<http://www.artrage.com>



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## Califone CM1-USB

By J.V. Bolkan

Digital microscopes such as the CM1-USB have a number of advantages over their optical mechanical siblings. The most obvious is the ability to share and record the magnified images. Learning to view a slide with a standard microscope is a challenge, especially for students with glasses or other vision problems. Additionally, standard microscopes are solitary viewing devices—what is seen by one viewer is not always what the next will see.

The CM1-USB is a relatively small and simple device, perfect for elementary student use. Installation is also very simple. A mini CD-ROM contains the installation program that enables you to choose Microsoft Vista or XP/Me/98/95 drivers. I had it installed on my XP-based system in less than five minutes, including connecting the USB 2.0 cable. When I tried to install the drivers on a laptop,



The CM1-USB Viewer program allows the entire class to view the magnified image.

the mini CD-ROM wasn't recognized. This wasn't a problem on a second laptop, nor with my desktop system.

Using the CM1-USB is extremely easy. Running the installed Viewer program brings up a real-time display of what the microscope "sees." Pulling

A leaf as seen through the CM1-USB scope.

its power directly from the USB connection, the CM1-USB has a bright LED light that does a very good job of illuminating whatever you're examining. A large, slightly recessed ring in the center of the microscope is the focus control. Both small and large hands should find the focus easy to control and reasonably precise. A small red button used for capturing still images is the only other control on the device.

A chromed plastic base holds the unit. I found the base a bit lightweight and wouldn't depend on it withstanding the rigors of the classroom for



The CM1-USB can be used in the field as a handheld microscope.

long. I continually popped the microscope loose from the base when attempting to adjust it. Fortunately, the microscope is made to function fine as a handheld device.

A clear plastic extension on the end of the microscope not only protects the imaging lens, but works quite nicely

as a spacing aid. Pressing the extension directly on the material I wanted to view enabled me to keep the device steady and provided enough distance from the lens to allow clear focus.

In addition to displaying its output live on the computer screen and taking snapshots, the CM1-USB can capture full-motion video. Video capture is accomplished through the Viewer application. The Viewer also provides a number of simple preset image filters and control for settings such as image resolution, and video settings.

Images from the CM1-USB are surprisingly good. The 24-bit color CMOS lens can capture images at as much as 1280 X 960 resolution (although I noticed little if any improvement over

the 800 x 600 mode). I could easily focus on “bugs” in some pond water I examined and the entire magnified area seemed free of distortion. I would have liked the option of a bit more powerful magnification, but that’s mostly because what I could see was so intriguing, I wanted to see more.

Available at retail for about \$100, the Califone CM1-USB is an outstanding value especially for elementary-level classrooms, but can also be useful in middle and high school science classes where extreme magnification is less important than whole group viewing.

### Califone CM1-USB

Califone International  
\$126  
<http://www.califone.com>

## Kingston DataTraveler 2GB

By J.V. Bolkan

Simple is good. Combine simple with inexpensive, effective, and very useful and you’ve got a winner. Kingston’s 2GB DataTraveler thumb drive is all those things, and it has lime green trim—could anything be better? Well, sure, but the DataTraveler is all about the sweet spot in technology, not the cutting edge.

Kingston is known as a midrange to high-end computer memory manufacturer. Despite the brand name and solid reputation, the 2GB DataTraveler is widely available for less than \$20 (I did find it as low as \$15 online). Finding a no-name alternative simply isn’t worth the time or effort—you’re not going to save enough to justify the keystrokes.

Compatible with modern operating systems, including Windows XP/Vista and Macintosh OS X, the USB 2.0 drive is as simple as these devices can be. There is no software or installation



needed. This model isn’t certified for Vista ReadyBoost, but it is pretty fast. I was able to run a high bandwidth (2.1 Mbit) video directly from the device with no problems. It does have a data transfer light, a minor “extra” that I appreciated.

There are bigger models, models with exotic capabilities and included software, and more rugged drives, but at \$20, this is a no brainer. The only real decision is how many to buy.

### DataTraveler

Kingston Technology  
<http://www.kingston.com>



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