



## AUBURN SCHOOL DISTRICT #408

<b>Course: Video Game / Interactive Media Design 1-4</b>	<b>Total Framework Hours up to: 90/180/270/360</b>
<b>CIP Code: 110803</b> <input type="checkbox"/> Exploratory <input checked="" type="checkbox"/> Preparatory	<b>Date Last Modified: June 12, 2016</b>
<b>Career Cluster: Science Technology Engineering Mathematics</b>	<b>Cluster Pathway: : Arts, Audio/Video Technology &amp; Communications</b>

**Course Summary:** This course focuses on the software, hardware, and mathematical tools used to represent, display, and manipulate topological, 2D & 3D objects on a video screen and prepares individuals to function as computer graphics/video game development specialists. Includes instruction in graphics software and systems; computer programming; digital multimedia; graphic design; video game design and development; graphics devices, processors, and standards; attributes and transformations; projections; surface identification and rendering; color theory; algebra; geometry; trigonometry and introduction to various mathematical concepts related to interactive computer and computer graphic-based applications.

This course is being run as a 4 semester/2 year program. Information and depth is accomplished by scaffolding on previous knowledge acquired in this program or from previous knowledge/training learned. The instructor will use differentiated instruction to assess and build skill and knowledge.

**Resources and Standards used in Framework Development:** DigiPen Institute of Technology, Academy of Interactive Entertainment and Washington State Animation instructors, STEMfuse

### Unit Outline

	<u>Hours</u>
Unit 1: Career Planning	10
Unit 2: Personal Success	10
Unit 3: Employability and Entrepreneurship	10
Unit 4: Problem solving	10
Unit 5: Teamwork and Cooperation	20
Unit 6: Foundational Skills	10
Unit 7: Computer Science and Applied Programing	64
Unit 8: Applied Math Concepts	66
Unit 9: Art and Design Concepts	64
Unit 10: Video Game / Interactive Media Design Concepts	96
<b>Total Hours</b>	<b><u>360</u></b>

**NOTE: Leadership and Employability Skills / 21<sup>st</sup> Century Skills are integrated throughout every unit in this course so that is why the same skills are mentioned in multiple units.**

<b>Unit: 1 Career Planning</b>		<b>Total Learning Unit Hours: 10</b> (2.5 per sem)
<b>Performance Assessments:</b> Students will prepare a report covering the career pathway in Video Game / Interactive Media Design. The report should include an assessment of personal strengths for success in this particular field.		
<b>Leadership Alignment:</b> <b>Think Creatively</b> – Students will complete assignments/projects; ones that require students to think creatively using their foundational knowledge to design and create video games that are marketable to a targeted audience. 1. A.2 Create new and worthwhile ideas (both incremental and radical concepts). <b>Communicate Clearly</b> – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success. 3. B.3 Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts. <b>Access and Evaluate Information</b> – Students will complete assignments/projects; ones that require researching information by using search engines and websites via the Internet. <b>Use and Manage Information</b> – Students will complete assignments/projects; ones that require using search engines and websites via the Internet. <b>Analyze Media</b> – Students will complete assignments/projects; ones that require using search engines and websites via the Internet, comparing information from multiple websites to validate the information. <b>Apply Technology Effectively</b> – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom. <b>Manage Goals and Time</b> – Students will complete assignments/projects; ones that require the setting of short-term goals with a deadline for completing the goals. <b>Work Independently</b> – Students will complete assignments/projects; ones that require work to be done without or minimal direct instruction or oversight.		
<b><i>Standards and Competencies</i></b>		
WR – 1.1 Explore the career clusters as defined by the U.S. Department of Education and summarize the career opportunities in a cluster of personal interest.		
WR – 1.2 Determine academic/training or certification requirements for transition from one learning level to the next and explore opportunities for earning credit/certifications in high school such as advanced placement, tech prep, International Baccalaureate, college in the high school, military and apprenticeship opportunities.		
WR – 1.3 Prepare a program of study for at least one career of interest.		
WR – 1.4 Apply knowledge gained from individual assessment to a set of goals and a career plan.		
WR – 1.5 Develop strategies to make an effective transition from school to career.		
WR – 1.6 Identify industry certification opportunities.		
<b><i>Aligned Washington State Standards</i></b>		
<b>Educational Technology</b>	1.3.2 – Locate and organize information from a variety of sources and media.	
	1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.	

