

Module 11
AUDIOVISUAL



Make things as simple as possible, but not simpler.

Albert Einstein

Module 11

AUDIOVISUAL

What is it?

Bringing images and sound to interpretive programs

Why do we do it?

To create powerful connections between our audiences and our subjects

How do we do it?

By carefully selecting when and how to add images or sounds to our interpretive talks and by mastering the use of our equipment

INTRODUCTION

Audio-visual (A/V) presentations range from the very basic, such as using a flip chart to much more sophisticated computer- and projector-integrated presentations. This module will provide a brief overview of the various tools that might help you to provide personal interpretive programs that appeal to the eyes and ears of your target audience. We will discuss their advantages, disadvantages, proper operation, care and maintenance, and some basic principles of photography.

In our fast-paced world, technology seems to be driving much of what our visitors have come to expect. But do not be misled, the program styles that Enos Mills, John Muir, and Galen Clark offered over a hundred years ago are still very well received and appreciated. The same principles of interpretive delivery apply, but with A/V you can augment your presentation to make it more dynamic and interesting for our present day visitors. Over 45 years ago Tilden said, “Gadgets don’t supplant the personal contact; we accept them as valuable alternatives and supplements.” (Tilden, 1967, p. 97).

While A/V equipment is designed to aid in presentations, it is not always appropriate. **Visual aids should supplement your thematic program and not become the driving force behind its creation.** As we discussed in *Module 6—Talks*, visual aids add to the program, but all programs should be able to stand alone. Before you incorporate A/V equipment, ask yourself if it contributes to the understanding of the theme. Do the “bells and whistles” support or detract from your message? There are some interpretive opportunities that are better met with a chipmunk finger puppet than with any sort of audiovisuals.

Once again, it is important to know the audience, have an appropriate theme, and employ the suitable techniques that help convey the purpose of the presentation. As is the case with any equipment, it is critical that you familiarize yourself with its proper setup and operation well in advance of your actual presentation. The more equipment you use, the greater the likelihood that something will go wrong. Your best defense is a thorough knowledge of your equipment.

With that in mind, while it is not the intent of this module to discuss specific brands and models of equipment, we will provide an overview of the currently available types of equipment and some applications in interpretive programming. Remember, the more technology you use in your presentation, the more care and time you will need to invest during the preparation stages. Now we will take a look at some types of A/V aids to interpretation.

11.1 EQUIPMENT

CAMERAS

The most underutilized piece of equipment in an interpreter's arsenal is the camera; we simply do not use our cameras enough. As an interpreter, you are in a unique position to capture special "interpretive" moments that you can share in the future. Experience and practice will make you less preoccupied with the mechanics of the camera and more



Get to know your camera so you can use it to its full capacity.

able to relate to the scene and the final picture. Experiment with the full range of controls offered by your camera, and you will soon become more comfortable with photography and more proficient at photo composition.

Phone cameras and compact digital cameras are relatively small and inexpensive. They offer point-and-shoot capability, making them extremely convenient while requiring less technical knowledge regarding focusing, exposure settings, lens choices, and shutter speeds. In addition, because they are lightweight and compact, they are easy to pick up at a moment's notice. All of these features assist in taking pictures, but good photographic skills are still required for the best results.

Photography

Producing quality photographs takes skill and practice. We encourage you to explore the discipline and the equipment options available. To improve your skills, take advantage of the hundreds of books and websites dedicated to photographic techniques. One of the surest ways to improve your photography skills is to practice. Keep a record of camera settings, weather, and other conditions under which each picture was taken. Soon you will learn what worked and what did not by seeing the picture itself and referring to the conditions under which it was taken. If you are planning to use your photo for park interpretation, **be sure to obtain a visual media consent form (DPR 993) from any recognizable people who appear in your pictures.** (See *Forms*).

Photo Editing

Have you ever been disappointed with a photo you carefully shot? The eye has a much greater tonal and focusing range than any camera. Our brains automatically compensate for exposure and color balance, but the camera does not. Many times, software can help improve photographs from digital cameras.

Adobe® Photoshop© is the industry standard for manipulating digital images, but it is expensive and not intuitive to use. Photoshop Elements© is a much less expensive and easy to use alternative that has the most commonly used functions in a more user-friendly interface.

Professionals often use other software such as Adobe Lightroom©, which is specifically designed for photographers and fairly simple to use. If you are seriously interested



Photos allow you to show visitors some things they might not be lucky enough to see themselves.

serves as an organizer also. Mac® users have iPhoto®, which is similar to Picasa in some ways, as well as Mac versions of popular software. **While software can make a good photo better, it can't make a bad picture into a good one.**

Some software allows you to work on a copy of your image. If not, make a copy yourself before you begin editing. Photo manipulation software makes permanent changes to pixels, with limited opportunities to “undo” your changes. Operations such as changing color balance or exposure should be done subtly.

Composition

The basic principles of composition are extremely important to achieve good photographs. Photographic composition is simply the selection and arrangement of subjects within the picture area. Become familiar with these rules of composition, and practice them until they become second nature to you.

in learning how to use Photoshop to full advantage, consider taking a class online or at a local community college.

Digital cameras almost always come with some basic editing software that allows you to shift color balance, exposure, and crop images, and there are free alternatives as well. Picasa© by Google® is a downloadable software package that allows basic editing functions and

Of course you are probably shooting an oblong image, not a square one. The rule is the same regardless of whether you are shooting a horizontal or a vertical scene. And watch that horizon! Keep it level across the image.

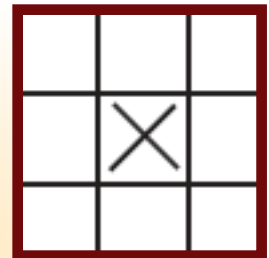
It is very common to photograph a scene where you can see everything clearly only to have some areas of the photo come out much too dark or too light in the image. Whenever you can, avoid scenes that have dark areas and light areas with important details in both. If your subject is in the shade and your background is in bright sun (or vice versa) remember your camera will probably capture one or the other well, but not both.

COMPOSITION TIPS

- **Have a strong center of interest.**
- **Find the best camera angle.**
- **Frame your object.**
- **Fill the frame.**
- **Use the “rule of thirds” for subject location.**

Rule of Thirds:

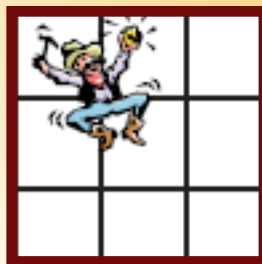
A picture is more interesting if the main subject is not centered. Arrange it a bit off center. Compose your picture as if there was a tic-tac-toe grid over the image; each spot where the lines intersect is ideal for placing a subject. Additionally, have the subject “look” into the photo.



