**Level 1: Play the Nethack Game**

**Outline**

Play the original Nethack game to establish a mind-set around basic computer game and programming concepts. Research the history of “rogue like” games. Decompose the Nethack 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**

* Online Nethack: https://alt.org/nethack/

**Questions**

1. Play the Nethack game until you have a character that has survived for more than one dungeon level.  
   1. How many levels have you reached so far?
   2. What character type are you?
   3. How many times (deaths) did it take you to get this far?
   4. What are some of the monsters you have encountered and how are they represented?
   5. What are some of the special objects you have encountered and how are they represented?
   6. What are some of the commands that you use most often?
2. Compare the Nethack interface to modern computer games:  
   1. Does the primitive character based display limit the game play (Explain)?
   2. Does the primitive command based input and control limit the game play (Explain)?
   3. Is the Nethack game less complex or more complex than modern computer games (Explain)?
3. Compare the Nethack gameplay level to modern computer games:  
   1. Is the gameplay easier or harder than modern games (Explain)?
   2. Nethack is an example of a “Turn Based” game. Would it be better of the monsters moved in real time (Explain)?
   3. Nethack is an example of a “single player” game. Would it be better if the game was played in a multi-player world (Explain)?

**Level 2: Nethack History**

**Materials & Resources**

* Google: “Nethack History”
* Google: “Rogue Like Games”

**Questions**

1. Research the history of Nethack, focusing on the following questions:  
   1. Who created the game and when was it created?
   2. What previous games was it based on?
   3. What computer hardware did it originally work on?
   4. What computer language was it written in?
   5. How has Rogue/Hack/Nethack evolved and changed since the 1980’s
2. Research the topic of “Rogue Like” games, focusing on the following questions:  
   1. What are the main features of these types of games?
   2. How is it related to original “first person shooter” games like Doom?
   3. How is it related to early “role playing” games?

**Level 3: Inside Nethack**

**Materials & Resources**

* Source Code: https://github.com/NetHack/NetHack
* Nethack License: https://www.nethack.org/common/license.html

**Questions**

1. Questions related to Nethack Source Code…  
   1. Where is the source code located? Can anyone access this code?

* 1. What is the current version of Nethack?
  2. What language is used to code Nethack?
  3. How is the source code different from a program that you download and install?

1. Questions related to the Nethack License:  
   1. What is the Nethack user license called and where is it located?
   2. Does the license allow anyone to copy the program? (Explain)
   3. Does the license allow anyone to modify the program? (Explain)
   4. How is the Nethack license different from licenses from big companies such as Microsoft and Apple?
   5. What might be some of the advantages of the Nethack license for creating better programs and better versions of Nethack?
   6. What might be some disadvantages of the Nethack license related to the quality of the Nethack program.