	<p>2.1 – Practice Safety: Demonstrate safe, legal and ethical behavior in the use of information and technology.</p> <p>2.2.1 – Develop skills to use technology effectively.</p> <p>2.3 – Select and Use Applications: Use productivity tools and common applications effectively and constructively.</p> <p>2.4 – Adapt to Change (Technology Fluency): Transfer current knowledge to new and emerging technologies.</p>
<b>Health and Fitness</b>	2.4 – Acquire skills to live safely and reduce health risks
<b>Reading-CCSS</b>	<p><b>Craft and Structure:</b></p> <p>4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p><b>Integration of knowledge and ideas:</b></p> <p>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.</p>
<b>Writing-CCSS</b>	<p><b>Text types and purposes:</b></p> <p>2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <p><b>Research to build and present knowledge:</b></p> <p>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.</p> <p>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 to citation.</p> <p>9. Draw evidence from informational texts to support analysis, reflection, and research.</p>

**Performance Assessments:**

Show up to class on-time/regularly and ready to work. Research positions open within a variety of companies and compare / contrast their descriptions, duties, and expectations. Participate in a Career Research assignment.

**Leadership Alignment:**

**Think Creatively** – Students will complete assignments/projects; ones that require students to think creatively using their foundational knowledge to design and create video games that are marketable to a targeted audience.

**Work Creatively with Others** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Solve Problems** – Students will complete assignments/projects; ones that require demonstrating their competency of their problem solving skills through constant evaluation and testing of games.

**Communicate Clearly** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Collaborate with Others** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Access and Evaluate Information** – Students will complete assignments/projects; ones that require researching information by using search engines and websites via the Internet.

4. A.1 Access information efficiently (time) and effectively (sources).

**Use and Manage Information** – Students will complete assignments/projects; ones that require using search engines and websites via the Internet.

**Analyze Media** – Students will complete assignments/projects; ones that require using search engines and websites via the Internet, comparing information from multiple websites to validate the information.

**Create Media Products** – Students will complete projects; ones that require the use of industry recognized game/multi-media development software to design fully functioning game.

**Apply Technology Effectively** – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.

**Manage Goals and Time** – Students will complete assignments/projects; ones that require the setting of short-term goals with a deadline for completing the goals.

**Work Independently** – Students will complete assignments/projects; ones that require work to be done without or minimal direct instruction or oversight.

**Interact Effectively with Others** – Students will participate in and complete group projects; ones that require students to work together which provides them the ability to demonstrate and practice their interpersonal skills and problem solving skills.

**Work Effectively with Diverse Teams** – Students will participate in and complete group projects; ones that require students to work together which provides them the ability to demonstrate and practice their interpersonal skills and problem solving skills.

**Manage Projects** – Students will complete assignments/projects; ones that require deadlines to be set for working through the entire assignment/project from start-to-finish to meet a due date.

10.A 1 Set and meet goals, even in the face of obstacles and competing pressures.

**Produce Results** – Students will complete projects; ones that require knowledge and skills to plan, design, and build their games.

**Guide and Lead Others** – Students will participate in and complete group projects; ones that require demonstration of interpersonal skills, problem solving skills and relationship building to act responsibly to one another in the classroom and to those outside of the classroom specifically for the purpose of projects related to the class when working within a group.

*Standards and Competencies*

- WR – 2.1 Implement effective study skills for academic success.
- WR – 2.2 Use interpersonal skills to facilitate effective teamwork.
- WR – 2.3 Use a problem-solving model and critical-thinking skills to make informed decisions.
- WR – 2.4 Use effective time-management and goal-setting strategies.
- WR – 2.5 Effectively use information and communication technology tools.
- WR – 2.6 Identify skills that can be transferable among a variety of careers.