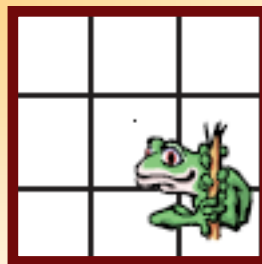
Avoid Center



Lower Left



Upper Left



Lower Right



Upper Right

Lens

One of the most critical components of any camera is the lens. Since the lens plays a vital role in determining what the camera can do for you, knowing how to take full advantage of the various types of camera lenses pays dividends in terms of better, more exciting pictures. The ability to accept interchangeable lenses is a feature that greatly adds to the camera's versatility, although most moderately priced digital cameras do not offer this feature.

PRIMARY TYPES OF LENSES

- **Normal:** approximates what our eye sees
 - **Telephoto:** tight focus on distant objects
 - **Wide Angle:** broader than our eye sees
 - **Macro:** extremely close views
 - **Zoom:** lenses with variable lengths
-

There are also specialty lenses that are rarely encountered, such as tilt shift lenses, primarily used for architectural work. For the cost conscious, lens attachments such as extension tubes provide added features to stock lenses, but generally do not allow for the highest quality images. Your judgment will help you determine if these photos work in your program.

In 35mm photography, a 50-55mm lens is regarded as “normal.” Longer lenses (>55 mm) are telephoto lenses, and shorter lenses (<50 mm) are wide-angle lenses. These numbers are based on the proportional size of the image that strikes the 35mm film frame.

With digital cameras, the lens lengths of “normal,” “telephoto” and “wide-angle” have shifted because different cameras have different-sized image sensors. There is no number rule like there is for film cameras. Professional level cameras have larger image sensors than consumer level cameras, so a “normal” lens for a professional camera is longer than a “normal” lens for a consumer DSLR (Digital Single Lens Reflex) camera, and even shorter for a point-and-shoot camera. Don’t get confused by this. What’s important for you is the image you see in your particular camera’s viewfinder.

Most cameras today, from point-and-shoot to professional models, come with or accommodate zoom lenses, and fixed length lenses are less commonly used. You may see cameras advertised with “digital zoom” with incredible numbers, sometimes up to 300x zoom. If you’re buying a camera, ignore this. Digital zoom is an electronic magnification technique, where individual pixels are magnified, and images quickly begin to look blocky when enlarged. If you’re shooting with a camera with digital zoom, try not to use it. In many cases you can enlarge digital images for better quality with photo editing software.

Shooting Small Objects

You may want to show your audience small objects, perhaps a historical artifact or an insect. Some objects are just too fragile or too expensive to pass around, or perhaps you want to pass one around while you show a large photo of it on a screen.

Be particularly aware of your background when you shoot a close-up. While it will probably work to shoot a close-up of a shell right on the beach or a pinecone on the forest

floor, there are other times when a neutral background is the best way to highlight the object. Look in almost any catalog and you will see the merchandise floating on the page, seemingly without any background. A copy stand works well for flat items. But what if you want to shoot a vase or a flower stamen or something that stands upright? Professional photographers have elaborate setups to provide seamless backgrounds. You can achieve similar results with a sheet of flip chart paper and a little masking tape covering the table and part of the wall behind it. Visit your local art store for large sheets of paper in another colors. A black background may provide a particularly dramatic effect; just as a white background on a printed page gives the impression of floating with no background, a black background gives the same effect when you project the image. Some photographers carry a piece of black cloth in their camera bag to use as a makeshift background.

Image Resolution

When using a digital camera, it is important that you understand image resolution. Cameras are advertised as taking 10, 12, 15 and higher megapixel (Mp) images. A pixel (short for picture element) is a tiny, single point in a graphic image. **Imagine your photo is made up of thousands of dots of color. Each color dot is a pixel. When we speak of megapixels we are referring to how many million pixels are recorded in a single image.** Resolution is important, but there's much more to it.

Just how many megapixels do you need? It all depends on how you intend to use the image. When we are looking at a screen our eyes can see the picture correctly even if there are fewer dots of color spread over the space defining it. When that same picture is printed on paper with ink, we need more of the dots so that they are packed closer together before the image takes the correct shape. Here are some guidelines:

APPROPRIATE IMAGE USE		
TYPE OF USE	TOTAL # PIXELS (Mp = megapixels)	PIXELS PER INCH (PPI or DPI)
PowerPoint or web-based presentation	2 Mp	72-96
Brochure/print materials	5-6 Mp	150-250
Exhibit/banner	as large as possible	200+

These numbers are just approximations, of course. The “best” image resolution depends on the complexity of the subject matter, the number of different colors (and shades of colors), even the types of inks or dyes used in a physical reproduction.

Many photographers shoot at the highest resolution possible and then downsample (save the file in a version with fewer pixels) their work, depending on their intended use. While you may be shooting something for a campfire program presentation using PowerPoint today, perhaps in the future you will want to use the image in a book or backlit display. If you have a high-resolution (high-res) original image, re-purposing your work for this becomes much simpler.

So why not shoot everything in high-res and use it that way in your electronic presentations? It’s just electrons, and electrons are cheap, right? Actually, this is a bad idea for electronic displays. Inserting high-resolution images into electronic presentations such as a web page or PowerPoint presentation can cause problems. For the web, pushing out useless electrons increases the load on the server and slows down the end user. With PowerPoint it’s much the same, but can even cause your computer to crash. PowerPoint is a notorious memory and processor hog under the best of circumstances, and minimizing graphic file sizes is a good practice to adopt to keep your presentations functioning well with smooth transitions and quick load times.



Without an understanding of resolution, you might show blurry pictures or even cause your computer to crash during your program.

Many types of photo editing software allow you to choose resolutions for different uses, and for web and on-screen uses, there is often a “web” or “email” setting, which downsamples images to the ideal resolution for on-screen use.

As you can see, when it comes to projection, more is not always better. Here's a real-life example.

Ranger Jack builds a program with a hundred or more high resolution images. It works just fine in the office on the new computer.

Jack takes it out to the campfire and presents it through the laptop that is connected to the outdoor projector. Suddenly, he has problems. First the images load very slowly. Then the computer starts crashing all the time. Jack assumes he needs a newer, faster computer to handle the task. But before his supervisor budgets for a new computer, she tells Jack to bring the resolution on each photo down to 96 ppi and try the show again. Amazingly, the show now works flawlessly.

