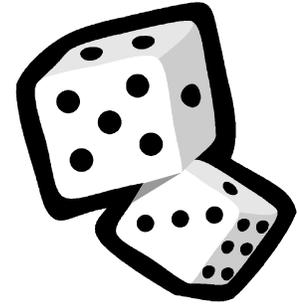


Names \_\_\_\_\_ period \_\_\_\_\_



## **Digital Electronics Game Design**

Digital Electronics

Wemp

You have been tasked with creating an electronic game for the Engineering classes at NNU. They want to create a game that can be played by potential students to showcase what they could learn in an electronics class. Your game will need to be portable, creative, and contain electronics concepts that you have learned in this class.

### **PART 1 (1 day)**

You will need to research who your target audience will be. There could be a wide range of ages that would be interested in attending NNU. Also, there is generally a push to get more girls enrolled in engineering classes. Once you have determined who your target audience will be, you will need to begin the design process for the game. You will need to be able to answer the Who, What, Why, and How of the project.

### **PART 2 (8 days)**

You will need to design the circuitry that will be used for your game. You will need to include all of this information in your final report. You can scan this documentation if necessary. You will want to start with figuring out the minterms and counters that are necessary for your game. Create truth tables and k-maps where necessary. Use Multisim to create a simulation of the circuitry that will be used. A print out of the circuit and a detailed description should be included in your final report. One should be able to completely re-create this project by following your final report. Finally, give an overall review of your game and game play.

### **PART 3 (2-3 days)**

Create a physical model of the game you designed. It could be contained in a shoe box sized container and include the necessary electronics to function correctly. The final model should be in color, have a quality design, and include instructions. Your instructor should be able to play it on the final hand in.

# Deliverables

Digital Electronics Game Design  
Digital Electronics  
Wemp

## PART 1

### Research

Writing is correct for the audience (grammar, sentences, etc.)-----10  
Research is accurate and detailed-----5  
Includes detailed pictures and descriptions-----5

Total \_\_\_\_/20

## PART 2

### Design process:

Brainstorm sketches and ideas-----5  
Circuit Minterms-----5  
Truth Tables-----5  
k-maps-----5  
Circuit simulation-----10

### Report

Writing is correct for the audience (grammar, sentences, etc.)-----10  
Information is accurate and correct-----10  
Format of report is correct and professional -----10

Total \_\_\_\_/60

## PART 3

### Game

Game works as it is supposed to-----10  
Quality and creativity in game construction-----0-15

Total \_\_\_\_/25