Evolution of Game Console Technology

Unit: Game Design

Problem Area: Theory of Game Design

Lesson: Evolution of Game Console Technology

Student Learning Objectives.

Instruction in this lesson should result in students achieving the following objectives:

1. **Describe and differentiate the evolution of game consoles.**
2. **Compare and contrast modern game systems vs. older game systems.**

Resources.

The following resources may be useful in teaching this lesson:

E-unit(s) corresponding to this lesson plan. CAERT, Inc. http://www.mycaert.com.

"From Vintage Video Game Consoles to Today," *The Game Console.com.* Accessed Oct. 8, 2012. http://www.thegameconsole.com/play.html.

"A Guide to U.S. Game Consoles," *Gaming Expo.* Accessed Oct. 8, 2012. http://retrogamingexpo.com/console_guide.php.

Guinness World Records 2012 Gamer's Edition, Guinness World Records Cooperate, 2012.

Hatzithomas, Ion. "Home Video Game Console History," *Gooddealgames.com.* Accessed Oct. 8, 2012. http://www.gooddealgames.com/articles/Home%20Video%20Game%20History.html.

"A History of Video Game Consoles," *Time.* Accessed June 8, 2012. http://www.time.com/time/interactive/0,31813,2029221,00.html.

"Video Game Console Master Index," *Video Game Console Library.* Accessed June 8, 2012. http://www.videogameconsolelibrary.com/main-list-name.htm.

"Video Games," *JJGames.com.* Accessed Oct. 8, 2012. http://www.jjgames.com/.

Equipment, Tools, Supplies, and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

Key Terms.

The following terms are presented in this lesson (shown in bold italics):

- Atari
- Blu-ray
- Brown Box
- CPU
- Odyssey
- Pong
- Ralph Baer
- ROM
- VES
- Xbox

Interest Approach.

Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *Ask the students the following questions: How many of you play video games on one of the three most popular game systems (Wii, PlayStation, and Xbox)? How many of you are aware of the origins of those game consoles? Did you know early game consoles originated more than 45 years ago?*

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Describe and differentiate the evolution of game consoles.

Anticipated Problem: How are game consoles described and differentiated?

I. Evolution of video game consoles

A. In 1967, the first console was called the Brown Box.

1. Television engineer ***Ralph Baer*** was the individual who conceived the idea of an interactive television (game console) while building a television set from scratch.
2. In 1966, while he was the chief engineer and manager of the Equipment Design Division at Sanders Associates, Baer created a simple two-player video game that could be displayed on a standard television set. It was called "Chase," and two dots chased each other around the screen.
3. Baer continued development on hardware and on games. In 1967, he created the final ***Brown Box***, which was the first game console prototype that had two controllers, a light gun, and 16 switches on the console that selected the game to be played.
4. Baer approached several U.S. television manufacturers and eventually signed with Magnavox in late 1969. Magnavox made the following alterations to the Brown Box:
   a. Plug-in circuits were used, instead of switches, to change the games.
   b. The color graphics capabilities were removed in favor of color overlays to reduce manufacturing costs.
   c. It was released in May 1972 as the Magnavox Odyssey.

B. 1972 Magnavox Odyssey

1. Magnavox released the first commercially available game console: the Magnavox ***Odyssey***.
2. The Odyssey was built using a combination of analog (for the output, game control) and digital circuitry.
3. It was not a large success because of restrictive marketing. However, other companies with similar products (including Atari) had to pay a licensing fee for some time.
4. The Magnavox Odyssey lacked sound and was powered by batteries.
5. The system did not last for long because of poor marketing. It was improved five times later as Odyssey 100, 200, 300, 400, and 500.

C. 1975 Pong

1. In 1971, Nolan Bushnell saw a demonstration of the Magnavox Odyssey.

2. In 1972, Nolan formed ***Atari*** (an early video game company) with engineer Al Alcorn to produce an arcade version of Odyssey's ping-pong game: ***Pong***.
3. Pong became the company's first big hit.
    a. The display consisted of black-and-white graphics and was hooked to an existing television set.
    b. Pong's unique feature was the use of a single chip that produced graphics and sound when the paddle struck the ball.
4. Home video games achieved widespread popularity with the release of a home version of Pong during the 1975 holiday season. Its success sparked hundreds of clones, including the Coleco Telstar, which went on to be a success in its own right, with more than a dozen models.
5. In 1976, Atari released Super Pong, which had four different versions.