A really sharp projector that can project a high definition (HD) image of 1920 x 1080 pixels does quite nicely with a little over two megapixels. If you are supplying it with much more, the extra data is not only wasted, but it slows down and may crash the system. Don't get carried away with resolution for projection. Save your high resolution images for printing.

When you are buying a camera, just remember there's more to it than the megapixel count. The same number of pixels can be captured on a different size chip in different cameras, yielding different size pixels. There are many other factors to consider that are beyond the scope of this module. So read the reviews and do your homework when it is time to buy equipment.



Image at ±96 ppi



Image at ±150 ppi



Image at 250+ ppi

UNDERSTANDING FILE FORMATS

In addition to understanding resolution, you will want to recognize the common file formats for images, including: TIFF, PICT, EPS, GIF, JPEG, PSD, PNG, and PDF. These acronyms are defined below.

- **TIFF (Tag Image File Format)**—The most versatile, reliable, and widely supported bit-mapped format. Good for print use. Uses lots of memory.
- **PICT (Picture)**—The Macintosh® standard format for graphics and drawings that are cut or copied to the clipboard
- **EPS (Encapsulated PostScript)**—The standard format for storing high-resolution PostScript illustrations
- **GIF (Graphics Interchange Format)**—Intended mainly for on-line transmission
- **JPEG (Joint Photographic Experts Group)**—Data compression for images and a file type. Compression loses data. Not recommended for high quality print uses.
- **PSD (PhotoShop® Document)**—A format that can only be opened and edited in Photoshop. It can preserve layers, channels and paths in a form that can be edited.
- **PNG (Portable Network Graphic)**—Uses data compression for both print and projected images. Allows for transparent image backgrounds like GIF files, but also allows for subtle color gradation like JPEG files.
- **PDF (Portable Document Format)**—Images can be saved from Photoshop as PDF files that can then be viewed using Acrobat Reader. JPEG compression can be used.

The National Park Service's Harper's Ferry website www.nps.gov/hfc is a good reference for digital file types and offers "Suitability Standards for Digital Photographic Images."



VIDEO

Many digital cameras offer the ability to shoot short video segments and some Districts have video cameras available. Creative interpreters are doing some interesting things with video. Remember, a short video file can be used within PowerPoint, so it is not necessary to create a full-scale video production. You can simply have a PowerPoint presentation where some of your pictures move. Although video production is well beyond the scope of this module, the number one tip for interpreters considering video is to use a tripod. A steady camera will go a long way toward giving you a professional

result. You will find Windows Movie Maker already loaded on most park computers. It will give you some basic tools to trim and combine your video clips.

Successful Projector Use

With the advent of presentation software such as PowerPoint and the vast resources of the internet, computer-generated, projected images have become easy to create. Today's laptop computers, coupled with many of the common software packages and a digital projector, offer a powerful tool to the interpreter.

You will hear people speak of an "LCD projector" since it was the first type of digital projector widely available. Most interpreters really don't care what technology is inside their projector — it could be LCD, DLP, CRT or something new. So we'll use the term digital projector. You may also hear "video projector" but we are still talking about the same thing. Most projectors are able to show either TV, video or computer output. And most have a variety of inputs — just match up your computer, projector and cables.

Digital projectors can be very expensive depending on the features and options of the projector. A projector designed for an office boardroom setting may not be the best choice for a campfire center. Some models offer interchangeable lenses, and a longer focal length lens may be what you need at a campfire center. Projectors vary in brightness, too. Light level drops off quickly over a distance. How much light you will need will be determined by the size of the image you are projecting and how close the projector is to the screen.

Brightness is measured in ANSI (American National Standards Institute) Lumens. Often you are projecting at an outdoor campfire center before it is quite dark, so you will probably want the brightest projector you can afford. A brighter image can also have more of an impact on your audience.

Since there are literally thousands of laptop configurations, models, and resolutions, we cannot address how each computer works with each projector. When developing a program using computer technology, just remember there is no substitute for reading instruction manuals, testing, and a great deal of hands-on practice. It is



Know your equipment in case you need to troubleshoot in front of your audience.

especially important to remember that changing projectors or computers results in an entirely different system. Just because your presentation worked on one computer does not mean it will work on a different system. Practice on the actual equipment you will use. Few things will destroy an interpreter's credibility faster, or make an audience more restless, than to be forced to watch you fumble with your equipment.

When practicing with projectors, you may be surprised that it doesn't project the same color balance or even the same range of brightness as your computer's screen. Sometimes what looks fine on your computer looks quite awful on the big screen.

General things to look for when preparing:

- **Most projectors have a warm-up time**, and though an image may appear very quickly, the full color and brightness may not be apparent for a few minutes.
- **In most cases, you need to turn on the projector BEFORE you boot up the computer.** This forces the computer to sense the presence of the projector, so it will supply the video signal to the cable. The downside of this is that the audience can see you open the file. Experienced presenters mask the lens until they are on their first slide, so as to avoid distracting the audience with extraneous images. A piece of folded cardboard or even a piece of paper will suffice. Keeping the lens cap on can be an option, but might result in overheating of the projector, so use this with caution. A "best practice" is to save your PowerPoint as a presentation (.pps or .ppsx suffix) in addition to a PowerPoint file (.ppt or .pptx suffix.). When you double click or open the presentation file, it opens as the first slide in your presentation. See the section on presentation software for details.
- **If your presentation includes an audio component, don't forget that you need an audio cable and speakers.** Projectors do not include this, and high-res monitors also need an audio cable.
- **If you or one of your presenters use a Mac, they need a Mac-specific adapter to go from the Macintosh output to the projector cable.** You should plan for this in advance, particularly in rural areas. They are not widely available except through Macintosh dealers.
- **Many presenters put in a black or neutral slide before the beginning and after the end of a program**, to prevent the audience from seeing the program view in PowerPoint.
- **At the end of a program, when you turn off the projector, allow it to go through the complete cool-down cycle.** It will shut off automatically a few minutes after you turn it off. This cools the bulb in a controlled manner, and lengthens its life.
- **Experienced presenters usually have a spare projection bulb with them, "just in case."**

USING YOUR PROJECTOR CORRECTLY

- Turn on projector BEFORE computer.
- Let fan cycle complete it's cooling cycle before you unplug projector.
- When things don't work, turn everything off and start over.
- Read the manual at least once before you use equipment in public.

