Regional Occupational Program

Game Design 1 A-G 2025-2026

COURSE DESCRIPTION

Video Game Design is for anyone who loves computer games and wants to try to make them for themselves. The course provides students the opportunity to learn both the theory and application of gaming ideas, while providing basic instruction and principles of video game development. Video Game Design will introduce students to the Video Game Design Industry and the basic components and processes required to produce an interactive video game for market. The students will study the history of video games and analyze aspects of successful design. Career opportunities and industry standards will be researched.

Course Information:

Course Length:	1 Year
Prerequisite:	None
Course Level:	Concentrator
UC:	Yes G - Elective
Articulated:	No
Industry Cert.:	No
Industry Sector:	Arts, Media, and Entertainment
Pathway:	Game Design and Integration
CALPADS:	7261

O*Net SOC Codes:

15-1255.01	Video Game Designer
27-1024	Graphic Designer
27-1014	Special Effects Artists and Animators

Legend:

CTE - PS	CTE Pathway Standards
CRP	Career Ready Practices
CTE - AS	CTE Anchor Standards
CCSS	Common Core State Standards
ISTE	International Society for Technology in Education

Includes updates from the 24/25 Arts, Media and Entertainment Advisory

Advisory Minutes

Video Game Design 1

Course Orientation

a. Discuss objectives for this course, including competencies, teacher expectations, classroom policies, and procedures.
b. Identify and discuss the acquisition of transferable skills (communication, collaboration, creativity, and critical thinking) and their importance to being college and career ready and for future personal and professional success.
c. Review objectives, competencies, and course syllabus.
d. Discuss student and teacher expectations, including behavior, class rules, appropriate dress, pre-course knowledge, and grading policies, including enrollment and attendance requirements and procedures, and classroom/school safety and disaster procedures.
e. Discuss next steps in course sequence related to the career pathway, the need for reinforcement of basic skills, transferrable skills, and postsecondary and career options.
f. Discuss the Big Six: Career Ready Essentials and the Standards for Career Ready Practice as they relate to this course, all aspects of the industry sector, and being college and career ready.

Big Six: Career Ready Essentials

1. Effective Communication	CTE – PS	CRP	CTE - AS	CCSS	ISTE
a. Demonstrate effective verbal communication and conflict resolution skills. **b. Use the writing process to develop written communication with the appropriate tone, organization, and format for the identified audience.** c. Explain the effect of interpersonal skills on one's ability to communicate effectively and develop relationships. d. Describe the impact of ineffective communication on business relationships. e. Analyze the impact of vocabulary, body language, and tone on verbal communication. f. Demonstrate active listening skills. g. Accurately interpret industry-specific written communication. h. Model responsible and effective use of various communication technologies. i. Identify valid and reliable digital reference and resource materials. j. Gather information from multiple digital sources to compare and contrast, synthesize, and summarize. k. Identify and use appropriate communication and collaboration technologies. l. Utilize technology to problem solve, accomplish tasks, and to produce or publish products.		1 2 11	2 3 4 5 7 8 9 10 11	**LS** 9-10 11-12.6 **SLS** 11-12.2 9-10 11-12.1 11-12.1d **WS** 11-12.7 11-12.6	1b,c 2c 3b,c 5c 6b,c,d

2. Collaboration, Creativity, and Critical Thinking	CTE - PS	CRP	CTE - AS	CCSS	ISTE
a. Demonstrate critical thinking skills for a variety of purposes and in different settings. **b. Collaborate to reach consensus on an identical objective through the sharing of knowledge, tasks, and learning.**		2 4 5	2 3 4	**LS** 9-10 11- 12.6	1c 3c,d 4a-d

