DIGITAL GAME DEVELOPMENT STANDARDS

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NEVADA DEPARTMENT OF EDUCATION

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BUSINESS AND INDUSTRY VALIDATION

All CTE standards developed through the Nevada Department of Education are validated by business and industry through one or more of the following processes: (1) the standards are developed by a team consisting of business and industry representatives; or (2) a separate review panel was coordinated with industry experts to ensure the standards include the proper content; or (3) the adoption of nationally-recognized standards endorsed by business and industry.

The Digital Game Development standards were developed by a team that included business and industry representatives.

PROJECT COORDINATOR

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INTRODUCTION

The standards in this document are designed to clearly state what the student should know and be able to do upon completion of an advanced high school Digital Game Development program. These standards are designed for a three-credit course sequence that prepares the student for a technical assessment directly aligned to the standards.

These exit-level standards are designed for the student to complete all standards through their completion of a program of study. These standards are intended to guide curriculum objectives for a program of study.

The standards are organized as follows:

Content Standards are general statements that identify major areas of knowledge, understanding, and the skills students are expected to learn in key subject and career areas by the end of the program.

Performance Standards follow each content standard. Performance standards identify the more specific components of each content standard and define the expected abilities of students within each content standard.

Performance Indicators are very specific criteria statements for determining whether a student meets the performance standard. Performance indicators may also be used as learning outcomes, which teachers can identify as they plan their program learning objectives.

The crosswalk and alignment section of the document shows where the performance indicators support the English Language Arts and the Mathematics Common Core State Standards, and the Nevada State Science Standards. Where correlation with an academic standard exists, students in the Digital Game Development program perform learning activities that support, either directly or indirectly, achievement of one or more Common Core State Standards.

All students are encouraged to participate in the career and technical student organization (CTSO) that relates to their program area. CTSOs are co-curricular national associations that directly enforce learning in the CTE classroom through curriculum resources, competitive events, and leadership development. CTSOs provide students the ability to apply academic and technical knowledge, develop communication and teamwork skills, and cultivate leadership skills to ensure college and career readiness.

The Employability Skills for Career Readiness identify the “soft skills” needed to be successful in all careers, and must be taught as an integrated component of all CTE course sequences. These standards are available in a separate document.

The **Standards Reference Code** is only used to identify or align performance indicators listed in the standards to daily lesson plans, curriculum documents, or national standards.

Program Name	Standards Reference Code
Digital Game Development	DGD

Example: DGD.2.3.4

Standards	Content Standard	Performance Standard	Performance Indicator
Digital Game Development	2	3	4

CONTENT STANDARD 1.0 : EXPLORE THE DIGITAL GAME INDUSTRY	
PERFORMANCE STANDARD 1.1 : HISTORY OF THE GAME DEVELOPMENT	
1.1.1	Explain the history of computing technologies that impact the game development industry
1.1.2	Explore non-digital games
1.1.3	Research the evolution of video games
1.1.4	Describe the different game genres
1.1.5	Evaluate contributions of individual game designers and developers
PERFORMANCE STANDARD 1.2 : UNDERSTAND CAREERS IN GAME DESIGN AND DEVELOPMENT	
1.2.1	Explore careers as a game artist and sound designer
1.2.2	Describe the role of game designer
1.2.3	Explore careers as a game developer
1.2.4	Describe career pathways in quality assurance/testing
1.2.5	Explain the role of the producer
1.2.6	Explain the career path of an independent developer
1.2.7	Research salary structures in the industry
PERFORMANCE STANDARD 1.3 : DEMONSTRATE KNOWLEDGE OF INDUSTRY TERMINOLOGY	
1.3.1	Define common terminology and their acronyms
1.3.2	Identify the tools to develop a game (e.g., engine, application program interface [API], digital content creation tools, editors)
1.3.3	Communicate both in writing and verbally using appropriate industry terminology
1.3.4	Compare and contrast the entertainment software rating board (ESRB) ratings for game
PERFORMANCE STANDARD 1.4 : DEMONSTRATE KNOWLEDGE OF DESIGN THEORIES	
1.4.1	Explain the principles of visual design
1.4.2	Explain the elements of design
1.4.3	Analyze artwork/designs for specific design theories