Fuzzy Images

Of course you would not deliberately use a blurry image in your program, so if the picture is out of focus, it could be the way the projector and screen are working together. Projection screens usually hang vertically, and projectors are usually tilted up toward the screen. When the projector aims at any angle other than exactly straight across to the screen, there will be some distortion. Generally the top of the image is wider than the bottom so the term “keystone” refers to the shape of the image. While you may not think the shape of the image is a big deal, this also affects focus. In a keystoneed image either the top or the bottom will be in focus, not both.

Digital projectors usually have either a fixed or adjustable keystone factor. **A fixed keystone projector needs to be placed at about an eight-degree angle lower than the center of the screen.** Adjusting the screen by pulling the bottom of the screen back toward the wall (changing the vertical plane of the screen) can also prevent the keystone effect. This can allow for more variation on placement of the projector. Some projectors have an adjustable feature that allows you to electronically correct this distortion without having to worry about screen placement.

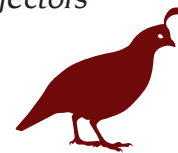


Keystone is when your image appears wider at one end and narrower at the other. This is a common problem with digital projectors. Some units can compensate for this electronically. Otherwise, adjusting the projector location or the screen orientation can correct the keystone problem.

Maintain Your Equipment

Maintenance for all A/V equipment is important. For digital projectors it is critical. Clean or replace the filter regularly according to the manufacturer's instructions, as the screen filter can quickly become dirty (especially in a park environment). A clogged filter will cause your projector to overheat or to shut down, and can shorten lamp life. Even worse, the dust that collects on your filter will eventually make its way into your projector and deposit itself on the projection panels. Once this happens, you will have colored spots in your image, and your projector will require professional cleaning. Many digital projectors use lamps that cannot be changed in the field, so they may have some system to warn you when you are nearing the end of the life of your lamp. Again, read the manual and know your equipment.

If the digital projector will not turn on, do not panic. Check the filter door(s) to be sure they are closed completely. Most projectors have a safety switch associated with these doors, which prevents the unit from operating unless the door is properly secured.



PRESENTATION SOFTWARE

There are many different software packages that can be used for interpretive presentations. Each of them works a little differently and offer features you might not find elsewhere. Keep in mind we work for a big department with literally thousands of computers. This requires some degree of standardization. **Our department standard is Microsoft Office®, so for presentations, Microsoft PowerPoint© is the preferred tool.** The software is widely available on department computers and support is readily available.

Don't plan to use an alternative software package for your presentation. You probably won't find it on a state-issued computer and you may not even be permitted to install it. Fortunately, you can do a great deal within PowerPoint and it should work on any CSP computer.

Although all our computers should support PowerPoint, they won't all have the same version. Because there are different versions of software, we recommend that you save your PowerPoint presentations in the Office 2003 format, with the filename suffix .ppt. To do this, choose "save as" and in the option for "file type" click on the arrow and select the Office 2003 option. The default "new" PowerPoint file type has the suffix ".pptx" and may not be usable on earlier versions of PowerPoint. However, we still strongly recommend that you test your presentation on the computer that you'll actually use. Some PowerPoint 2010 presentations when exported to earlier versions tend to look dark and murky compared to the original, and may need tweaking for use by others.

Another compatibility issue that may arise, even when moving your presentation from one computer to another, one might be subtle (or not so subtle) changes to fonts. Even if you have the same fonts on both computers, this may happen, because “newer” computers have newer versions of familiar fonts, and this may change spacing and alignment in strange ways. This is another reason to always preview your presentation on the equipment you’ll be using whenever possible.

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Computers are magnificent tools for the realization of our dreams, but no machine can replace the human spark of spirit, compassion, love, and understanding.

Louis Gerstner, CEO, IBM

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PowerPoint Tips & Tricks

Microsoft PowerPoint was created for business presentations, not for interpreters, but it is an amazingly versatile program that can be used quite effectively. We cannot give you a detailed look at PowerPoint tips and tricks here, but we can highlight some of the most important basics.

- **Keep the flashy options to a minimum.** Have you ever sat through a presentation where there were multiple animations, crazy transitions, garish colors, sound effects, and clip art? These can annoy the viewer, and often draw attention to the technology, not the message. Remember, technology is just a tool, and should not be confused with the program content. Use one or two fonts and keep the transitions consistent and simple.
- **Avoid using specialty fonts if you might be moving your presentation to another computer.** Virtually everyone has Arial, Times New Roman, Tahoma and a few others, but not everyone has Herculaneum or FangSong, for example. If a font is missing, the computer may display them in Courier or something with different spacing that will make your slides difficult to read.
- **Choose a background theme.** Microsoft has provided dozens of built-in graphic themes in PowerPoint. Unfortunately, most of the themes are either business oriented or otherwise unsuitable for interpretive programs, but there are neutral backgrounds and subtle designs that don’t distract the viewer, and many themes are available commercially. You can also create your own themes and backgrounds. Generally, be conservative when choosing a theme. In any interpretive program, your content should be the primary object, not colors or slide designs or fonts.

- **Don't load the screen with text.** 15 to 25 words is more than most people want to read, especially if they are on vacation or in a recreational setting. *Don't read what's on your screen to your audience.* If you can tell them about it, remove the words. If the text is large enough for them to read, then be silent.
- **There's no magic time for a slide to remain on screen,** but if something is on screen for more than 45-60 seconds, you might ask yourself why.
- **Frame your photos.** Photos with varying colors along the edges, such as a long shot of a meadow with a green foreground and blue (sky) background sometimes contain colors that seem to blend into the slide background. This can be distracting to some viewers. You have options in PowerPoint to put a line around a photo or give it a shadow effect to minimize this. Click on a photo, and then right-click your mouse to see the formatting options for a photograph or other graphic element.
- **With a bit of imagination, you can easily create subtle and effective visual tricks.** For instance, an effective transition when working with historic topics is to have two identical slides with an image of an historic house or landscape, but convert one of the photographs in a slide to black & white or sepia tone. When you dissolve from the color slide to sepia slice, the color seems to melt away, a subtle but visually arresting effect that can help people imagine the past. You can probably think of other tricks to help your audience get into the spirit of your topic.
- **In PowerPoint 2010, embedding a YouTube© or other video is much simpler than in previous versions.** This can help you avoid switching between PowerPoint and a web browser and make your overall presentation much smoother for the audience.
- **To avoid the possibility of your audience seeing the slide sorter view in PowerPoint, you can save your file as a "presentation"** (the suffix is .pps or .ppsx rather than .ppt or .pptx) When you double click on the file name, it will open in the full screen mode automatically, but you cannot edit these files, so save in both versions.



