



TeachEngineering

Simon Decoded: Reverse Engineering Simon Says Using Computational Thinking



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Simon Decoded Activity



Part #1



The Milton Bradley game “Simon” is an electronic version of the game “Simon Says.”

The object of the game is for a player to press the color that matches the sequence and interval presented. As the player completes the task of depressing the emitted bar, another color or sequence is added, thus increasing the difficulty.

The objective of this activity is to reverse engineer the game, creating an analog version that provides kinesthetic, audio, and visual stimulation events that can further support memory improvement, critical thinking, and visual processing.



Part #2



At the beginning of the game, one of the four keys lights up randomly, simultaneously playing a sound associated with the key.

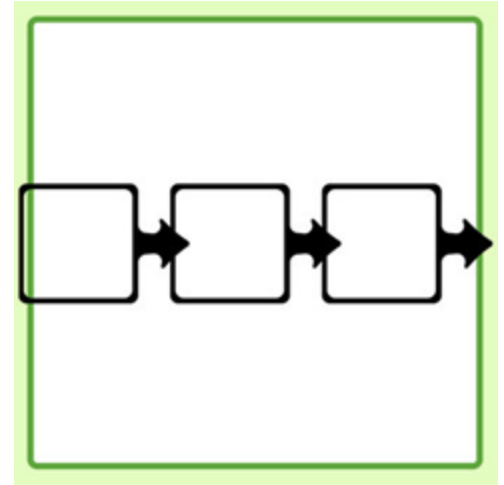
1. The player must press the same key.
2. Next, Simon turns on the same light and then adds a second light, again randomly.
3. The player must reproduce this chain of lights from memory.
4. In each round, a new key is added to the series. The game becomes more difficult as the player's memory is put to the test.
5. If the player doesn't make any mistakes, the game goes on. So, it is an endless game!



Part #3



- Assign roles.
- Get materials.
- Review role duties.



In groups of 2 or 3 students:

- One student will be the randomizer (i.e., dealer). The randomizer will shuffle the cards as many times as they see fit.
- The scorekeeper will record the number of times the randomizer shuffles the card and write it down on the Decoded Simon guided worksheet.



SIMON DECODED

NAME _____
DATE _____
PERIOD _____

INSTRUCTIONS:

1. Create a variable name for each colored card.
2. The Randomizer (dealer) will shuffle the cards. Make note of how many times the cards were shuffled.

COLOR	RED	GREEN	BLUE	YELLOW
VARIABLE NAME				

RESULTS RE

RESET STOPWATCH
WRITE DOWN THE VARIABLE NAME AS IT IS BEING SHOWN /CALLED OUT BY THE PLAYER IN THE ORDER IT IS PRESENTED.
STOP THE STOPWATCH WHEN PLAYER DOES NOT ANSWER A COLOR IN ITS PROPER COLOR SEQUENCE (CS). RECORD THE TIME.

START TIME	CS #1	CS #2	CS #3	CS #4	CS #5	CS #6	CS #7	CS #8	CS #9	CS #10	END TIME



- The player will be given one card of each color. The cards will be placed in front of them side by side.
- The randomizer will display a series of cards while still attached to the ring. After the card is shown, it will go to the other side of the ring, separated by the smaller ring as a marker.
- The player will touch the cards in the order seen by the randomizer. As soon as the player taps the corresponding card, the next card is shown. They must tap the cards in order from the beginning of the series. They'll have 10 seconds of grace time to error (when they draw a blank and cannot remember). If more than 10 seconds pass, their turn is lost.
- The scorekeeper must use the established variable names when writing down their answers on the worksheet.