CONTENT STANDARD 2.0 : UNDERSTAND FOUNDATIONS OF GAME DESIGN AND DEVELOPMENT	
PERFORMANCE STANDARD 2.1 : EXPLAIN FUNDAMENTALS OF PRODUCTION	
2.1.1	Identify the target audience of a game
2.1.2	Explain impact of "feature creep" on production
2.1.3	Explain the interdependence of team members between artistic, technical and production disciplines
2.1.4	Explain the purpose of prototyping
2.1.5	Outline in detail the process of developing a game from concept to delivery and support
2.1.6	Describe each step of the production process
2.1.7	Explain how the project is going to be managed according to a milestone plan
2.1.8	Explain the various types of collaboration tools
2.1.9	Utilize the production pipeline in the development of a game
2.1.10	Explain the value of version control
2.1.11	Explain the purpose of vertical slice
2.1.12	Demonstrate version control ie., Node Version Manager (NVM)
2.1.13	Demonstrate good quality assurance practices
PERFORMANCE STANDARD 2.2 : UNDERSTAND GAME STRUCTURE	
2.2.1	Explore the components of game structure
2.2.2	Analyze the essentials of storytelling
2.2.3	Write an outline of a nonlinear story
2.2.4	Create rules for a game
2.2.5	Compare conflict and outcomes
2.2.6	Develop objectives and outcomes for a game
2.2.7	Explain the importance of usability and how it impacts user experience
2.2.8	Explain in-game economies, motivators, and reward systems
PERFORMANCE STANDARD 2.3 : GAME DOCUMENTATION	
2.3.1	Research various styles of game documentation
2.3.2	Develop a technical design document (TDD)
2.3.3	Describe components of a game design document (GDD)
2.3.4	Produce a game design document
2.3.5	Produce a game pitch document
2.3.6	Present game documentation

PERFORMANCE STANDARD 2.4 : INDUSTRY STANDARD GAME MECHANICS	
2.4.1	Compare and contrast categories of game mechanics
2.4.2	Research victory condition mechanics of a game
2.4.3	Discuss relationship between game mechanics and game complexity and interaction
2.4.4	Incorporate game mechanics into a game

CONTENT STANDARD 3.0 : CREATE ASSETS FOR GAME DEVELOPMENT

PERFORMANCE STANDARD 3.1 : UNDERSTAND FUNDAMENTALS OF ART

3.1.1	Describe the role of typography
3.1.2	Evaluate the use of layout and composition
3.1.3	Explain color theory
3.1.4	Describe the principles of animation
3.1.5	Describe the role of perspective
3.1.6	Demonstrate 1 and 2 point perspective
3.1.7	Draw a proportionally correct figure
3.1.8	Describe the characteristics and purposes of 2D, 2.5D, and 3D art
3.1.9	Recognize the importance of and implement continuity of art style

PERFORMANCE STANDARD 3.2 : UNDERSTAND ENVIRONMENTS IN GAME DESIGN

3.2.1	Describe environments within a game
3.2.2	Compare process of creating an interior vs. exterior environment
3.2.3	Identify components in an environment
3.2.4	Generate terrains for a specific environment
3.2.5	Create hard surface assets
3.2.6	Create an environment
3.2.7	Develop organics for a specific environment

PERFORMANCE STANDARD 3.3 : DEVELOP A CHARACTER

3.3.1	Describe archetypes of characters
3.3.2	Explain character personalities and stereotypes
3.3.3	Compare and contrast methods to design characters
3.3.4	Describe the character's evolution throughout the game
3.3.5	Examine importance of non-player characters (NPC)
3.3.6	Construct character(s) for a game

PERFORMANCE STANDARD 3.4 : CREATE GAME ART

3.4.1	Conceptualize and illustrate original game characters and assets
3.4.2	Compare and contrast modeling methodologies (i.e., polygons, NURBS, splines)
3.4.3	Explain the application of low polygon and high polygon construction
3.4.4	Construct and manipulate polygonal objects
3.4.5	Utilize illustration to create assets
3.4.6	Apply texturing/surfacing/shading to models and normal mapping
3.4.7	Identify UVW mapping coordinates
3.4.8	Explain how lighting and shading affects form and surface
3.4.9	Establish a standard for world scale
3.4.10	Implement basic lighting concepts for ambient and artificial light