D. 1976 Fairchild Video Entertainment System (VES)

1. The Fairchild ***VES*** was the world's first CPU-based video game console, introducing the cartridge-based game code storage format.
2. A central processing unit (***CPU***) is the hardware within a computer system that carries out the instructions of a computer program by performing the basic mathematical, logical, and input/output operations of the system.
3. Other consoles had used cartridges, but they had no data and served a function similar to flipping switches.
4. The VES used a programmable microprocessor, and the cartridges only required a single read-only memory (***ROM***) chip.
    a. ROM is a class of storage medium used in computers and other electronic devices to store the processor's instructions.
    b. With games now consisting of microprocessor-based codes, these games were burned onto ROM chips that were mounted inside plastic cartridge casings that could be plugged into slots on the console.
    c. When the cartridges were plugged in, the general purpose microprocessors in the consoles read the cartridge memory and ran the stored program.
    d. Rather than being confined to a small selection of games included in the box, consumers could purchase vast libraries of game cartridges.
5. Other game console manufacturers (e.g., RCA and Atari) introduced their own cartridge-based consoles.
6. When Atari released its VCS the next year, Fairchild quickly re-named the system to the Fairchild Channel F.

E. 1977 Atari 2600

1. In 1976, Bushnell sold Atari to Warner Communications for 28 million dollars. Warner backed up further development of the game systems.
2. In 1977, Atari released its CPU-based console: the Video Computer System (VCS). Later it was called the Atari 2600.
3. Nine games were designed and released for the holiday season. It would quickly become the most popular of all the early consoles.

4. Some of the more popular titles included *Space Invaders*, *Breakout*, *Missile Command*, and *Combat*.
5. The console and its games are popular with collectors because of the significant impact they had on video game and consumer electronics history. They also have nostalgic value for many people.

F. 1980 Mattel Intellivision

1. Toy-maker Mattel released Intellivision as the first real challenge to the Atari 2600.
2. More than 3 million Intellivision units were sold, and a total of 125 games were released for the console.
3. Advertising campaigns demonstrated the superiority of its graphics and sound to those of the Atari 2600 using side-by-side game comparisons.
   a. Intellivision was the first 16-bit game console.
   b. Atari and other systems used an 8-bit processor.
4. It is ranked as the 14th best overall game system by *IGN* magazine.

G. 1983 Nintendo Famicom/NES

1. In 1983, Nintendo came up with the Famicom (short for "family computer") or NES series of games, which brought about a change in the video game console market.
2. The NES series featured full-colored, high-resolution, and longer games with detailed graphics. The game was bundled with a plastic robot and a light beam gun.
3. The system used a handheld control with two red buttons and arrows to select games. Games (e.g., Super Mario Bros.) were designed to work with this setup.
4. Retailers were skeptical about marketing a new game system after the video game crash of 1983.
5. However, Nintendo quickly found massive success with games such as Super Mario Bros. and Donkey Kong, heralding the return of video game consoles.
6. In 1985, Famicom was relaunched as the Nintendo NES in the United States. It quickly became one of the best-selling consoles in video game history, with more than 62 million units sold.

H. 1989 Sega Genesis

1. Sega Genesis was a fourth-generation video game console developed and produced by Sega.
2. It was originally released in Japan in 1988 as the Mega Drive, but it was released in North America in 1989 as Sega Genesis.
3. Sega Genesis was vastly superior to the Nintendo NES in graphics and sound quality.
   a. It used a $^{16}/_{32}$-bit processor.
   b. It had the first use of stereo sound in a gaming system.

4. Sega Genesis became successful because of its games, including *Sonic the Hedgehog*, which was used to compete with Nintendo's Mario game series.
5. When the arcade game *Mortal Kombat* went on sale for home release on the Mega Drive/Genesis and Super Nintendo Entertainment System, Nintendo decided to censor the game's gore, but Sega kept the content in the game, hoping to position its console as the more "mature" product. Sega's gamble paid off, and its version of *Mortal Kombat* received generally higher and more favorable reviews in the gaming press.
6. Sega was first to franchise the popular Madden series.