- **If you bring in your presentation to the projection location on a flash drive or if it's on a shared drive, always copy it to your hard drive first!** Then use the version that is on the computer's hard drive when you give your presentation. Running a presentation from an external device will slow things down, make transitions clunky, and may even result in a crash.
- **If you're traveling to a new venue, ALWAYS carry a grounded plug strip and a 25- to 50-foot extension cord.** If you have it, you probably won't need it, but if you don't, you will!

Presentation Control

You may occasionally see presenters behind their laptops as they present a program. If you can, stand in front of your audience and face them (rather than the laptop) during an interpretive presentation. A wireless mouse will let you change slides remotely. A presentation mouse often includes a laser pointer in the same handheld unit. The cost is slightly more than a standard mouse, but it adds very little to the cost of the overall package when you are buying a laptop and projector.

Presentation mice come in two basic types: IR (infrared) and RF (radio frequency). IR presentation mice are more common and slightly less expensive. However they rely on a beam of light passing from the mouse to a receiver at the computer, so you must point them at the computer, and a visitor standing in the wrong place could block them entirely. An RF mouse uses radio waves so they don't need to be pointed at the computer and readily pass through obstacles.

FINDING PHOTOS

Interpreters are always looking for just the right images to illustrate a program. Hopefully you will have the opportunity to get out and shoot many of your own. Other photographers will often share their images with you, but be sure to get permission (more on that later). Most park units have literally thousands of old 35mm slides. Don't overlook this valuable resource. We have some beautiful images that may be 50 years old, but still look great. If you don't have access to a slide scanner, you can take them to almost any store that offers photo printing services and have them scanned to disc for a reasonable price. The Department's Photo Archives is another source for some great images at little or no cost to you. Lastly, never, ever take photos off the internet for use in your program without written permission from the photographer.

PROJECTION SCREENS

Projection screens are available in two basic types: front or rear screens. For most interpretive presentation purposes, a front projection screen is the obvious choice, simply because it can fit into any room without the need to build an elaborate rear projection booth.

If you have the luxury of a rear projection system, there are definite advantages. A rear screen permits the use of visuals in near-normal room lighting, your audience can take notes, and you can maintain eye contact. The rear projection system allows the interpreter to walk in front of the screen without casting shadows. Locating projection equipment in a separate room minimizes noise and distractions.

Be careful with rear projection. The audience could be watching your show when suddenly all the pictures look reversed to them. If you are showing a bug or a leaf, it might not matter. But when you get to a trail sign or a well-known rock formation that is backwards, it matters a lot. Many projectors have a setting that will automatically mirror the image. Again, know your equipment and figure this out well ahead of time.

The type of screen at your park, if properly maintained, is probably the one you will be using for a long time. In some parks, the campfire screen is made of wood or a similar material covered with a flat white paint, while other parks may have an electric, roll down, beaded screen. The screens will certainly vary, so once again, know your equipment.

The in-house constructed, painted screens, while not entirely desirable, can be easily repainted. Quite often, once a fabric screen is marred by graffiti, it must be replaced. Glass beaded and rear screen cleaning should be attempted with great care because the beads or projected coatings can easily be damaged. **Even “cleanable surface” screens should be exposed to very light pressure using only mild soap and water. Use of chemical cleaners may destroy their reflective properties.**

SOUND SYSTEMS

The ideal sound system makes speech and music clearly and comfortably audible, yet never draws attention to itself or its operation. Sound systems can be very basic, consisting of just a microphone, amplifier, and speakers. For larger applications, you might need a fairly complex sound system, including a CD player, amp/mixer, speakers, microphones, transmitters and lots of cables. Become familiar with your particular equipment's operation, functional status, and its care and maintenance. Let us now turn our attention to a basic component of the sound system — the microphone.

Microphone

The sound system begins at the microphone, where acoustic sound is converted into an electrical signal. A microphone is connected to an audio mixer, where the input signals are amplified, adjusted and combined to produce a single output signal. From the mixer, the output signal is sent to a power amplifier. The amplifier strengthens the signal further, making it powerful enough to drive loudspeakers, which convert the microphone signals back into acoustic sound.

Every interpreter must know how to use a microphone smoothly and professionally. Microphones and their associated sound systems amplify your voice and are useful for several reasons. You will hear some interpreters say their voices are strong and they don't need a microphone. This is a mistake. Microphones keep you from overtaxing your vocal cords, permit easier listening for the audience and—especially when you are moving around—they ensure that everyone can hear you. A microphone even lets you drop your voice to a whisper for dramatic emphasis yet still be heard in the back row.



Using a microphone makes it easier for members of your audience to hear and understand you.

PREVENTING FEEDBACK

- Keep the microphone BEHIND the speakers. A microphone in front of a speaker will create feedback.
- Locate your speaker(s) either forward, above or beside your performing position.
- Use a microphone stand to control the placement and orientation of the microphone.
- Turn down the volume.
- Sometimes a change in tone or equalization helps.
- Avoid the location where feedback occurred.
- Use as few microphones as possible — the volume level of a system must be turned down for every mic added in order to prevent feedback.

Microphones are available in wired and wireless versions with either hand-held or clip-on capabilities. The wireless clip-on, or lapel microphone, is preferred for its convenience and the full freedom of movement. A miniature, clip-on microphone connects by a short cable to a small transmitter worn on the belt or elsewhere. A special receiver picks up the signal and feeds it to the mixer. Generally, a separate receiver/transmitter is needed for each microphone used.

The proper location of the clip-on microphone is about six inches below the interpreter's chin; the clip allows easy attachment to most clothing. Be sure to anticipate movements that may rub against or obstruct the microphone.

If you are using a wireless microphone remember that it runs on batteries. Weak batteries in your wireless transmitter will usually give you a distorted signal long before it quits working. Remember to turn it off after your program to save the battery and be sure to change out those batteries before they ruin your program. Always have spare batteries on hand.

MICROPHONE PROBLEMS?

No sound?

- Make sure transmitter and receiver are both on.
- Check the battery.
- Check that mute is not selected.
- Ensure cord is securely plugged in belt pack/control system.

Cuts in and out?

- Check that all cables are inserted securely.
 - Make sure belt pack antenna is hanging straight down and is not twisted.
 - Move belt pack to your back.
 - Check the battery.
 - Avoid the location where interruption occurred.
-

A wide variety of wired and wireless hand-held microphones is found throughout the parks. When using a hand-held microphone, get close to it; the most common mistake is having it too far from your lips. Generally sing or speak across it rather than directly into it to reduce the popping caused by sudden breath blasts. The microphone should be

positioned in front, and slightly to one side, of the mouth. The user must stay within the acceptance angle of the microphone to avoid unwanted changes in volume. Using proper techniques, and perhaps an accessory wind screen, will solve most popping problems. Speaking of wind screens, be sure you have one up to the job if you are working in a windy venue.