PERFORMANCE STANDARD 3.5 : APPLY ANIMATION TO GAME ASSETS	
3.5.1	Create a storyboard for planning animation
3.5.2	Change an object's state or position over time
3.5.3	Establish an object's relative speed
3.5.4	Describe the difference between forward and inverse kinematics
3.5.5	Examine the process of particle creation and their application to game design
3.5.6	Create a parent/child hierarchy
3.5.7	Create a joint/bone chain
3.5.8	Apply and adjust weight maps
3.5.9	Create atmospheric effects
3.5.10	Simulate a naturally occurring or mechanical cycle (i.e., walking)
3.5.11	Demonstrate the use of constraints to animate objects
3.5.12	Apply various animation techniques (i.e., pose-to-pose, straight ahead)
3.5.13	Adjust the dynamic properties (i.e., gravity, wind speed)
3.5.14	Simulate rigid body dynamics (e.g., shattering wall, breaking glass)
3.5.15	Utilize cinematography in animation
3.5.16	Apply animation to game assets
3.5.17	Describe the process of motion capture for animation

CONTENT STANDARD 4.0 : UNDERSTAND PROGRAMMING FOR DIGITAL GAME DEVELOPMENT	
PERFORMANCE STANDARD 4.1 : APPLY LOGIC TO GAME DEVELOPMENT	
4.1.1	Explain basic logic statements (e.g., if/then; cause/effect)
4.1.2	Describe uses of Boolean operators and symbols associated with them
4.1.3	Generate truth tables for game events
4.1.4	Examine different number systems (i.e., binary, decimal, hexadecimal, etc.)
4.1.5	Demonstrate proper use of order of operations
4.1.6	Convert mathematical formulas into code
4.1.7	Explain when to apply mathematical concepts common to game coding
4.1.8	Use logical thinking to create a diagram of code execution
PERFORMANCE STANDARD 4.2 : UNDERSTAND PROGRAMMING LANGUAGE CONCEPTS	
4.2.1	Differentiate between syntax and semantics
4.2.2	Incorporate primitive data types
4.2.3	Utilize arrays to store a list of primitive data types
4.2.4	Demonstrate input from different sources
4.2.5	Construct and register a callback function
4.2.6	Compare and contrast constants and variables
4.2.7	Select and implement conditional control
4.2.8	Implement functions
4.2.9	Select and implement iteration (i.e., loops, recursion, etc.)
4.2.10	Recognize and implement sequential control
4.2.11	Test and debug programs
4.2.12	Design and implement user-defined data types
4.2.13	Demonstrate output to different destinations
4.2.14	Practice object-oriented programming (OOP)
PERFORMANCE STANDARD 4.3 : ALGORITHMS	
4.3.1	Identify expected input and output
4.3.2	Utilize basic steps in algorithmic problem solving
4.3.3	Discuss top-down versus bottom-up development
4.3.4	Generate test cases and expected results
4.3.5	Apply simple data structures
4.3.6	Explain how algorithms are used to produce artificial intelligence (AI)

CONTENT STANDARD 5.0 : BUILD A GAME	
PERFORMANCE STANDARD 5.1 : EXPLORE 2D AND 3D GAME ENGINES	
5.1.1	Compare and contrast licensed vs. proprietary game engines
5.1.2	Debate the strengths and weaknesses of various game engines
5.1.3	Discuss the impact of a game engine on the development of a game
5.1.4	Explain how game engines work
PERFORMANCE STANDARD 5.2 : DIAGRAM GAME LEVELS	
5.2.1	Explain character advancement in relation to storyline and gameplay
5.2.2	Define the size of player environment
5.2.3	Explain location and purpose of non-player character (NPC)
5.2.4	Specify boundaries and borders of the levels within the game
5.2.5	Justify placement of triggers and scripted events
5.2.6	Develop a game with multiple levels
PERFORMANCE STANDARD 5.3 : UTILIZE GRAPHICAL USER INTERFACE (GUI)	
5.3.1	Research types of GUI
5.3.2	Recognize and implement required feedback for the GUI
5.3.3	Create a flowchart that maps the GUI's functionality
5.3.4	Design and implement a GUI using wireframes
PERFORMANCE STANDARD 5.4 : DESIGN CUSTOM MECHANICS	
5.4.1	Create a victory condition
5.4.2	Assemble immersive elements into a game
5.4.3	Establish a reward system and in-game economies
5.4.4	Apply game mechanics to game world
5.4.5	Balance and test game mechanics
PERFORMANCE STANDARD 5.5 : INTEGRATE MEDIA TYPES	
5.5.1	Integrate different types of audio (i.e., sound effects, ambient background, dialog, and score)
5.5.2	Practice creating sound loops
5.5.3	Determine acceptable media files for game development (i.e., sound, graphics, video)
5.5.4	Import appropriate media for a game
5.5.5	Incorporate feedback sounds

