TEACHER NAME: William LaMorie
COURSE NAME: STEAM Computer Science
DATE: 13-Jan **DAY: Th** **DAY: 1 of 10?**

UNIT: Objects & Classes

LESSON ARC: Life Simulation Capstone Project

LESSON TITLE: Introduction to project

STANDARDS:
See Project Outline

Long range support & LEARNING TARGETS:
Long range Skills Supported:
SWBAT: Develop, across many lessons, an understanding of the syntax of C++and how to work within its scope.
SWBAT: Continue to develop their toolbox of computer science & agile team skills, to prepare them for further use of these skills to produce more complex projects.

Long range Concepts & Motifs Supported:
SWBAT: develop, across many lessons, an understanding of the use of web-resources in their further development as web based programmers.
SWBAT: Develop and master, across many lessons, as is appropriate for intendended skill level, the use of skills that will produce solutions to non-trivial programming problems.

For Lesson:

SWBAT: Read & Comprehend a project specification & rubric
SWBAT: Work with peers to develop a strategy to develop a planning outline
SWBAT: Develop a system of tracking their own work
SWBAT: Begin to implement a project based on their understanding of computer science and C++

LESSON INTRODUCTION	CHECKS FOR UNDERSTANDING	ACADEMIC VOCABULARY
1. Review the last 2 projects quickly, ask students to think about examples of where functions have made things better 2. Review objects, class use, n-dimensional vectors, polymorphism 3. Introduce Project Specs & Groups, & new expectations	1. Check student group comprehension of specs & rubric 2. Check student group document development 3. Check development of student time tracker. 4. Check for students moving from document outline to what that looks like for functions 5. Check student work routinely during class. 6. Code turn in	array native, array library, array type, vector, method, size, return, function, inclusion, param, parameter, augment, loop, switch, case, state, variable, namespace, using, conditional, for, while, void, return, expression, conditional, boolean, prosperity, push, pop, back, break, equivalent, boolean, inequality, equality, error, object, class, encapsulation, toString(), polymorphism, inheritance

#	ACTIVITIES	TIME
1	**Lesson introduction as above.**	.25h
2	**Break into groups. Goals for the day are organizational and planning related.** ● **Groups should develop a planning document.** ○ **Check document for understanding of spec & rubric, correct as need be** ○ **Check for basic understanding of the programming needs aligning with the document** ○ **Make sure it is shared in the classroom with me.** ● **Group should develop a way to manage time** ○ **Should be easy to read and easy to enter into for students and for me** ○ **Should allow for students to track time working with others and on their own** ○ **Should allow the group to have internal accountability** ● **Groups should begin to make pseudo code based on their document and the specs.** ○ **Check that it is focused on functions** ■ **Focused on reuse** ■ **Lacking copy paste functions** ■ **Make sure they can follow the params through the code** ■ **For Year 2's - try to get students working with stand in params** ○ **Check & aid with understanding n-dimensional arrays** ■ **IF there is an endemic struggle with n-dimensional arrays, teach a few examples and put them in the classroom.** ○ **Check & aid with creation of class hierarchy and vectorial representation of a map.** ■ **IF there is a lack of understanding of these, then teach a few examples and put them in the classroom.** ● **Transition groups to data entry & making/understanding multi d vectors if they have finished the above**	1.5h
	CLOSING/DEBRIEF/EXIT TICKET: Remind students to be sure group work is turned in, and any individual code	.125h

MATERIALS/RESOURCES: ● **projector, whiteboard, markers, internet connection, computers, program development software, discord as needed.**	**HOMEWORK/FORMATIVES:** ● **See project outline**
SUMMATIVE ASSESSMENT: ● **Final Project Turn in**	**NEXT Lesson Topics:** ● **More work on Multi D vectors & more on strings**