If you are having a guest speaker or a panel discussion, use additional microphones. Instruct your guests on how to use the microphones properly. Be aware of chains or necklaces that can hit the microphone and cause annoying disturbances.

Generally, you do not need to turn the volume up as high as you think; preplanning the volume setting is the professional approach. You may need to change your usual volume setting when you have unexpected ambient noise, a larger or smaller group than normal, or guest speakers. Ask the audience or have a partner signal you when the sound is comfortable. Sound amplification is usually limited by the feedback condition and not by the power of the amplifier.

Feedback is that tortured howling that results when the output of your speakers gets fed back into your microphone and is amplified and sent back to your speakers in an endless loop. There is no complete cure for feedback. If the volume of any microphone is boosted high enough, it will eventually cause feedback. There are a number of measures you can take to reduce feedback.

Assistive Listening Systems

All visitors need the ability to fully participate in interpretive programs. Assistive listening systems provide the opportunity for individuals with hearing loss to actively take part in our interpretive presentations. Assistive listening systems include portable FM wireless systems, audio induction loop systems, AM systems, infrared systems and hard wire systems. For further information on the different types of systems and their uses see *All Visitors Welcome* (California State Parks, 2003, p. 17) for the advantages, disadvantages and possible applications.

More About Audio

There is a great diversity of audio equipment available to augment any sound system. We can't even try to address it in this handbook. Here is some equipment that you might want to research as you develop your program.

- **Mixer:** A mixer controls the audio inputs going into your sound system. It can switch between inputs, control the volume of each input, and control the outputs to which each input is sent.
- **Equalizer:** An equalizer fine-tunes your sound system's frequency response to a given location. Use it to adjust bass, treble, and midrange to provide the most pleasing sound and to minimize feedback.
- **Reverberation (reverb):** Reverb is sometimes used to provide artificial echo effects, but its real purpose is to provide extra depth and clarity to your sound.

If you have sound embedded in your program you may want to connect the audio output from your computer to the campfire center sound system. There are a variety of wireless devices that could be used to make this connection. **Remember that adding more equipment increases the chance of something going wrong.** A better choice might be the simplest: use a long cable rather than a wireless link, or plug in a set of powered speakers to your computer and avoid tying into the main sound system completely. Powered speakers have built-in amplifiers. The more commonly used non-powered speakers do not. You will want a powered speaker for portability or to use in cases where an amplifier would be expensive or inconvenient.

FLIP CHARTS

Investing a lot of money in high-tech visual aids and equipment will not make your presentation better. Remember, the purpose of using visual aids is to enhance your presentation, not upstage it. While high-tech computer-generated presentations are great, do not overlook the humble but effective flip chart. A flip chart is still a portable, inexpensive, and useful presentation tool with many applications for interpretive programs.

Making "prepared" flip charts can take a considerable amount of time. Make sure you start preparing your charts early enough so you can review them and make any changes or corrections beforehand. If you cannot print neatly, ask someone who can to prepare them for you. A poorly prepared flip chart can be very distracting. If you have access to a large format printer you can create very professional flip chart pages on a computer.

Prepare flip charts ahead of time by lightly writing directly on each page any notes you need for your presentation; the audience will not be able to see your notes if you use pencil. You may also write notes for what you have planned on the next sheet. This will allow you to properly introduce what is next. Remember, this is an interpretive program, not a formal educational lecture. Your flip chart pages should be easy and enjoyable to read.

LIGHTING

Lighting is often the last thing we think of when planning a presentation, and yet it may make or break your program.

When using hand-held items, make sure the items are well lighted. General lighting is accomplished with flood lamps. More direct and intense lighting can be accomplished with spot lamps. Dramatic and special effects can be accomplished with theatrical stage lighting. This type of lighting can be expensive, and prone to the negative effects of weather and vandalism, especially if left outdoors for extended periods. Something as minimal as a single spot light can add dramatic effect to highlight objects and people, and to focus attention. A simple alternative to the more expensive professional stage lighting is to use an old slide projector with a blank, black slide with a pinhole opening. Experiment with the size of the opening needed for the distance from the projector.

Lighting considerations for visitors with hearing impairments should also be recognized and provided. If these visitors have sufficient lighting, they are often able to lip-read, or they may be watching the oral or American Sign Language (ASL) interpreter. If the room or area is too dark, a spotlight on you and/or the sign language interpreter works well. Consult with your Americans with Disabilities Act (ADA) specialist or your supervisor, and refer to *All Visitors Welcome* (Porter, 1994) for more details and suggestions.

VIDEOCONFERENCING EQUIPMENT

Videoconferencing equipment has become fairly common, particularly in schools. This capability is at the heart of the State Parks PORTS (Parks Online Resources for Teachers and Students) program (see <http://ports.parks.ca.gov>). A live two-way video connection is a powerful interpretive tool bringing park specialists into classrooms everywhere. PORTS is much more than a videoconference. All PORTS instructional units are built to support academic content standards and feature online resource materials. Find out where this type of equipment is available in your District and learn how to operate it.

11.2 PLANNING

SELECTING APPROPRIATE EQUIPMENT

Karen Beery, State Park Interpreter III, recently summed up a general discussion of “traditional” media vs. “new” media when she wrote,

We could probably trace the roots of this type of discussion back many centuries. For example, is moveable type better than calligraphy; is photography better than painting; is film better than theatre; is recorded music better than live performance; etc. The newer technologies always have an impact on the earlier technologies in some way. However, I think the challenge for us as interpreters is to explore how we can best use the incredible number of tools and techniques that are now available. We should be striving for excellence of design and interpretation regardless of the tools we are using. If it doesn't enhance, reinforce, or clarify your message, don't use it.

MECHANICS

Proper Operation

It is essential to use common sense, good practices, and a professional approach to maintain valuable A/V equipment. Many staff members rely on these expensive tools to assist in their program delivery. Equipment that does not function correctly detracts from the visitors' experience and is certainly inconvenient for the interpreter. A/V equipment is not cheap to purchase, repair, or replace.

TAKING GOOD CARE OF YOUR TOOLS

- Read the instruction manuals.
- Use the equipment for its intended purpose. Do not force controls and mechanisms.
- Perform periodic maintenance and safety inspections.
- Keep equipment clean, and protect it from environmental hazards.
- Properly store equipment.
- Remove batteries from equipment when not in use.

