

# Game Consoles

It took only five years between the invention of the *microprocessor*, and its presence in homes around the world as the basis of the *video game console*.

Even with dozens of choices for personal computers with more processing and graphics capabilities, game consoles are still a popular choice: they are smaller, less expensive and easier to set up than a computer, and the games they run are easier to install and play.

## Making the Connections

A video game console typically needs only one peripheral device: a video monitor with one or two internal speakers, to see and hear the game.

Most modern game consoles can accommodate three different ways of connecting a monitor:

**Composite Video** – the same sort of video connection found in a videocassette recorder.

**S-Video** – “Separated Video” uses two wires in a shielded cable to deliver video content: one for the color signal (“chrominance”), and one for the brightness signal (“luminance”). S-Video has the same picture detail as composite video, but with better color quality.

**Component Video** – Three shielded cables send separate analogue signals to the monitor, where they are decoded and displayed. Component video has better picture detail and color quality than either composite or S-Video, and can drive widescreen, high-definition monitors.

Audio is typically connected with two cables, just like those from a tape deck to a home stereo system.

## Connecting the Players

The “human interface” on any game console is its *game controller*. A modern game controller will usually have two thumb-operated stick controllers, and from eight to twelve game buttons. As a game program is loaded into a console, the sticks and buttons assume various functions: moving a character, looking around, picking up and manipulating objects within the game.

Part of the skill a player develops in playing a console game, is learning how to use the controller’s sticks and buttons quickly. Steering vehicles, selecting and firing weapons or interacting with game characters are all handled through the controllers.

## On-Line Gaming

Two of the major game-console manufacturers, Microsoft and Sony, have set up resources on the Internet, from which console game players can join *massive multiplayer environments*. Instead of playing games alone, or with two or four players, large numbers of players can team up, or compete with one another, within a common game “environment”.

Some game programs are written especially for on-line use, with “environments” so large that hundreds of players can participate in the same game, at the same time. In other on-line games, a “session” is set up, and joined by a small group of players. Each group of players can interact with one another within their “session”, while the central “game server” system manages hundreds of “sessions” at a time.

(See page 2 of this handout for Web site listings)



Just as there is a choice between a personal computer and a game console, there is also a choice between a **handheld computer** and a **portable game device**. While a handheld computer can run a variety of programs, including games, their user controls do not lend themselves well to the type of “human interface” to which game-console users are accustomed.

Two game-console manufacturers, Nintendo and Sony, produce handheld game devices with built-in screens, and controller buttons almost identical to their desktop-console counterparts.

Since handheld game devices are meant to be held and played in two hands, they typically have an array of game buttons on both sides of a central display screen. A read-only memory cartridge slot, or a small removable disc drive, loads the game program, while a small bank of “non-volatile memory” stores player scores, game settings and other related data.

Borrowing from their handheld-computer “siblings”, modern portable game devices are often equipped with **wireless network adapters**. They can let the player browse Web sites (within the scope of their display size) when the user is within range of a wireless host network. In addition, players with the same handheld game device can **link them wirelessly**, allowing cooperative or competitive play of the same game.

### Dual Screen or Wide Screen

Nintendo and Sony followed different strategies in designing the displays on their portable game devices. In the **Nintendo DS** and **DS Lite**, two screens (around the size of a cellular telephone’s display) work together. The upper screen displays the actual game action, while the lower screen accepts user input through a touch-sensitive surface and a stylus. Other game information, such as score and progress, is also sent to the lower screen, leaving more of the upper screen free to show real-time game graphics.

The Sony **Playstation Portable** has only one screen, but it is larger than on the Nintendo device, and it has a “9×16” **wide screen format**. Commercial movies and game programs have a more realistic appearance on the larger display, and more Web-site content can be seen without “scrolling”.

### More Games, Please?

Both handheld game devices also provide “backward compatibility” with games from a previous generation of game device, extending the player’s choice of available games. The Nintendo DS and DS Lite will both play cartridge games from the Nintendo **Game Boy Advance**, while Sony offers a gamut of downloadable games from the **psOne** desktop game console.



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All of the game consoles and accessories, as well as a wide variety of game programs for them, are available in the Micro Center **Gaming Department**.

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**Microsoft Xbox 360 Console**  
[www.xbox.com](http://www.xbox.com)

**Nintendo DS & DS Lite Handhelds**  
[www.nintendo.com/systemsds](http://www.nintendo.com/systemsds)

**Nintendo Wii Console**  
[wii.com](http://wii.com)

**Sony Playstation 2 & Playstation 3 consoles,**  
**Playstation Portable handheld**

[www.us.playstation.com](http://www.us.playstation.com)