c. Discuss the importance of the critical thinking process to real-world applications. d. Evaluate the impact of creative thinking on problem solving and innovation in real-world applications. e. Compile work that demonstrates the process used to (elaborate, refine, analyze) evaluate original ideas and maximize creative efforts. f. Apply divergent and convergent thinking to the development of an original idea or solution. g. Examine real-world limits to adopting ideas. h. Demonstrate creative thinking (preparation, insight, evaluation, elaboration, and communication) to create a new idea or concept. i. Assume shared responsibility for collaborative work, and value the individual contributions made by each team member. j. Evaluate evidence, arguments, claims, and beliefs to identify connections. k. Identify bias, prejudice, propaganda, self-deception, distortion, and misinformation. l. Produce intellectual, informational, or material products that serve an authentic purpose. m. Work effectively and respectfully with those from diverse backgrounds or cultures. n. Demonstrate respect, trust, commitment, and the ability to compromise in collaborative projects.		7 9 10 11	5 7 8 9 11	**SLS** 9-10 11-12.1 11-12.1d 11-12.2 **WS** 11-12.7 11-12.6	5c,d 6c 7b,c,d
3. Leaders and Teams: Roles and Responsibilities	**CTE – PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Determine the individual and team members' roles and responsibilities. **b. Demonstrate leadership skills and qualities (i.e., reliability, negotiation skills, initiative, positive reinforcement, recognition of others' efforts, problem-solving skills, conflict resolution, and delegation).** c. Explain the importance of technical, social, and communication skills to team success. d. Compare and contrast leadership styles and their effectiveness in various situations. e. Organize and delegate responsibilities in a team setting to encourage ideas, perspectives, and contributions from all team members. f. Develop a strong sense of team identity by brainstorming solutions, volunteering, assisting others, practicing respect and courtesy, and taking initiative. g. Examine situations in which a follower becomes the leader. h. Describe twenty-first-century skills required across all occupations. i. Identify and discuss the characteristics of a successful team (i.e., leadership, cooperation, and effective decision-making). j. Leverage social and cultural differences to increase innovation and quality of work.		7 8 9	3 7 8 9 11	**SLS** 11-12.2 9-10 11-12.1 11-12.1d **WS** 11-12.6	7a,c
4. Legal, Ethical, and Environmental Considerations	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Demonstrate industry specific ethical and legal practices. **b. Identify eco-friendly industry specific practices and resources.**		5 7	3 5	**WS** 11-12.6	2a,b 3a,b

c. Identify local, state, and federal regulatory agencies, entities, laws, and regulations. d. Identify discrimination based on race, nationality, religion, gender, age, disability, or sexual orientation. e. Summarize the ethical and legal implications of workplace discrimination and harassment. f. Explain the concept of corporate citizenship. g. Examine an employer's role in protecting the health and welfare of employees, the community, and the environment. h. Analyze current environmental laws and regulations and their impact on industry. i. Compare and contrast both society's and industry's impact on the environment.		8 12	7 8 9 11	11-12.7 **SLS** 9-10 11-12.1 11-12.1d 11-12.2	5c 6c
5. Personal Growth and Career Planning	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Demonstrate continued personal development and growth. **b. Develop and manage a personal growth and career plan.** c. Explain the relationship between sound financial habits and financial security. d. Create and manage a personal financial plan. e. Demonstrate initiative in achieving personal and professional goals. f. Apply time management strategies to meet deadlines. g. Demonstrate a growth mindset through flexibility and a positive attitude. h. Select and demonstrate appropriate job-search and retention techniques. i. Demonstrate strategies to prepare for employment. j. Demonstrate interpersonal skills appropriate for the workplace. k. Elaborate on the importance of perseverance to personal and professional success. l. Discover personal career interests, aptitudes, and skills.		1 2 3 4 6	2 3 4 7 8 11	**LS** 9-10 11-12.6 **SLS** 9-10 11-12.1 11-12.1d 11-12.2 **WS** 11-12.6	1a 3a,c 4d 6a,d 7b
6. Workplace Safety and Personal Wellness	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Demonstrate proper industry specific safe work practices to prevent injury or illness. **b. Assess the potential impact of goal setting on personal and professional success.** c. Describe the role of security and emergency procedures in workplace safety. d. Describe the effect of preventative measures on emergencies in the workplace. e. Identify and describe the causes, prevention, and treatment of common accidents. f. Identify local, state, and federal agencies that regulate workplace safety. g. Explain the role of the California Occupational Safety and Health Administration (Cal-OSHA) and the Environmental Protection Agency (EPA). h. Discuss the basics of system operations. i. Demonstrate the proper use of personal protective equipment (PPE). j. Explain the purpose of and accurately interpret a Safety Data Sheet (SDS). k. Identify hazardous materials and chemicals. l. Demonstrate proper procedures to respond to work-related accidents and injuries.		2 5 6 8 12	2 5 6 7 8 10 11	**LS** 9-10 11-12.6 **WS** 11-12.7 11-12.6 **SLS** 9-10 11-12.1 11-12.1d	1a,d 2a,d 5b