Batteries

Batteries are used in all types of portable video, audio, and computer equipment. Understanding how to take care of batteries can make the difference between interpretive programs that fail or interpretive programs that succeed. The best advice is to **always have a backup available because all batteries are prone to failure at the worst possible time.**

Store your batteries in a cool place, but avoid the refrigerator. Batteries might last a bit longer if stored in the refrigerator, but cold batteries can cause condensation problems and they do not put out their full power until they warm to room temperature.

All batteries eventually die and must be disposed of. DON'T throw them in a wastebasket. They are not permitted in landfills and must be disposed of properly. Check with your maintenance chief about where to put them. Whenever possible, use rechargeable batteries to minimize the number of waste batteries.

To ensure quality performance, routinely clean the battery contacts in the equipment and the charger. Use a cotton swab saturated with rubbing alcohol (isopropyl alcohol), to clean the contact points on the battery and the charger. Most charging problems are caused by dirty contacts on the battery or charger. Speaking of cleaning, do not forget about all of the various pieces of equipment that have lenses.

Cleaning Lenses

Cleaning lenses is not a difficult task. It is a simple matter of using isopropyl alcohol or a photographic lens cleaning solution along with lens cleaning tissue. Other cleaning materials may leave lint or other residue on the glass. Blow the dust off the lens with a dry air gun or "puffer bulb." Apply the cleaning solution to the lens cleaning tissue. Avoid applying the solution directly to the lens surface. Wipe the lens in a spiral motion, beginning in the center of the lens and ending on the outside. If necessary, repeat the above steps until the lens is clean and free of streaks.



It's important to take good care of park equipment so that it may be used for many years.

As stated earlier, proper operation of equipment is key to successful A/V presentations. Knowing how the equipment functions, the safe use and storage of the equipment, and how to make repairs are all essential for program success.

CHANGING LOCATIONS

If you are taking your interpretive program to a different venue, do not forget to bring an extension cord supplemented with a power strip. An ungrounded plug adapter may also come in handy because some facilities still do not have three-prong grounded outlets. Resist the urge to plug some of your equipment in one outlet and the rest in another outlet. When electrical equipment is connected together it must all be on the same circuit or you run the risk of electrical interference. For everyone's safety, tape the power cord and cables to the floor to prevent tripping. (Thank goodness for duct tape!)

■ ■ ■

It's all about knowing your message, knowing your audience, and choosing the media that will communicate best with those variables.

Joanie Cahill,

Regional Interpretive Specialist, CSP

■ ■ ■

11.3 INTELLECTUAL PROPERTY

Our department has very high standards regarding intellectual properties. You may be held personally liable if you violate department policy. It is important to understand this complex and rapidly evolving area of law. It is not always as simple as it might seem. There are situations where the department owns a piece of art, but does not own the rights to use a photo of that art. Take the time to consult with knowledgeable people so you are not in violation.

Crediting the creator is not the same as permission. Acknowledging the photographer is nice but you will need, in writing, explicit permission to use another's work.

You may want to show a commercial film on some occasions. In order to do this, you must obtain a formal license for that use. It doesn't matter whether you own or rent the DVD.

Anything beyond your family and immediate circle of friends is defined as a "public performance" and a formal license for use is required.

How can you avoid copyright worries? Follow the guidelines below and when in doubt do the research needed to gain a clear answer. The department's position on copyright and intellectual property rights is included at the end of this module in Appendix A.

USING YOUR OWN WORK

Using your own illustrations or photography in your programs is ideal. But think twice before you sell it to a local postcard vendor or book publisher. If you shot the photo on state time, or if you used a state owned camera, or even if you used special access or knowledge you obtained in the course of your employment to get the photo, it may not be yours. Check with your supervisor before considering anything like this.

CAN I USE THIS IMAGE?

Definitely

- Images owned by California State Parks
- Images licensed to the department for your use
- Images that you have created yourself from original art or photos (as long as releases are on file for any people who are recognizable).
- Images that you have obtained appropriate permission to use

Maybe

- Image created before modern copyright laws
- Images owned by the U.S. Government
- Images copied from books

Do Not Use

- Images from a website obtained without express permission

WHAT'S AHEAD

The way you treat, maintain, and operate A/V equipment greatly affects the quality of any interpretive program. In the next module, we will address in greater detail how to evaluate whether or not you are presenting effective and informative programs.

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APPENDIX

Prepared by Wil Jorae and Laura Reimche. California State Parks, Sacramento, CA 2002

CALIFORNIA STATE PARKS INTELLECTUAL PROPERTY RIGHTS

Copyright

“Copyright is a form of protection provided by the laws of the United States (title 17, U.S. Code) to the authors of ‘original works of authorship,’ including literary, dramatic, musical, artistic, and certain other intellectual works. This protection is available to both published and unpublished works.”

However, for a work to be entitled to protection, it must first be fixed in a tangible form.

Copyright law protects artists, giving them sole right to reproduce their works. It also protects the artist or person who owns copyright to said material against unauthorized use of their work by others. Use of non-owned, copyrighted material requires the expressed permission of the artist or owner of intellectual property rights. Furthermore, only the creator or person who owns copyright can create or authorize the creation of “derivative works” and/or “compilations.” The Library of Congress defines a derivative work as “a work that is based on (or derived from) one or more already existing works.” Compilations are collections of preexisting materials or data, selected, coordinated or arranged so that the resulting work as a whole is a new original work of authorship.

Before using a work that you did not create, the status of the copyright should be determined, and appropriate permission to use the work should be obtained. This can take the form of a formal license agreement or a simple letter granting permission to use the work for the requested purpose.

How to Determine the Copyright Status of a Work

There are several ways to investigate whether a work is under copyright protection:

1. Examine the work to determine if a copyright notice or disclaimer is affixed to the work.
2. If the work is from a published book, look for photo credits in the appendix or in the caption under the image for source, collection, artist, photographer, and date.
3. If no identification is given with the image, contact the publisher and/or the author. The author or author’s estate can usually be contacted through the publisher.
4. Examine the subject and content of the work and contact museums, libraries, or archival institutions that hold works of similar subject matter. These types of institutions may provide referral to additional sources.

5. Have the U.S. Copyright Office perform a search. The Copyright Office publishes a Catalog of Copyright Entries, organized by type of work. The Copyright Office staff will also search its records for a fee.

Determining the duration of a copyright can be a very complicated and difficult process, depending on when the work was created and who created it. However, under current law, if a work was created prior to 1922, it is probably in the public domain, with any copyrights that once existed having expired. If a work is determined to be in the public domain, no permission for use is necessary. If a copyright holder is identified, permission for your intended use should be sought and documented.

