To: Glenn Mitcham
From: ELHS Applied Technology Teachers
Re: Proposal to Implement an Elective Course: Video Game Design

Background / Rationale
Offering video game design as a course in high school provides several compelling benefits that align with educational goals, student interests, and workforce demands. Here are key reasons to include video game design in a high school curriculum:

1. Engages Students in a Relevant and Exciting Medium
Video games are a medium many students are passionate about, making this course inherently engaging. Offering video game design allows students to channel their love for gaming into a productive and creative outlet, increasing motivation and participation in learning.
2. Teaches Valuable 21st-Century Skills
Technical Skills: Students learn coding, graphic design, animation, and game mechanics, which are transferable to careers in technology, engineering, and creative industries.
Problem-Solving: Designing games involves tackling complex problems, debugging, and iterative testing, fostering critical thinking and resilience.
Collaboration: Many game design projects require teamwork, mirroring real-world industry practices and building interpersonal skills.
Project Management: Students plan, create, and deliver projects on deadlines, helping them develop organizational and time-management skills.
3. Promotes STEAM Integration
Video game design integrates Science, Technology, Engineering, Art, and Mathematics, offering a holistic STEAM learning experience. Students learn to combine technical programming with artistic creativity, bridging the gap between traditionally separate disciplines.
4. Prepares Students for Future Careers
The gaming industry is a multibillion-dollar sector with growing job opportunities in game development, software engineering, graphic design, and related fields. Even for students who do not pursue game design professionally, the skills they acquire (e.g., coding, logic, and storytelling) are in demand in numerous industries, from tech startups to entertainment.
5. Encourages Creativity and Storytelling
Video game design fosters creative thinking as students create characters, build immersive worlds, and design engaging narratives. It offers an opportunity for self-expression through interactive storytelling and digital art.
6. Supports Computational Thinking

The course develops computational thinking by teaching students to break down problems into manageable parts, use algorithms, and think logically—skills crucial for success in computer science and beyond.
7. Attracts Diverse Learners
Video game design can attract students who might not typically enroll in traditional computer science courses, especially those interested in the arts, storytelling, or gaming. This inclusivity can inspire more students to pursue STEAM careers, closing participation gaps.
8. Builds Community and Collaboration
Collaborative game design projects encourage teamwork and communication while helping to build a sense of community within the classroom.
Students can showcase their creations in school-wide exhibitions or competitions, fostering pride and connection.

Prerequisites
No Prerequisites.

Expected Impact on FTE
There will be no impact on FTE. We are offering one less section of Tech Essentials.

Timeline

January 2025	Proposal submitted to Academic Committee
February 2025	Proposal submitted for Board approval
February 2025	Course description added to Course Description Booklet
March 2025	Course offered to students for the 2025-26 school year
Summer 2025	Continuation and completion of unit development
Fall 2025	Course will be taught by Orion Smith

Research
After researching various curricula for a new video game design course, we carefully evaluated multiple options to find the best fit for our students. Our goal was to select a program that offered a comprehensive, engaging, and beginner-friendly approach while fostering critical skills in coding and game development. After comparing features such as course content, accessibility, and alignment with educational standards, we decided to propose the adoption of the CodeHS course. This curriculum stood out for its structured lessons, interactive projects, and ability to effectively introduce students to both the technical and creative aspects of video game design.

- Materials Reviewed/Created for Context and Consideration
  - Sample Course Descriptions and Syllabi
    - Overview of the course
    - Syllabus

Budget

- Summer 2025 work time to prepare for first offering of the course.
- $500 annually for consumable supplies.

Course Description

The CodeHS video game design curriculum teaches the foundations of creating video games in JavaScript. This course is an introductory course. Its curriculum teaches the foundations of computer science and basic programming, with an emphasis on helping students develop logical thinking and problem solving skills.

Unit 1: Introduction to Programming
Unit 2: Code Basics
Unit 3: Canvas and Graphics
Unit 4: Graphics Challenges
Unit 5: Control Structures and Challenges
Unit 6: Functions and Challenges
Unit 7: Animations and Games
Unit 8: Data Structures
Unit 9: Projects