I. 1991 Nintendo SNES

1. SNES was Nintendo's answer to the Genesis 16-bit system.
2. Throughout the early 1990s, Nintendo and Sega battled for game system market share.
3. By the mid-1990s, SNES surpassed Genesis to become the top-selling 16-bit game system.
4. The success of the SNES can be attributed to a wide range of games (e.g., *Chrono Trigger*, *Earthbound*, *Final Fantasy II* and *III*, *Secret of Mana*, *Street Fighter*, and *Mortal Kombat*).

J. 1995 Sony PlayStation

1. PlayStation became the most popular console of the 32-bit era.
2. This allowed the system to emphasize three-dimensional graphics for the first time over 16-bit, 2D games.
3. It ushered in the use of CD-ROM technology.
   a. The initial plans were to make this system as an add-on to Nintendo's SNES, but the deal fell through. Sony marketed the technology as the PlayStation.
   b. This allowed for games to be priced less than those using game cartridges.
4. A few of the many console favorites are *Final Fantasy VII*, *Tekken 3*, *Twisted Metal 2*, *Castlevania Symphony of the Night*, *Resident Evil 2*, *Metal Gear Solid*, and *Suikoden II*.

K. 1996 Nintendo 64

1. The 1996 Nintendo 64 used a 64-bit processor.
2. It was the last mass-marketed system to use cartridges.
3. Although they were more expensive, the cartridges loaded faster than the PlayStation CDs and thus lacked the load screens.
4. The cartridges eliminated the need for memory cards.
5. The top games for the system were *Zelda Ocarina of Time*, *Goldeneye*, *Rogue Squadron*, *Mario 64*, and *Smash Bros*.

L. 2000 PlayStation 2

1. The 2000 PlayStation 2 was the first 128-bit system.
2. It featured backwards compatibility. You could play older PlayStation 32-bit games on PS2.

3. It played CDs and DVDs.
4. DVDs allowed for longer game times and more realistic graphics.
5. It was the most popular game console of all time, selling more than 130 million units.
6. With more than 1,900 titles available, popular games still include *Grand Theft Auto*, *Metal Gear*, and *Final Fantasy*.

M. 2001 Nintendo Game Cube

1. Like PlayStation, the 2001 Nintendo Game Cube used a 128-bit processor.
2. It was the first Nintendo console to take advantage of optical disc-based media.
3. The Game Cube was the first to use a unique storage medium, the Game Cube Optical Disc, which was a proprietary format based on Matsushita's optical-disc technology.
4. The discs are approximately 8 centimeters ($3^1/_8$ inches) in diameter, which is considerably smaller than the 12cm CDs or DVDs used in competitors' consoles.
5. The Game Cube showcased several sequels to popular Nintendo franchises as well as some new ones. Some of the more popular titles are *Metroid Prime* 1 & 2, *Zelda Twilight Princess*, *Pikmin* 1 & 2, and *Starfox Assault*.

N. 2001 Xbox

1. Microsoft entered the game console business with ***Xbox***.
2. It competed with Sony's PlayStation 2, Sega's Dreamcast, and Nintendo's Game Cube.
3. The integrated Xbox Live service allowed players to compete online over a service that supported dozens of games on a Microsoft hosted server.
4. This was a pioneering business model that is still used today by all console manufacturers.
5. Popular games available on Xbox are *Fable*, *Forza*, *Bioware*, and *Halo*.

O. 2005 Xbox 360

1. Xbox 360 is the second video game console produced by Microsoft. It was developed in cooperation with IBM and ATI Graphics.
2. It includes the integrated Xbox Live service, which allows players to compete online and download content (e.g., arcade games, game demos, trailers, TV shows, and movies).
3. Xbox 360 is the successor to Xbox. It competes with PlayStation 3 by Sony and Wii by Nintendo as part of the seventh generation of video game consoles.
4. As a result of its early launch, Xbox 360 had a one-year lead on its competitors: Sony's PlayStation 3 and Nintendo's Wii.
5. The console's best-selling games include *Call of Duty 2*, *Ghost Recon Advanced Warfighter*, *The Elder Scrolls IV: Oblivion*, *Dead or Alive 4*, *Saints Row*, *Gears of War*, and *Halo*.

P. 2006 Nintendo Wii

1. Wii is spelled with two "i"s to imply an image of players gathering as well as to represent the console's controllers.
2. The Wii remote is a one-handed controller that uses a combination of accelerators and infrared detection to sense its position in 3D space.
3. The Wii remote allows users to control the game using physical gestures as well as traditional button presses.
4. The most important device is the Nunchuk unit, which features an accelerator and a traditional analog stick with two trigger buttons.
5. The Wii is Nintendo's fifth home console and the successor of the Nintendo Game Cube, with most models being fully backwardly compatible with all Game Cube games and most accessories.