CONTENT STANDARD 6.0 : UNDERSTAND LEGAL AND ETHICAL ISSUES IN GAME DESIGN AND DEVELOPMENT	
PERFORMANCE STANDARD 6.1 : UNDERSTAND COPYRIGHT LAWS IN RELATIONSHIP TO GAME DEVELOPMENT	
6.1.1	Research laws that govern intellectual property in diverse forms
6.1.2	Evaluate Creative Commons and open source licensure
6.1.3	Cite the boundaries of third-party work
6.1.4	Explain copyright, trademarks, and other intellectual property protection
PERFORMANCE STANDARD 6.2 : UNDERSTAND SECURITY ISSUES IN RELATION TO GAME DEVELOPMENT AND DESIGN	
6.2.1	Explain invasion of privacy in the use of technology
6.2.2	Model acceptable security practices
6.2.3	Explore the issues of piracy and digital rights management (DRM)
PERFORMANCE STANDARD 6.3 : APPLY PERSONAL AND PROFESSIONAL ETHICS	
6.3.1	Analyze your personal digital footprint
6.3.2	Discuss social responsibility and issues concerning video gaming
6.3.3	Model legal and ethical use of information
6.3.4	Identify key elements of non-disclosure agreements (NDA) and contracts

CONTENT STANDARD 7.0 : PUBLISHING THE GAME	
PERFORMANCE STANDARD 7.1 : TARGET PLATFORMS	
7.1.1	Compare and contrast the benefits of various platforms and their target markets
7.1.2	Evaluate need for flexibility and scalability when developing for a PC
7.1.3	Explore development tools specific to various consoles
7.1.4	Research procedures to deliver a game to mobile markets
PERFORMANCE STANDARD 7.2 : MARKETING A GAME	
7.2.1	Pitch a project and defend why it is entertaining
7.2.2	Explain the role of social media in marketing
7.2.3	Describe crowd sourcing and crowd funding
7.2.4	Explain the merchandizing and branding behind video games
7.2.5	Analyze successful trailers
7.2.6	Explain the concept of localization and its impact on design
7.2.7	Describe various pay models, e.g., free-to-play, pay-to-play, single-user license, freemium

CONTENT STANDARD 8.0 : EXPLORE EMERGING TECHNOLOGIES	
PERFORMANCE STANDARD 8.1 : UNDERSTAND SOCIAL ASPECTS OF GAMING	
8.1.1	Describe integration of social components in a game
8.1.2	Explain the role of social media in the gaming community
8.1.3	Describe professional events in digital gaming
PERFORMANCE STANDARD 8.2 : UNDERSTAND THE ROLE OF NETWORKING	
8.2.1	Summarize characteristics of cloud gaming
8.2.2	Evaluate the advances of multi-player gaming
PERFORMANCE STANDARD 8.3 : EXPLORE ADVANCES IN DEVICES	
8.3.1	Discuss trends in input devices
8.3.2	Examine current trends in output devices and displays
8.3.3	Explore advances in peripheral devices

CROSSWALKS AND ALIGNMENTS OF DIGITAL GAME DEVELOPMENT STANDARDS AND THE COMMON CORE STATE STANDARDS, THE NEVADA SCIENCE STANDARDS, AND THE COMMON CAREER TECHNICAL CORE STANDARDS

CROSSWALKS (ACADEMIC STANDARDS)

The crosswalk of the Digital Game Development Standards shows links to the Common Core State Standards for English Language Arts and Mathematics and the Nevada Science Standards. The crosswalk identifies the performance indicators in which the learning objectives in the Digital Game Development program support academic learning. The performance indicators are grouped according to their content standard and are crosswalked to the English Language Arts and Mathematics Common Core State Standards and the Nevada Science Standards.