*Aligned Washington State Standards*

<b>Educational Technology</b>	<ul style="list-style-type: none"> <li>1.3.2 – Locate and organize information from a variety of sources and media.</li> <li>1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.</li> <li>2.1.2 – Practice ethical and respectful behavior.</li> <li>2.2.1 – Develop skills to use technology effectively.</li> <li>2.3.1 – Select and use common applications.</li> <li>2.4.1 – Formulate and synthesize new knowledge.</li> </ul>
<b>Health and Fitness</b>	2.4 – Acquire skills to live safely and reduce health risks
<b>Reading-CCSS</b>	<p><b>Craft and Structure:</b></p> <p>4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p><b>Integration of knowledge and ideas:</b></p> <p>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.</p>
<b>Writing-CCSS</b>	<p><b>Text types and purposes:</b></p> <p>2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <p><b>Research to build and present knowledge:</b></p> <p>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.</p> <p>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 to citation.</p> <p>9. Draw evidence from informational texts to support analysis, reflection, and research.</p>

<b>Unit: 3 Employability and Entrepreneurship</b>	<b>Total Learning Unit Hours: 10</b> (2.5 per sem)
<p><b>Performance Assessments:</b> Students will prepare a report covering the requirements for training, certification, licensing and the personal characteristics required for employment in that career. The report should include an assessment of personal strengths for success in that particular field.</p>	
<p><b>Leadership Alignment:</b>  <b>Communicate Clearly</b> – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.  <b>Access and Evaluate Information</b> – Students will complete assignments/projects; ones that require researching information by using search engines and websites via the Internet.  <b>Use and Manage Information</b> – Students will complete assignments/projects; ones that require using search engines and websites via the Internet.  4. B.1 Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information.  <b>Apply Technology Effectively</b> – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.  <b>Manage Goals and Time</b> – Students will complete assignments/projects; ones that require the setting of short-term goals with a deadline for completing the goals.  <b>Work Independently</b> – Students will complete assignments/projects; ones that require work to be done without or minimal direct instruction or oversight.  8. B1. Monitor defines, prioritize and complete tasks without direct oversight</p>	
<i><b>Standards and Competencies</b></i>	
<p>WR – 3.1 Demonstrate effective verbal, nonverbal, written, and electronic communication skills.  WR – 3.2 Evaluate the impact of positive and negative personal choices, including use of electronic communications such as social networking sites.  WR – 3.3 Model characteristics of effective leadership, teamwork, and conflict management.  WR – 3.4 Recognize the importance of a healthy lifestyle, including the ability to manage stress.  WR – 3.5 Explore and model characteristics necessary for professional success such as work ethics, integrity, dedication, perseverance, and the ability to interact with a diverse population.  WR – 3.6 Complete activities using project- and time-management techniques.  WR – 3.7 Identify and model appropriate grooming and appearance for the workplace.  WR – 3.8 Demonstrate dependability, punctuality, and initiative.  WR – 3.9 Model appropriate business and personal etiquette in the workplace.  WR – 3.10 Exhibit productive work habits, ethical practices, and a positive attitude.  WR – 3.11 Demonstrate the ability to work with the other employees to support the organization and complete assigned tasks.  WR – 3.12 Demonstrate willingness to learn and further develop skills.  WR – 3.13 Describe the importance of having a positive attitude and techniques that boost morale.  WR – 3.14 Show initiative by coming up with unique solutions and taking on extra responsibilities.  WR – 3.15 Explain the importance of setting goals and demonstrate the ability to set, reach, and evaluate goals.  WR – 3.16 Explain the importance of taking pride in work accomplished and extrinsic and intrinsic motivators that can be used to increase pride.</p>	

WR – 3.17 Identify how to prioritize work to fulfill responsibilities and meet deadlines.

*Aligned Washington State Standards*

**Educational Technology**

- 1.3.2 – Locate and organize information from a variety of sources and media.
- 1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.
- 2.1.2 – Practice ethical and respectful behavior.
- 2.2.1 – Develop skills to use technology effectively.
- 2.3.1 – Select and use common applications.
- 2.3.2 – Select and use online applications.
- 2.4.1 – Formulate and synthesize new knowledge.

**Health and Fitness**

- 2.4 – Acquire skills to live safely and reduce health risks

**Reading-CCSS**

**Craft and Structure:**

- 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.

**Integration of knowledge and ideas:**

- 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.

**Writing-CCSS**

**Text types and purposes:**

- 2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

**Research to build and present knowledge:**

- 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.
- 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 to citation.
- 9. Draw evidence from informational texts to support analysis, reflection, and research.

**Performance Assessments:**

Students will demonstrate their competency of their problem solving skills during formative assessments. Teacher will observe and support students in recovering any skills that are insufficient.

**Leadership Alignment:**

**Think Creatively** – Students will complete assignments/projects; ones that require students to think creatively using their foundational knowledge to design and create video games that are marketable to a targeted audience.

