Unit 05: Final Project

Content Area: **Computer Science**
Course(s):
Time Period: **Marking Period 2**
Length: **25 - 30 days**
Status: **Published**

Summary

As games are developed, there are many levels of consideration. Level design, class structure, functionality, balance and controls will all be mapped out before students begin programming their own games. During the development process, many rounds of play-testing will outline issues with loopholes in the rules/game, object dominance, or dead ends that the creator must observe and correct in order to produce an internally complete game.

Revised Date: July 2025

Essential Questions/Enduring Understandings

Essential Questions:

- How are algorithms employed to create a challenge?
- What does it mean for a game to be 'impossible'?
- How are dead ends, symmetry balance, dominant objects, and loopholes addressed in the design process?

Enduring Understandings:

- In order to be a good game designer, one must test not only the game being worked on, but many others as well.
- Class structure and relationships are paramount in developing meaningful games.
- Intuition and creativity drive the functionality of games.

Objectives

Students Will Know:

- What it means when a game is “internally complete.”
- How to accurately play-test their game(s) and how to run a focus group.
- How to design a game using a current game design program and current trends.

Students Will be Skilled at:

- Building complete games.
- Using the play-testing stages in order to finalize a game.
- Expressing their thought process both orally and in writing.

Learning Plan

- Creation of a working prototype – Students will generate a working prototype that can be used to play-test their game.
- Self-Testing – Test for completeness activity: variable adjustments, analyze relationships, dominant strategies, symmetrical vs. asymmetrical design issues, skill levels, and purity of purpose are all aspects that need to be tested before play-testing.
- Play-Test Script – Write a script for the play-test session within our class. Be sure to address areas of your game design that you have questions about. Do not lead or suggest ideas to the play-testers. Generate a report on feedback and results.
- Based on feedback from play testing, students will correct mistakes and make improvements to their prototype game.

Assessment

- Assessments

    - Formative: Daily assessments using examples from class notes and CodeHS.com, AP Classroom/Albert Checks for Understanding

    - Summative: Teacher-created assessments/projects and CodeHS Computer Science Projects, AP Classroom/Albert Unit Assessments

    - Benchmark: Check for understanding benchmark assessments on CodeHS, AP Classroom/Albert/Khan Academy Diagnostics

    - Alternative Assessments: Student-centered activities such as a doorbell coding project, game

design projects, and other activities involving real world applications shown below:

- Rubric for their final game project
- Weekly meetings with individuals or groups

Materials

- Core instructional materials: Core Book List including Game Design Workshop by Fullerton

Supplemental materials:

- CodeHS

- Computers
- Dice
- Cards
- Cardboard
- Construct 3

Integrated Accommodation and Modifications

See linked document.