ALIGNMENTS (MATHEMATICAL PRACTICES)

In addition to correlation with the Common Core Mathematics Content Standards, many performance indicators support the Common Core Mathematical Practices. The following table illustrates the alignment of the Digital Game Development Standards Performance Indicators and the Common Core Mathematical Practices. This alignment identifies the performance indicators in which the learning objectives in the Digital Game Development program support academic learning.

CROSSWALKS (COMMON CAREER TECHNICAL CORE)

The crosswalk of the Digital Game Development Standards shows links to the Common Career Technical Core. The crosswalk identifies the performance indicators in which the learning objectives in the Digital Game Development program support the Common Career Technical Core. The Common Career Technical Core defines what students should know and be able to do after completing instruction in a program of study. The Digital Game Development Standards are crosswalked to the Information Technology Career Cluster™ and the Programming & Software Development Career Pathway.

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CROSSWALK OF DIGITAL GAME DEVELOPMENT STANDARDS AND THE COMMON CORE STATE STANDARDS

CONTENT STANDARD 1.0: EXPLORE THE DIGITAL GAME INDUSTRY

Performance Indicators	Common Core State Standards and Nevada Science Standards
1.1.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
1.1.2	**English Language Arts: Reading Standards for Informational Text** RI.11-12.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.
1.1.3	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.7 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; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
1.1.4	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. **English Language Arts: Speaking and Listening Standards** SL.11-12.2 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. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
1.1.5	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CONTENT STANDARD 2.0: UNDERSTAND FOUNDATIONS OF GAME DESIGN AND DEVELOPMENT

Performance Indicators	Common Core State Standards and Nevada Science Standards
2.1.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
2.1.3	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
2.1.4	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
2.1.5	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
2.1.6	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
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2.1.8	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
2.1.10	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
2.1.11	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
2.2.1	**English Language Arts: Reading Standards for Informational Text** RI.11-12.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text. **English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.
2.2.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards** W.11-12.3 Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

2.2.3	**English Language Arts: Writing Standards** W.11-12.3a Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. W.11-12.3b Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. W.11-12.3c Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution).
2.2.4	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
2.2.5	**English Language Arts: Writing Standards** W.11-12.3c Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution). W.11-12.3e Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.
2.2.6	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.1e Provide a concluding statement or section that follows from or supports the argument presented.
2.2.7	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

2.2.8	**English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. SL.11-12.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. **Math: Statistics and Probability – Making Inferences and Justifying Conclusions** SIC.A.2 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. SIC.B.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.
2.3.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
2.3.2	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. **Math: Algebra – Creating Equations** ACED.A.1 Create equations and inequalities in one variable and use them to solve problems. ACED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. ACED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. ACED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.
2.3.3	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

2.3.4	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
2.3.5	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
2.3.6	**English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. SL.11-12.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
2.4.1	**English Language Arts: Speaking and Listening Standards** SL.11-12.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. **English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
2.4.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.9 Draw evidence from informational texts to support analysis, reflection, and research.
2.4.3	**English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

CONTENT STANDARD 3.0: CREATE ASSETS FOR GAME DEVELOPMENT

Performance Indicators	Common Core State Standards and Nevada Science Standards
3.1.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.1.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.1.3	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.1.4	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

3.1.5	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.1.8	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.2.1	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
3.2.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.3.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards** W.11-12.3b Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

3.3.2	**English Language Arts: Writing Standards** W.11-12.3b Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters.
3.3.3	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.3.4	**English Language Arts: Writing Standards** W.11-12.3c Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution).
3.3.5	**English Language Arts: Writing Standards** W.11-12.3b Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. **English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2a Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
3.4.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. **English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.
3.4.3	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. **Math: Geometry – Modeling with Geometry** GMG.A.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).
3.4.4	**Math: Geometry – Modeling with Geometry** GMG.A.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

3.4.7	**Math: Geometry – Modeling with Geometry** GMG.A.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).
3.4.8	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.4.9	**Math: Geometry – Modeling with Geometry** GMG.A.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).
3.5.1	**English Language Arts: Writing Standards** W.11-12.3c Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution).
3.5.3	**Science: Physical Science** P.12.B.1 Students know laws of motion can be used to determine the effects of forces on the motion of objects.
3.5.4	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
3.5.5	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.7 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; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
3.5.13	**Science: Physical Science** P.12.B.4 Students know the strength of the gravitational force between two objects increases with mass and decreases rapidly with distance.
3.5.14	**Science: Physical Science** P.12.B.4 Students know the strength of the gravitational force between two objects increases with mass and decreases rapidly with distance.