Q. 2006 PlayStation 3 (PS3)

1. PS3 is the third home video game console produced by Sony Computer Entertainment. It is the successor to PlayStation 2 as part of the PlayStation series.
2. PlayStation 3 competes with Microsoft's Xbox 360 and Nintendo's Wii as part of the seventh generation of video game consoles.
3. The main features of the console include its unified online gaming service, the PlayStation Network, its multimedia capabilities, connectivity with the PlayStation Portable, and its use of the Blu-ray disc as its primary storage medium.
4. The disc drive is a 2x speed Blu-ray disc drive for games, Blu-ray movies, DVDs, CDs, and other optical media. ***Blu-ray*** is an optical disc format similar to CDs and DVDs that was developed for recording and playing back high-definition (HD) video and for storing large amounts of data. While a CD can hold 700 MB of data and a basic DVD can hold 4.7 GB of data, a single Blu-ray disc can hold up to 25 GB of data.
5. PlayStation 3 is available with hard drive configurations of 20 GB, 40 GB, 60 GB, 80 GB, 120 GB, 160 GB, 250 GB, and 320 GB.
6. Popular games include *Gran Turismo*, *God of War*, *Metal Gear Solid 4*, *Final Fantasy XIII*, and *Tekken 6*.

R. 2012 and on

1. Microsoft Kinect
   a. A webcam-style add-on peripheral for the Xbox 360 console enables users to control and interact with the Xbox 360 without the need to touch a game controller.
   b. Interaction is through a natural user interface by using gestures and spoken commands.
   c. The project is aimed at broadening Xbox 360's audience beyond its typical gamer base.

2. Wii U
   a. The controller (which represents a touchpad) features a touch screen more than 6 inches wide and contains a built-in microphone, speakers, gyroscope, accelerator, rumble, and camera.
   b. The controller allows a player to continue a gaming session by displaying the game even when the television is off.
   c. The system will be fully backwards compatible with Wii.
3. PlayStation 3
   a. PlayStation Move is a motion-sensing game controller platform for the PlayStation 3 (PS3) video game console.
   b. Based on a hand-held motion controller wand, PlayStation Move uses the PlayStation Eye camera to track the wand's position, and it uses inertial sensors in the wand to detect its motion.
   c. The Move competes with the Wii Remote Plus and Kinect motion controllers for the Wii and Xbox 360 home consoles, respectively.

Teaching Strategy: *Use VM–A and VM–B to facilitate a discussion. Assign LS–A.*

Objective 2: Compare and contrast modern game systems vs. older game systems.

Anticipated Problem: How do modern game systems compare to older game systems?

II. Evaluating game systems

A. Modern game systems

1. Hardware
   a. They have high-speed, 128-bit CPU processors.
   b. Some modern systems have integrated hard drives for saving and storing games.
2. Graphics
   a. They have high-quality graphics and 3D capability.
   b. They have full color and high definition. Some systems are now capable of 1080 pixels per inch.
3. Interface/controls
   a. Modern game pads have multiple input buttons and joysticks.
   b. Newer technologies (e.g., Wii and Kinect) react to player movements.
4. Visuals
   a. They have highly realistic visuals for characters and backgrounds.
   b. Backgrounds move or change as players move through scenery.
5. They have stereo or surround sound capabilities.
6. They have high-quality sound effects to match movements, actions, etc.

7. Media format
    a. It uses CD-ROM, DVD, or Blu-ray technology to provide higher quality graphics and longer game times.
    b. Many systems now allow for online gaming experiences through Internet connection.
8. Currently three manufacturers dominate the market.
    a. Nintendo is the creator of Wii and Nintendo DS hand-held series.
    b. Sony is the creator of PlayStaion and the PSP hand-held series.
    c. Microsoft is the creator of the Xbox series.