m. Describe how ergonomics, housekeeping, and maintenance are related to accidents and injuries. n. Demonstrate cyber ethics, cyber safety, and cybersecurity. o. Assess the potential impact of preventative physical and mental health measures on workplace safety.					
Video Game Design 1 Units of Instruction					
7. History of Video Games	**CTE-PS**	**CRP**	**CTE- AS**	**CCSS**	**ISTE**
a. Describe the history of the computer game industry. **b. Identify, list, and describe the different genres of video games.** c. Identify and describe current trends in the video game industry. d. Describe how technology has influenced the game industry. e. Describe the history of games in general and their purpose. f. Identify influential people, companies, laws, and games in the history of video games. g. Describe how advances in technology have affected video game development.	D1.0 D1.1 D1.4	1 2 5 12	1 2 5	**LS** 9-10 11-12.6 **WS** 11-12.7	
8. Video Game Industry	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Identify, list, and describe the roles of the different development team positions and how those roles relate to one another. **b. Identify review methods and systems, both past and present, and how they affect game development and sales.** c. Describe the role of mods in video games. d. Identify bugs in video games and reasons why games with bugs are released to the public. e. Describe the role of ethics, non-disclosure agreements, intellectual property, royalties, and copyright in the computer game industry. f. Describe the roles of public relations and media in marketing. g. Describe the roles of publishers, manufacturers, and distributors in video game sales. h. Describe the economics of the video game industry. i. Describe the advantages and disadvantages of the various avenues of game distribution. j. Describe the role of game patches and downloadable content. k. Identify, list, and describe the hardware and software commonly used within the video game industry. l. Identify challenges of women and minorities in the video game industry. m. Describe marketing and public relations in the game industry. n. Describe the role of video game journalism and communities.	D1.3 D2.1 D4.8 D5.0 D5.1 D7.0 D7.1 D7.2 D7.4 D7.5 D7.7 D8.6	1 2 5 12	1 2 5	**LS** 9-10 11-12.6 **WS** 11-12.7	
9. Design Theory	**CTE - PS**	**CRP**	**CTE - AS**	**CCSS**	**ISTE**
a. Describe the elements needed to create a game in each genre.	D1.1	1	1	**LS**	

b. Identify and list the different demographics, geographics, and psychographics of video game players. c. Identify common player control schemes in the different video game genres. d. Identify, list, and describe the parts of the development cycle of a video game. e. Analyze and create non-digital games. f. Describe level design and environmental design. g. Describe the role of brainstorming in game development. h. Describe the role of documentation in the video game development process. i. Describe the role of achievements and rewards in video games. j. Describe emergence in video games. k. Describe the roles of cooperation and competition in multiplayer video games. l. Describe the challenges of creating realism in video games. m. Describe the role of reference material in game design. n. Describe how prototyping is used in the game development process. o. Compare and contrast linear and non-linear game progression and their advantages and disadvantages. p. Describe the role of artificial intelligence in video game design. q. Describe the roles of cheat codes and exploits in video games. r. Describe the role of customization within games.	D1.2 D2.0 D2.2 D2.8 D3.2 D3.3 D8.0	2 4 5 9 10 11 12	2 4 5 9	9-10, 11-12.6 **WS** 11-12.6 11-12.7 **SLS** 11- 12.1b	
10. Storytelling and Character Development	**CTE – PS**	**CRP**	**CTE – AS**	**CCSS**	**ISTE**
a. Describe the role that story plays in the different video game genres. **b. Describe the effect of plot, pacing and conflict on the game mechanics of a story-based game.** c. Create a storyboard. d. Write character dialogue. e. Compare and contrast two dimensional and three-dimensional characters and their roles in video games. f. Describe how story impacts player emotions. g. Describe the role of supporting characters and non-player characters. h. List and describe the different parts of the Hero's Journey. i. Develop a fictional character including backstory, motivation, and character traits. j. Compare and contrast first person and third person characters and how that affects the story told in video games. k. Describe the hero archetype.	D3.1 D4.2 D4.9 D4.10 D6.3	1 2 4 5 9 10	1 2 4 5 9	**LS** 9-10 11-12.6 **WS** 11-12.6 11-12.7 **SLS** 11- 12.1b	
11. The Art of Video Games	**CTE – PS**	**CRP**	**CTE – AS**	**CCSS**	**ISTE**
a. Describe the components of video game art as it relates to each genre. **b. Design and create a user interface.**	D2.3 D2.5	1 2	1 2	**LS** 9-10	