Good Faith Effort

If through all or some of the above methods you are unable to locate the copyright holder of the work and have exhausted all “reasonable” possibilities, then you have made a “good faith effort” to determine the holder of the copyright. All correspondence and notes obtained during your investigation should be retained with the project file.

Fair Use

Copyright law does permit the use of copyrighted images under the concept of fair use. The concept or defense of fair use allows for the taking of portions of copyrighted work for limited purposes without requiring the copyright owner's permission. However, there is no clear definition of fair use in the Copyright Act. Section 107 of the Copyright Act (11 USC 107) permits the use of copyrighted material for parodies, news reporting, teaching, scholarship, research, and for criticism or commentary under some circumstances. But, this permitted fair use is determined in large part on a case-by-case basis through weighing the following factors:

1. Purpose and character of the use (i.e., Is it commercial? Controversial? Does the secondary use supersede the original work?)
 2. Nature of the copyrighted work (i.e., Is it published? Regularly sold/licensed for profit? Is it highly creative - factual or fiction?)
 3. Amount and substantiality of the portion used (Quantitatively? Qualitatively?)
 4. The effect on the potential market for the copyrighted work (i.e., Is the market impaired? Are licenses reasonably available? Is the use repeated and long term?)
- Thus, the Copyright Act does not provide a specific exemption for copies made to advance interpretive, educational, and scholarly objectives.

A question raised frequently is, does the use of copied images in an interpretive or campfire program fall under the interpretation of fair use. This question does not have one answer other than, “it depends.” Congress has endorsed guidelines that provide some assistance in deciding whether a particular use constitutes fair use

in the educational context. However, even these guidelines are aimed at classroom teaching situations. Moreover, compliance with these guidelines has influence on the interpretation but is not binding on courts. Thus, consent for intended uses should always be sought where possible. The educational fair use guidelines include, but are not limited to, the following directives:

1. Avoid unfair exploitation, even with noncommercial uses;
2. Do not copy any more than necessary for intended use;
3. Provide notice of copyright and credit where possible;
4. Use is more defensible if it is spontaneous (no chance to seek permission);
5. Stay within the page limits for copying set out in the guidelines (entire work if it is less than 2,500 words, 1,000 words, or 10 percent of the work);
6. Use a single copy where possible (overheads are better than handouts); and
7. Comply with the brevity, spontaneity, and cumulative effect test outlined in these guidelines.

Identification

Any duplicate images captured in electronic or standard photographic form should have the actual source document in the image itself or on the image border, back, slide mount, etc. Ideally, the source listed would be the copyright holder for a particular image. Minimally, the source should be the magazine (name and publication date), book, or other publication, from which the image was copied. If you have doubts as to whether or not the intended use falls within the guidelines of fair use, please contact CSP's legal office for advice. Additionally, the image should be marked, "For Reference Use Only."

When copying images copyrighted to California State Parks, one should transfer the following information from the original to the copy image (per forthcoming Departmental Notice on Photographic Material Documentation):

1. Original photographer's last name and first initial
2. Park name or location
3. Date photograph was taken (as specific as possible)
4. Primary subject matter (determined by original photographer)
5. Names of individuals, if any, depicted in an image should be noted and kept with copies of the original photo releases on file.

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MODULE 11
AUDIOVISUAL

SELF ASSESSMENT

Answer each question in the section below before reviewing the material in *Module 11—Audiovisual*. The answers are not provided. Check your answers with your colleagues and as you read *Module 11—Audiovisual*. Items from the self assessment may be reviewed and discussed in class.

- 1) An interpreter's most underutilized piece of equipment is:
 - a) digital projector
 - b) copy machine
 - c) camera
 - d) copy stand

- 2) It is always important to shoot digital images with the highest resolution possible.
 - a) True
 - b) False

- 3) The brightness of a digital projector is measured in what units?

- 4) What is the most common mistake when using a microphone?

5) Why would you put a black background behind an item you are photographing?

7) What is the preferred presentation software in the Department? Why?

8) What is a digital projector? What can it project?

9) When using a projector, what is keystoneing?

10) Name three advantages of using a flip chart over other more modern presentation techniques.

1. _____

2. _____

3. _____

11) To control feedback from a microphone you should (Circle all that apply.)

- a) Turn volume up
- b) Move microphone away from the speakers
- c) change the tone
- d) Place speakers behind you

13) Lenses can be safely cleaned with window cleaner and paper towels.

- a) True
- b) False

14) What is a “Public Performance” and why would an interpreter care?

15) Always remember to credit the photographer and the website where you get your images and you will not run into problems.

- a) True
- b) False

16) What is the “rule of thirds” in photography, and why should you use it?

WORKBOOK LEARNING ACTIVITIES

Now that you have completed the self assessment questions, review the material in *Module 11—Audiovisual* to confirm your answers. After reading the module, move on to the workbook learning activities, which will assist you in developing your skills.

To help you review and apply the material covered in *Module 11—Audiovisual*, a selection of review questions and/or activities is provided. Again, no answers are included. Use the material from the module, outside sources, and your colleagues to help you complete the activities and answer the questions. There may be more than one right answer. Use the questions and activities to generate discussion about the material. Be prepared to discuss, perform or demonstrate your answers in class.

- 1) Describe when you should use A/V equipment.

- 2) When making a digital presentation, which should you turn on first, your computer or your projector?

- 3) Complete this sentence: Visual aids add to the program, but all programs _____

- 4) What can happen when a projector fan is turned off before it completes its cooling cycle?

- 5) What is a “.pps” file, and when should you create and use one?

6) What are three types of lighting you might use in a campfire A/V program?

1. _____

2. _____

3. _____

7) Name three types of images you can definitely use in a park campfire A/V program.

1. _____

2. _____

3. _____

8) Who is responsible for maintaining the A/V equipment at a park unit?

9) What is videoconferencing equipment useful for?

10) Describe two ways you can change a 3" x 5" picture into a large enough visual form to use during a program.

1. _____

2. _____

Take it to YOUR Park

Answer each question with the information specific to your park. You will have to conduct some research in order to answer each question. Use the answers as a guide for beginning your career in California State Parks.

AUDIOVISUAL

Park name: _____

- 1) Develop a list of all the A/V equipment available in your park.

- 2) Based on the above inventory, create a list of the other equipment that would be beneficial to have.

- 3) Using one of the appropriate program ideas you created in the previous modules, indicate how you could incorporate or use A/V equipment to improve the program.