B. Older game systems
1. Hardware
    a. Early games used 8-bit processors.
    b. There was no on-game storage capability.
2. Graphics
    a. Early games had black and white images, but no color.
    b. Fairchild was the first system to offer color through connection to a TV.
3. Interface/controls
    a. Early controllers used joysticks that allowed for eight directional movements.
    b. Controllers (e.g., the Mattel Intellevision) used a combination joystick and keypad.
    c. Nintendo introduced the basis for the modern controller with the “D-Pad” controller. It used a directional arrow key and two function buttons.
4. Visuals
    a. It had simple, block-shaped pixels for characters and backgrounds.
    b. Some backgrounds were just simple fields of color.
5. Sound
    a. The early Magnavox system had no sound.
    b. It was not until the advent of Fairchild Channel F that sounds were an element.
    c. By the early 1980s, sound progressed to multi-channels, so it was capable of playing music tracks and sound effects simultaneously.
6. Early systems used sound effects only, so there was no background sound.
7. Media format
    a. Early systems (e.g., Magnavox and early Atari) had games pre-loaded on the console. There was no ability to add new games.
    b. Fairchild and Atari introduced cartridges that had read-only memory (ROM), which allowed for games to store more information and to load faster.
    c. Cartridges became the preferred method until the middle 1990s when CD-ROMS became available.

8. Manufacturers
    a. At one time, there were more than 30 manufacturers of video game consoles.
    b. A partial list of early manufacturers includes Magnavox, Atari, Coleco, RCA, Mattel, Sega, Commodore, Panasonic, Nintendo, Bandai, and NEC.
    c. Most have ceased operations because of lack of third-party development for games.
d. Now Sega only exists as a game software company.

Teaching Strategy: *If possible, have students play versions of classic and modern systems. For the classic systems, students may use http://www.thegameconsole.com/play.html. On that website, students can play versions of Atari, Commodore 64, and NES. Modern systems could be ones students have at home. Assign LS–B.*

Review/Summary.

Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Questions at the end of chapters in the textbook may be used in the Review/Summary.

Application.

Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.

Evaluation.

Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

Answers to Sample Test:

Part One: Matching

1. b
2. e
3. i
4. c
5. g
6. j
7. d
8. f
9. h
10. a

Part Two: Completion

1. Odyssey

2. CPU
3. Ralph Baer
4. Blu-ray
5. Xbox
6. background

Part Three: True/False

1. T
2. F
3. F
4. T
5. F
6. T

Sample Test

Name _____

History of Animation

Part One: Matching

Instructions: **Match the term with the correct definition.**

a. Atari
b. Blu-ray
c. Brown Box
d. CPU
e. Odyssey
f. Pong
g. Ralph Baer
h. ROM
i. VES
j. Xbox

_____1. An optical disc format similar to CDs and DVDs that was developed for recording and playing back high-definition (HD) video and for storing large amounts of data

_____2. The first commercially available video game console

_____3. The world's first CPU-based video game console

_____4. The first game console prototype that had two controllers, a light gun, and 16 switches on the console that selected the game to be played

_____5. The individual who conceived the idea of an interactive television (game console) while building a television set from scratch

_____6. A Microsoft game console

_____7. The hardware within a computer system that carries out the instructions of a computer program by performing the basic mathematical, logical, and input/output operations of the system

_____8. An arcade version of Odyssey's ping-pong game

_____9. A class of storage medium used in computers and other electrical devices to store the processor's instructions

____10. An early video game company founded by Nolan Bushnell

Part Two: Completion

Instructions: **Provide the word or words to complete the following statements.**

1. _____ was sold by Magnavox in 1972.
2. The _____ carries out the instructions of a computer program by performing the basic arithmetic functions.
3. The first person to develop a game console was _____.
4. High-definition video disc format is called _____.
5. Microsoft's first game console was called _____.
6. Early systems used sound effects only, so there was no _____ sound.

Part Three: True/False

Instructions: **Write *T* for true or *F* for false.**

_____1. Nolan Bushnell sold Atari to Warner Communications for 28 million dollars.

_____2. The Wii U uses gamepad input devices.

_____3. RCA was the first television manufacturer to sell video game consoles.

_____4. PlayStation 3 uses Blu-ray technology.

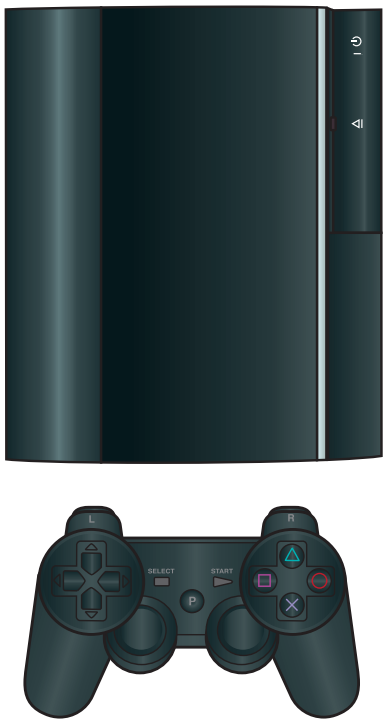
_____5. Nintendo 64 was the first system to use CD-ROMs.