c. Compare and contrast the roles of 2D and 3D animation including motion capture. d. Describe the use of visuals in game design. e. Compare and contrast the advantages and disadvantages of 2D and 3D art in video games. f. Identify and list the different camera controls and angles in video games. g. Describe the parts of a 3D model including vertices, lines, polygons, unwrapping, texture, and bones. h. Describe the role of cinematics and cut scenes in video games. i. Describe how color and lighting affects scenes in video games. j. Describe the role of special effects in video games. k. Create special effects. l. Describe the elements of game art that are emphasized in the different genres of video games. m. Create the art for a character archetype. n. Create background art. o. Create game assets.	D3.5 D4.0 D4.1 D4.3 D4.4 D4.5 D4.6 D4.7	4 5 10 11	4 5	11-12.6 **WS** 11-12.6 11-12.7	
12. The Game Development Process	**CTE – PS**	**CRP**	**CTE – AS**	**CCSS**	**ISTE**
a. Create 2D sprites and 3D models for a video game. **b. Create a 2D game and environments.** c. Create a game design document. d. Describe and identify the game development pipeline. e. Create a video game level. f. Create a design portfolio. g. Create a flow chart for a game. h. Write a pitch for a video game. i. Create a video game prototype. j. Create video game scripts. k. Identify methods for publishing and marketing video games. l. Compare and contrast the roles of the game design document and SCRUM/agile game development including their advantages and disadvantages. m. Describe the entire video game process from beginning to release.	D3.0 D5.5 D5.6 D6.0 D6.1 D6.4 D6.5 D6.6 D6.7 D7.10 D10.0 D10.2 D10.3 D10.4 D10.5 D10.7	1 2 4 5 7 8 9 10 11 12	1 2 4 5 7 8 9	**LS** 9-10 11-12.6 **WS** 11-12.6 11-12.7 **SLS** 9-10 11-12.1 11-12.1d 11-12.1b	

A-G Approved Key Assignments	
1.	Students will design a new, non-digital prototype of a game. *Unit(s) 9*
2.	Students will design and create a demo level video game. Each game must be playable and goal oriented. *Unit(s) 9, 12*
3.	Students will design and create a functioning user interface, including start menus, game-over screens, and HUD. Students must document the rationale and theory behind their decisions. *Unit(s) 11*
4.	Students will research the elements that make a strong video game character. Students will develop and present an original fictional character including back story, motivation, and character traits. *Unit(s) 10*
5.	Students will complete a GDD (game design document) that includes story, characters, gameplay, art, sound and music, game controls, design (level/environment), asset list, game flow, user interface, and project timeline. *Unit(s) 9, 11, 12*
6.	Following a completed GDD, students will develop the game as written. *Unit(s) 9, 11, 12*
7.	Using another students' GDD, students will analyze the plausibility of the game, create the game, and defend any changes that were necessary. *Unit(s) 12*
8.	Imitating industry practices, students will redesign a game based on random and unexpected directives made by the teacher. *Unit(s) 8, 9*
9.	Students will design and create a video game to a specific target audience. (NOT high school or young adult) *Unit(s) 9, 10, 11, 12*
10.	Students will improve and enhance formerly designed games based on peer feedback and new skills learned. *Unit(s) 12*
11.	In design teams, students will complete a video game utilizing all game design skills acquired during the course to be experienced by others at a school-wide event. *Unit(s) 9, 10, 11, 12*
12.	Students view and analyze the documentary "Video Game Invasion: The History of a Global Obsession". Students participate in class discussions and write a 2-3 page paper sharing their perspective on the impact of the gaming industry on today's culture. *Unit(s) 7*
13.	Identify and discuss the challenges of women and minorities in the video game industry. *Unit(s) 8*
14.	Students will write and present a pitch for their final video game design. *Unit(s) 12*

Standards Alignment

The curricula have been aligned with the CTE Model Curriculum Standards released in 2013. Each industry sector was updated to meet the increased rigor and relevancy requirements of the Common Core State Standards. The curriculum also includes the new Standards for Career Ready Practices.

