**Level 1: Play the Simon Game**

**Outline**

Play the original Simon game to establish a mind-set around basic game systems. Research the history of game systems. Decompose the Simon game from perspective of input/output devices and processes.

**Objectives**

* Icebreaker activity to establish community and classroom norms.
* To realize that computers have evolved to take various forms in modern society.
* To begin thinking about computers as a collection of input/output devices and processes.

**Materials & Resources**

* Simon game obtained from teacher

**Questions**

1. Play the Simon game in your group while taking note of the following game-play items:
   1. What was your personal best score?  
      Not applicable
   2. What was the personal best score in your group?  
      Not applicable
   3. What makes it a good game?  
      **It is a memory game.**
   4. In what ways is it similar to modern computer games?  
      **It is not. Some games that require memory are the only similar games: aces, matching cards etc.**
2. Play the Simon game in your group while taking note of the rules of the game:
   1. How do users input information into the game?  
      **By pressing specific button which are on top of the device.**
   2. How does the game output feedback to the players?  
      **It outputs a specific sound and light.**
   3. What are the game options for starting the game?  
      **- Solo: playing by yourself, copying a pattern alone.**  
      **- Party: playing with many players together and copying each other’s patterns.**
   4. What are the end conditions for stopping the game?

**Losing: not completing the pattern given correctly.**

**Level 2: Simon History**

**Materials & Resources**

* Simon game obtained from teacher
* Suggested web resource: http://americanhistory.si.edu/collections/search/object/nmah\_1302005

**Questions**

1. Research the history of the Simon game, focusing on the following questions:
   1. Who created Simon and when was it created?  
      **Milton Bradley, 1978.**
   2. What previous game was it based on?  
      **Inspired by Touch Me Atari game in ’76, by Baer and Howard Morrison.**
   3. What was the first game system and when was it released?  
      **Magnavox Odyssey, ’72.**
   4. What games did it have on it?  
      **Pong.**
2. In your group, discuss the following questions:
   1. What is the oldest game system you have played on?  
      **NES, SNES, GBA, GB, GBC, PSP, PS2, AMIGA, Atari.**
   2. How are old games different from current games?  
      **Old games not only have more requirements but were very bad quality. Old games needed plugs for electricity, cassettes for the game itself and a system to run it; there was no online or internet at the time. Current games however can be bought online, played online, multiplayer online, and can be portable and much MUCH better quality. Speaking in 400% to 500% more advanced and better.**
   3. How are old games similar to current games?   
      **They all require strategy and have objectives, and stories.**
3. Compare the Simon Game to other classic handheld game systems like the Nintendo DS:
   1. List some similarities.

**Digital light, sound, portability, buttons.**

* 1. List some differences.

**More advanced nowadays, more power needed, actual digital video games played, more quality and expenses.**

1. Compare the Simon Game to modern console game systems:
2. List some similarities.

**Digital light, sound, sometimes portability like the Nintendo Switch. Feedback to buttons.**

1. List some differences.

**More advanced, actual video games played, non-portable electricity, more advanced requirements. (Graphics, render, etc.)**

**Level 3: Inside the Simon Game**

**Materials & Resources**

* Simon game obtained from teacher
* Presentation Slides: Simon Vs. Light Switch

**Questions**

1. Consider a basic light switch:
   1. What are some input devices?  
      **The switch itself.**
   2. What are some output devices?  
      **The light.**
   3. How do the inputs affect the outputs?  
      **You trigger the input, it sends signals to outputs. So basically circuits. This example, you flip the switch, it makes conducted pathway for electricity to flow through, then reaches the light which is the output and powers it on.**
2. Consider the Simon Game:
   1. What are some input devices?  
      **Buttons, power on and off switch at back.**
   2. What are some output devices?  
      **Digital sound and led lights.**
   3. How do the inputs affect the outputs?  
      **You press the buttons and they are all programmed to do a specific action. Each button sends information to led and sound buzzer.**
3. How is Simon similar to a light switch?

**They both have inputs and outputs for their function; light.**

1. How is Simon different from a light switch?

**Outputs like sound, buttons, portability, and programming.**

1. Research on-line about what is physically inside the game and the components inside the package:
2. What electronics devices and components provide the logic and computer processing?  
   **The CPU chip located in the center of the device.**
3. What electronics devices and components collect physical input from the user?  
   **The plastic buttons which push little smaller buttons under connected to the ‘motherboard’ CPU chip.**
4. What electronics devices and components provide output (sight and sound) to the user?

**The LEDs, and passive buzzers inside the device.**

1. Research on-line about program logic (e.g. software) that is inside the game and recent projects to emulate (duplicate) the game on modern computers. Summarize your findings below:  
   **People make simple programs that are digital, but do exactly what the Simon game does. Same emulation processes are done with old consoles in order to replay and enjoy the nostalgic fun. The program for Simon games are quite simple. A few if an for statements and loops do the job.**