3.5.17	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CONTENT STANDARD 4.0: UNDERSTAND PROGRAMMING FOR DIGITAL GAME DEVELOPMENT

Performance Indicators	Common Core State Standards and Nevada Science Standards
4.1.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
4.1.2	**English Language Arts: Speaking and Listening Standards** SL.11-12.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
4.1.3	**Math: Statistics and Probability – Conditional Probability and the Rules of Probability** SCP.A.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities.
4.1.4	**Math: Number & Quantity – Quantities** NQ.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
4.1.6	**Math: Functions – Building Functions** FBF.A.1a Determine an explicit expression, a recursive process, or steps for calculation from a context.
4.1.7	**Math: Functions – Building Functions** FBF.A.1a Determine an explicit expression, a recursive process, or steps for calculation from a context.
4.2.6	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Speaking and Listening Standards** SL.11-12.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well reasoned exchange of ideas. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
4.2.8	**Math: Functions – Building Functions** FBF.A.1b Combine standard function types using arithmetic operations. FBF.A.1c (+) Compose functions.

4.3.2	**Math: Algebra – Reasoning with Equations and Inequalities** AREI.A.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
4.3.3	**English Language Arts: Speaking and Listening Standards** SL.11-12.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. SL.11-12.2 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.
4.3.6	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CONTENT STANDARD 5.0: BUILD A GAME

Performance Indicators	Common Core State Standards and Nevada Science Standards
5.1.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
5.1.2	**English Language Arts: Speaking and Listening Standards** SL.11-12.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. SL.11-12.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well reasoned exchange of ideas. SL.11-12.1c Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.
5.1.3	**English Language Arts: Speaking and Listening Standards** SL.11-12.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. SL.11-12.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well reasoned exchange of ideas.
5.1.4	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
5.2.1	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
5.2.3	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
5.2.4	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

5.3.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.7 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; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. WHST.11-12.9 Draw evidence from informational texts to support analysis, reflection, and research.
5.4.3	**Math: Statistics and Probability – Making Inferences and Justifying Conclusions** SIC.A.2 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.
5.4.4	**Math: Statistics and Probability – Making Inferences and Justifying Conclusions** SIC.A.2 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.
5.4.5	**Math: Statistics and Probability – Making Inferences and Justifying Conclusions** SIC.B.5 Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.

CONTENT STANDARD 6.0: UNDERSTAND LEGAL AND ETHICAL ISSUES IN GAME DESIGN AND DEVELOPMENT

Performance Indicators	Common Core State Standards and Nevada Science Standards
6.1.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
6.1.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.7 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; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
6.1.3	**English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.7 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; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
6.1.4	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.7 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; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
6.2.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

6.2.3	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
6.3.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
6.3.4	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

CONTENT STANDARD 7.0: PUBLISHING THE GAME

Performance Indicators	Common Core State Standards and Nevada Science Standards
7.1.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
7.1.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
7.1.3	**English Language Arts: Reading Standards for Informational Text** RI.11-12.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
7.1.4	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
7.2.1	**English Language Arts: Speaking and Listening Standards** SL.11-12.2 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. SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

7.2.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
7.2.3	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.7 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; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
7.2.4	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
7.2.5	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

7.2.6	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Speaking and Listening Standards** SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
7.2.7	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CONTENT STANDARD 8.0: EXPLORE EMERGING TECHNOLOGIES

Performance Indicators	Common Core State Standards and Nevada Science Standards
8.1.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
8.1.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
8.1.3	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
8.2.1	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.2 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