Standards for Career Ready Practice

1. *Apply appropriate technical skills and academic knowledge.*
2. *Communicate clearly, effectively, and with reason.*
3. *Develop an education and career plan aligned with personal goals.*
4. *Apply technology to enhance productivity.*
5. *Utilize critical thinking to make sense of problems and persevere in solving them.*
6. *Practice personal health and understand financial literacy.*
7. *Act as a responsible citizen in the workplace and the community.*
8. *Model integrity, ethical leadership, and effective management.*
9. *Work productively in teams while integrating cultural and global competence.*
10. *Demonstrate creativity and innovation.*
11. *Employ valid and reliable research strategies.*
12. *Understand the environmental, social, and economic impacts of decisions.*

CTE Anchor Standards—Common Core English Language Arts Alignment

Anchor Standard 1: Academics

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the industry sector alignment matrix for identification of standards. Note: alignment listed within each sector.

Anchor Standard 2: Communications

Language Standard: Acquire and accurately use general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the (career and college) readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. LS 9-10, 11-12.6

Anchor Standard 3: Career Planning and Management

Speaking and Listening Standard: Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. SLS 11-12.2

Anchor Standard 4: Technology

Writing Standard: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information.

Anchor Standard 5: Problem Solving and Critical Thinking

Writing Standard: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem, narrow or broaden the inquiry when appropriate, and synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. WS 11-12.7

Anchor Standard 6: Health and Safety

Reading Standards for Science and Technical Subjects: Determine the meaning of symbols, keywords, and other domain-specific words and phrases as they are used in a specific scientific or technical context. RSTS 9-10, 11-12.4

Anchor Standard 7: Responsibility and Flexibility

Speaking and Listening Standard: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners, building on others' ideas and expressing their own clearly and persuasively. SLS 9-10, 11-12.1

Anchor Standard 8: Ethics and Legal Responsibilities

Speaking and Listening Standard: Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the work. SLS 11-2.1d

Anchor Standard 9: Leadership and Teamwork

Speaking and Listening Standard: Work with peers to promote civil, democratic discussions and decision making; set clear goals and deadlines; and establish individual roles as needed. SLS 11-12.1b

Anchor Standard 10: Technical Knowledge and Skills

Writing Standard: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. WS 11-12.6

Anchor Standard 11: Demonstration and Application

Demonstrate and apply the knowledge and skills contained in the industry-sector anchor standards, pathway standards, and performance indicators in the classroom, laboratory, and workplace settings, and the career technical student organization. Note: no alignment evident for this standard. WS 11-12.6

CTE Model Curriculum Standards—Industry Sectors and Pathways

Arts, Media, and Entertainment

D. Game Design and Integration Pathway

D1.0 Demonstrate understanding of current trends and the historical significance of both electronic and non-electronic games. Students will analyze different game systems and identify how these systems have influenced consumer technology.

D1.1 Research and analyze different game genres, including multiplayer games.

D1.2 Define and use necessary vocabulary related to games, their genres, game platforms, and game hardware.

D1.3 Research, compare, and categorize different game platforms and game hardware.

D1.4 Analyze the technology transfer from video games to other industries, such as education, medical, corporate training, and military simulation.

D2.0 Analyze the core tasks and challenges of video game design and explore the methods used to create and sustain player immersion.

D2.1 Identify and define the roles and responsibilities of each member of a video game design team.

D2.2 Break down and identify the fundamental building blocks of game play: player goals, player actions, rewards, and challenges.

D2.3 Research various input controls and display types then identify how these impact game play.

D2.5 Explore and explain the factors that create player immersion in a game.

D2.8 Prototype a small game using real-world objects, such as dice, cards, balls, pen and paper, etc.

D3.0 Acquire and apply appropriate game programming concepts and skills to develop a playable video game.

D3.1 Implement common programming concepts, including logic operators, conditional statements, loops, variables, events, actions, and handling user input.

D3.2 Understand the basics of game physics, including collision and motion.

D3.3 Examine the use of math and physics (such as gravity and friction) in game development.

D3.5 Implement a small video game utilizing mathematics and physics that features at least one moving object (such as a spaceship) which rotates along an axis and moves in whichever direction it is facing after rotation. The game must include collision physics.

D4.0 Students will demonstrate mastery of game art and multimedia, including music, sound, art, and animation.

D4.1 Demonstrate understanding of the elements of art, including line, shape, color, value, texture, space, and balance, to set the mood and feel of a scene.

