

## Output Devices

Presentation of the audio and visual components of the multimedia project requires hardware that may or may not be included with the computer itself, such as speakers, amplifiers, projectors, and motion video devices.

Speakers with built-in amplifiers or attached to an external amplifier are important when your project will be presented to a large audience or in a noisy setting.

The monitor required for the development of multimedia projects depends on the type of multimedia application being created, as well as what computer one is using. A wide variety of monitors is available for both Macintoshes and PCs. High-end, large-screen graphics monitors and LCD panels are available for both, and they are expensive.

When one needs to show the material to more viewers than can huddle around a computer monitor, one will need to project it onto a large screen or even a white-painted wall. Cathode-ray tube (CRT) projectors, liquid crystal display (LCD) panels, Digital Light Processing (DLP) projectors, and liquid crystal on silicon (LCOS) projectors, as well as (for larger projects) Grating-Light-Valve (GLV) technologies, are available. CRT projectors have been around for quite a while—they are the original “big-screen” televisions and use three separate projection tubes and lenses (red, green, and blue). The three color channels of light must “converge” accurately on the screen. Setup, focusing, and alignment are important for getting a clear and crisp picture. CRT projectors are compatible with the output of most computers as well as televisions. Graphic print designers often use special color-correction hardware to ensure that what they see on screen matches precisely what will be printed. Multimedia does not usually require the same level of precision—mostly because the multimedia will likely be presented on any number of monitors with widely varying color settings.

Hard-copy printed output has also entered the multimedia scene. From storyboards to presentations to production of collateral marketing material, printouts are an important part of the multimedia development environment. Color helps clarify concepts, improve understanding and retention of information, and organize complex data.

**NOTE:** The study material (as per the guideline) is compiled from your prescribed textbook *Multimedia: Making it Work* (ninth edition) by Tay Vaughan.