_____6. Microsoft Kinect is based on a webcam-style add-on peripheral for the Xbox 360 console.

VIDEO GAME CONSOLES

A video game console is an interactive entertainment computer or customized computer system that produces a video display signal that can be used with a display device (e.g., a television or a monitor).

Example: 1977 Atari 2600



Example: PlayStation 3

2012 AND BEYOND

- Microsoft Kinect
  - Based on a webcam-style add-on peripheral for the Xbox 360 console, Kinect enables users to control and interact with the Xbox 360 without the need to touch a game controller.
  - Interaction is through a natural user interface. People use gestures and spoken commands.
  - The project is aimed at broadening Xbox 360's audience beyond its typical gamer base.
- Wii U
  - The controller (which represents a touchpad) features a touch screen that is more than 6 inches wide and contains a built-in microphone, speakers, gyroscope, accelerator, rumble, and camera.
  - The controller allows a player to continue a gaming session by displaying the game even when the television is off.
  - The system will be fully backwards compatible with Wii.

PlayStation 3

- PlayStation Move is a motion-sensing game controller platform for the PlayStation 3 (PS3) video game console.
- Based on a hand-held motion controller wand, PlayStation Move uses the PlayStation Eye camera to track the wand's position, and it uses inertial sensors in the wand to detect its motion.
- PlayStation Move competes with the Wii Remote Plus and Kinect motion controllers for the Wii and Xbox 360 home consoles, respectively.

LS–A

Name _____

Game Console Evaluation Sheet

Purpose

The purpose of this activity is to evaluate different game consoles to understand how the different technologies lead to the development of each progression.

Objectives

1. Examine the different types of game consoles since 1967.
2. Research the advancements game consoles have made during the past 45 years.

Materials

- PC with Word and Internet access
- Access to different websites on game console evolution (list supplied)
- paper
- writing utensil

Procedure

1. Use the worksheet provided to assist in researching game console development for each year listed. You may want to use your paper for additional notes.
2. Write down a major game console system from that time frame.
3. Identify at least one major development of game console design used that helped progress game console technology.
4. The time frames are as follows:
   a. 1967
   b. 1972

c. 1977
d. 1980
e. 1983
f. 1985
g. 1989
h. 1991
i. 1995
j. 1996
k. 2000
l. 2001
m. 2005
n. 2006
o. 2012

Name _____

Compare and Contrast Old and New Game Console Technology

Purpose

The purpose of this activity is to compare game console designs and games between old or early technology and modern systems.

Objectives

1. Research the effect technology has had on game development.
2. Create a journal to outline different game console technology.

Materials

- PC with access to online game sights (See "http://www.thegameconsole.com/play.html" for access to old Atari, NES and Commodore Systems) or access to older game systems
- Access to modern game systems (may do this at home)
- writing utensil
- paper
- stapler

Procedure

1. Use this worksheet to evaluate the game consoles in the different categories.
2. If you want, you may add additional comments at the bottom of the sheet that are not covered in the journal.
3. Select at least one system from early and modern.

4. You need to play the game system for at least 30 minutes.
5. Write down the names of the game consoles you played.
6. Write down the names of the games you played.
7. Describe (on your paper) your interaction and your impressions of the game systems. Then use your paper to answer the following questions. Explain why or why not to the yes/no questions. Attach (staple) this lab sheet to your paper, and turn in your work to your instructor.

   Game console name:

   Name of game played:

   Time spent playing:

   Was the game enjoyable to play? Why or why not?

   What type of controls were used?

   Were the controls easy to operate?

   What was the quality of the visual graphics?

   Were the backgrounds fitting with the overall theme?

   How was the sound quality?

   Did the sound quality add to the overall experience?

   Did the game produce sound effects on actions?

   Did the sound effects add to the overall game experience?

   Did the game have clear instructions on how to operate it?

   Did the game operate as intended?

   Did all of the controls work as intended?

   What was your overall impression of the game system?