8.2.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
8.3.1	**English Language Arts: Speaking and Listening Standards** SL.11-12.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well reasoned exchange of ideas. SL.11-12.2 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.
8.3.2	**English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
8.3.3	**English Language Arts: Reading Standards for Informational Text** RI.11-12.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text. **English Language Arts: Reading Standards for Literacy in Science and Technical Subjects** RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. **English Language Arts: Writing Standards for Literacy in Science and Technical Subjects** WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

ALIGNMENT OF DIGITAL GAME DEVELOPMENT STANDARDS AND THE COMMON CORE MATHEMATICAL PRACTICES

Common Core Mathematical Practices	Digital Game Development Performance Indicators
1. Make sense of problems and persevere in solving them.	4.2.8
2. Reason abstractly and quantitatively.	4.1.7, 4.2.6, 4.2.8, 4.3.2
3. Construct viable arguments and critique the reasoning of others.	
4. Model with mathematics.	3.5.8, 3.5.10
5. Use appropriate tools strategically.	
6. Attend to precision.	4.2.1, 4.3.5
7. Look for and make use of structure.	
8. Look for and express regularity in repeated reasoning.	4.2.7, 4.2.14

CROSSWALKS OF DIGITAL GAME DEVELOPMENT STANDARDS AND THE COMMON CAREER TECHNICAL CORE

Information Technology Career Cluster™ (IT)	Performance Indicators
1. Demonstrate effective professional communication skills and practices that enable positive customer relationships.	1.3.2 7.1.1 8.1.1
2. Use product or service design processes and guidelines to produce a quality information technology (IT) product or service.	1.2.4 2.1.3-2.1.8 3.4.1; 5.1.5
3. Demonstrate the use of cross-functional teams in achieving IT project goals.	1.2.1-1.2.6; 2.1.2
4. Demonstrate positive cyber citizenry by applying industry accepted ethical practices and behaviors.	6.1.3-6.1.4; 6.2.1-6.2.3 6.3.1-6.3.4
5. Explain the implications of IT on business development.	1.1.1, 1.1.5 2.1.2
6. Describe trends in emerging and evolving computer technologies and their influence on IT practices.	8.1.1-8.1.3 8.2.1-8.2.2; 8.3.1-8.3.3
7. Perform standard computer backup and restore procedures to protect IT information.	8.2.1
8. Recognize and analyze potential IT security threats to develop and maintain security requirements.	3.2.1-3.2.3
9. Describe quality assurance practices and methods employed in producing and providing quality IT products and services.	2.4.1-2.4.4 5.2.4, 5.3.5
10. Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.	3.2.1-3.2.3
11. Demonstrate knowledge of the hardware components associated with information systems.	1.1.1, 1.1.3
12. Compare key functions and applications of software and determine maintenance strategies for computer systems.	2.2.1

Programming & Software Development Career Pathway (IT-PRG)	Performance Indicators
1. Analyze customer software needs and requirements.	2.1.1, 2.2.6, 2.2.7 5.1.1-5.1.3; 5.2.1-5.2.6 5.3.2-5.3.3; 5.4.3-5.4.5 5.5.4 7.1.2-7.1.4
2. Demonstrate the use of industry standard strategies and project planning to meet customer specifications.	1.3.1-1.3.4; 1.4.1-1.4.3 2.1.2-2.1.11; 2.3.1-2.3.6
3. Analyze system and software requirements to ensure maximum operating efficiency.	2.2.1-2.2.8; 2.4.1-2.4.4
4. Demonstrate the effective use of software development tools to develop software applications.	1.3.2 2.4.1-2.4.4; 3.2.4-3.2.7 3.4.4-3.4.8; 3.5.2-3.5.17
5. Apply an appropriate software development process to design a software application.	2.1.1-2.1.11 5.2.6; 5.3.3, 5.3.4
6. Program a computer application using the appropriate programming language.	4.1.1-4.1.8; 4.2.1-4.2.14 4.3.1-4.3.5; 5.3.3, 5.3.4
7. Demonstrate software testing procedures to ensure quality products.	2.1.4 4.2.14; 5.4.5
8. Perform quality assurance tasks as part of the software development cycle.	2.1.2
9. Perform software maintenance and customer support functions.	2.1.4; 2.1.9
10. Design, create and maintain a database.	NA