D4.2 Research and describe the different perspectives used in video games, including first person, second person, and third person perspectives.

D4.3 Explain how to create the illusion of 3-D in a 2-D environment.

D4.4 Create 2-D art and 3-D models.

D4.5 Create an animation sequence.

D4.6 Design a game environment using lines, fills, and color to set a specific mood and feel of a scene.

D4.7 Create, record, and edit audio for a game.

D4.8 Define and discuss intellectual property, copyrights, trademarks, and piracy as they relate to art and multimedia assets in a game.

D4.9 Understand the basics of character design and development, world design, and level design.

D4.10 Create a storyboard for a game cut-scene applying the basic principles of design and concepts of cinematography.

D5.0 Demonstrate an understanding of testing techniques used to evaluate, assess, rate, and review quality assurance of video games.

D5.1 Test and analyze games to determine the quality of rules, interfaces, navigation, performance, and game play.

D5.5 Demonstrate technical reading and writing skills.

D5.6 Test a classmate's game project and create a bug report for the game. For each error submitted, write steps in sufficient detail so it is identifiable and reproducible to the developer. Use a metric to identify how critical the error is based on its negative impact on game play.

D6.0 Understand the general procedures, documentation, and requirements of large-scale game design projects. Examine and categorize the significant processes in the production of games.

D6.1 Identify processes of design and development from concept to production, including content creation, filling team roles, design documentation, communication, and scheduling for video game design teams.

D6.3 Develop design plans, character sketches, documentation, and storyboards for proposed games.

D6.4 Enumerate individual tasks of a project using basic time management skills to complete each task and track its completion.

D6.5 Describe the importance and interrelationship between development schedule and budget constraints in a video game design project.

D6.6 Compare and contrast common uses of different game development tools.

D6.7 Create a set of original design documents and build a small game.

D7.0 Understand the fundamentals of business and marketing, including entrepreneurship, global marketing, and localization.

D7.1 Identify, define, and discuss the different ways games are funded, distributed, marketed, and sold.

D7.4 Understand the components of marketing campaigns for games, including advertising in traditional and social media.

D7.5 Understand the role community management plays in marketing and business models.

D7.7 Evaluate game journalism and professional reviews in terms of bias.

D7.10 Create a plan for a game to target a specific audience within three different countries while adhering to their governments' rating systems.

D8.0 Understand the impact of games and the role of play in human culture. Analyze the ethics and global impact of the game industry.

D8.6 Explore and discuss the impact of video games on the economy.

D10.0 Students will build a game that demonstrates teamwork and project management by creating a game design production plan that describes the game play, outcomes, controls, rewards, interface, and artistic style of a video game.

D10.1 Use design documents to create a game design production plan.

D10.2 Solicit and accept constructive criticism.

D10.3 Use computer tools to create game programming, art, and audio.

D10.4 Create and use animated objects in a game.

D10.5 Create sound and music to enhance the game experience.

D10.7 Apply listening, speaking, and collaborative communication skills to effectively convey information.

ISTE Standards for Students

1. Empowered Learner- Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

a) Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them, and reflect on the learning process itself to improve learning outcomes.

b) Students build networks and customize their learning environments in ways that support the learning process.

c) Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways

d) Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

2. Digital Citizen- Students recognize the rights, responsibilities, and opportunities of living, learning, and working in an interconnected digital world, and they act and model in ways that are safe, legal, and ethical.

a) Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

b) Students engage in positive, safe, legal, and ethical behavior when using technology, including social interactions online or when using networked devices.

c) Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

d) Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

3.Knowledge Constructor- Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.

a) Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

b) Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources.

c) Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.

d Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.

4. Innovative Designer- Students use a variety of technologies within a design process to identify and solve problems creating new, useful, or imaginative solutions.

a) Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.

b) Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

c) Students develop, test, and refine prototypes as part of a cyclical design process.

d) Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.

5. Computational Thinker- Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

a) Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions.

b) Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

c) Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

d) Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using platforms, tools, styles, formats, and digital media appropriate for their goals.

a) Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

b) Students create original works or responsibly repurpose or remix digital resources into new creations.

c) Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.

d) Students publish or present content that customizes the message and medium for their intended audiences.

7. Global Collaborator- Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

a) Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.

b) Students use collaborative technologies to work with others, including peers, experts, or community members, to examine issues and problems from multiple viewpoints.

c) Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

d) Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.