Media-Making: Choosing Equipment

Media production tools are constantly evolving. This is both a blessing and a curse for educators and students. On the one hand, the tools keep getting smaller, easier to use and more portable. On the other, the constant hardware and software upgrades make it difficult to maintain compatibility and consistency from year to year. Media equipment manufacturers don't always consider educational settings and requirements when designing their products, so educators are often forced to make do with whatever they can find or afford. This can result in a lack of good-quality equipment because of budget restrictions, or the production of lesser quality media projects due to poor equipment. Here, we'll show you how to get the most out of the equipment you have or help you choose the best equipment for your budget.

The first thing to think about when considering an equipment purchase is the kind of media you want to create—audio, video or both? Then factor in how much you have to spend. Use the charts to find the configuration that best fits your needs.

In addition to all of these options, it's important to know that the technical tools we use to create media will continue to change. You may have used and liked some in the past, but be aware that they may be out of date tomorrow!

Links to additional resources can be found by clicking on the "Equipment" tag at Delicious.com.
http://delicious.com/KQEDScienceEd/equipment

HARDWARE

Modest Budget
Budget-friendly equipment can produce quality results. However, it won't give you a great deal of technical flexibility. These products cost around $100.00, and some are less.

Video	Audio	Editing or Processing
Cell phone camera (Non-smartphone--at least 5MP)	Built-in	PC/Mac
Point-and-shoot camera	Built-in	PC/Mac
Digital camcorder (Flip Video or equivalent	Built-in	PC/Mac
Web camera (requires computer or laptop)	Built-in	

Most students have powerful media-making devices in their pockets in the form of cell phones. These often have the ability to take pictures and record video and audio of surprisingly good quality. A step up is a small point-and-shoot camera, and these are comparatively inexpensive. Digital camcorders shoot only video, and are also relatively inexpensive.

Medium Budget
You can get great results from inexpensive equipment, but getting the most out of the tools requires a bit more technical expertise. There are fewer options in this category. Features like focus control and audio control help make your projects more viewable. The ability to connect an optional external microphone to these cameras adds polish to the finished product. However, the quality of microphones available to connect to them is not quite at the professional level.

Video	Audio	Editing or Processing
High-end smartphone (480p, 720p, 1080p)*	Built-in	PC/Mac
Point-and-shoot camera	Built-in mic/external digital audio recorder	PC/Mac
Digital video camera (Non-HD)		
High-definition video camera (HDV 720p)		

This category also includes video cameras that have the ability to shoot in the high-definition standard. Expect a high-quality, yet budget-friendly, camera to cost between $450 and $700. Many point-and-shoot cameras have the ability to shoot high-definition video, as do some of the more feature-oriented smartphones, though the quality is not *truly* high definition*. These smartphone devices cost around $500.00 without a contract subsidy from a mobile phone carrier.

Large Budget
This price range gives you nearly unlimited flexibility for your media projects. A well-organized curriculum will help keep you focused.

Video	Audio	Editing or Processing
High-definition video camera (HDV 720p, 1080p) Digital single-lens reflex (SLR) camera (720p, 1080p)	Built-in Built-in mic/external digital audio recorder	PC/Mac PC/Mac

SOFTWARE

Modest/Medium Budget
There are many different ways to work with the media after you've captured it. Smaller projects may not require any editing at all. You may simply need a way to get the video or other images off your device. Many of these products have software designed to help you do that. Check the CD or DVD that comes with your device for the necessary software. Before you buy any equipment, make sure the device is compatible with your computer.

Video/ Stills	Editing or Processing
In-camera editing	PC/Mac
Bundled software	PC/Mac
Online editors (often free)	PC/Mac
iMovie (free)	Mac
Microsoft Movie Maker (free)	PC

Audio	Editing or Processing
Audacity (free)	PC/Mac
Bundled software	PC/Mac
Online editors (often free)	PC/Mac
GarageBand (free)	Mac

Large Budget
Video editing has evolved quickly. Professionals usually work with one of two applications: Apple's Final Cut Pro or Avid Symphony editing software. Final Cut Pro is relatively inexpensive, versatile, easy to set up and available in lower-cost versions.

Video/ Stills	Editing or Processing
Avid Symphony	PC
Final Cut Pro	Mac
SONY Vegas	PC
Adobe PhotoShop (still image)	PC/Mac

Audio	Editing or Processing
Pro Tools	PC/Mac
SoundTrack Pro	PC/Mac
Adobe Audition	PC/Mac (coming soon)

ABOUT THE TOOLKIT

This resource is a component of the Media-Making Toolkit for Science Education, developed by KQED Education Network. The Toolkit includes instructions, worksheets and rubrics to assist educators in implementing media-making projects with students.

For a complete listing of the resources in KQED's Media-Making Toolkit, please visit www.kqed.org/quest/education