**Work Creatively with Others** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Solve Problems** – Students will complete assignments/projects; ones that require demonstrating their competency of their problem solving skills through constant evaluation and testing of games.

2. D.1 Solve different kinds of non-familiar problems in both conventional and innovative ways.

2. D.2 Identify and ask significant questions that clarify various points of view and lead to better solutions.

**Communicate Clearly** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Collaborate with Others** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Access and Evaluate Information** – Students will complete assignments/projects; ones that require researching information by using search engines and websites via the Internet.

**Use and Manage Information** – Students will complete assignments/projects; ones that require using search engines and websites via the Internet.

**Analyze Media** – Students will complete assignments/projects; ones that require using search engines and websites via the Internet, comparing information from multiple websites to validate the information.

**Create Media Products** – Students will complete projects; ones that require the use of industry recognized game/multi-media development software to design fully functioning game.

**Apply Technology Effectively** – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.

**Manage Goals and Time** – Students will complete assignments/projects; ones that require the setting of short-term goals with a deadline for completing the goals.

**Work Independently** – Students will complete assignments/projects; ones that require work to be done without or minimal direct instruction or oversight.

**Interact Effectively with Others** – Students will participate in and complete group projects; ones that require students to work together which provides them the ability to demonstrate and practice their interpersonal skills and problem solving skills.

**Work Effectively with Diverse Teams** – Students will participate in and complete group projects; ones that require students to work together which provides them the ability to demonstrate and practice their interpersonal skills and problem solving skills.

**Manage Projects** – Students will complete assignments/projects; ones that require deadlines to be set for working through the entire assignment/project from start-to-finish to meet a due date.

**Produce Results** – Students will complete projects; ones that require knowledge and skills to plan, design, and build their games.



**Guide and Lead Others** – Students will participate in and complete group projects; ones that require demonstration of interpersonal skills, problem solving skills and relationship building to act responsibly to one another in the classroom and to those outside of the classroom specifically for the purpose of projects related to the class when working within a group.

***Standards and Competencies***

- WR – 4.1 Employ critical thinking skills independently and in teams to solve problems and make decisions.
- WR – 4.2 Employ critical thinking and interpersonal skills to resolve conflicts.
- WR – 4.3 Identify and document workplace performance goals and monitor progress toward those goals.
- WR – 4.4 Conduct technical research to gather information necessary for decision-making.
- WR – 4.5 Explain the importance and dynamics of individual and teamwork approaches of problem solving.
- WR – 4.6 Describe methods of researching and validating reliable information relevant to the problem.
- WR – 4.7 Explain strategies used to formulate ideas, proposals and solutions to problems.
- WR – 4.8 Select potential solutions based on reasoned criteria.
- WR – 4.9 Implement and evaluate solution(s).

***Aligned Washington State Standards***

<b>Art</b>	<ul style="list-style-type: none"> <li>1.1 – Understands and applies visual arts concepts and vocabulary.</li> <li>3.2 – Uses visual arts to communicate for a specific purpose.</li> <li>4.5 – Understands how arts knowledge and skills are used in the world of work, including careers in the arts.</li> <li>2.1 – Applies a creative process to visual arts.</li> </ul>
<b>Communications</b>	<p><b>Comprehension and Collaboration:</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul>
<b>Educational Technology</b>	<ul style="list-style-type: none"> <li>1.1 – Demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.</li> <li>1.2.1 – Communicate and collaborate to learn with others.</li> <li>1.3.1 – Identify and define authentic problems and significant questions for investigation and plan strategies to guide inquiry.</li> <li>1.3.2 – Locate and organize information from a variety of sources and media.</li> <li>1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.</li> <li>2.1.2 – Practice ethical and respectful behavior.</li> <li>2.2.1 – Develop skills to use technology effectively.</li> <li>2.2.2 – Use a variety of hardware to support learning.</li> <li>2.3.1 – Select and use common applications.</li> <li>2.3.2 – Select and use online applications.</li> <li>2.4.1 – Formulate and synthesize new knowledge.</li> </ul>
<b>Health and Fitness</b>	<ul style="list-style-type: none"> <li>2.4 – Acquire skills to live safely and reduce health risks</li> </ul>
<b>Reading-CCSS</b>	<p><b>Craft and Structure:</b></p> <ul style="list-style-type: none"> <li>4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</li> </ul> <p><b>Integration of knowledge and ideas:</b></p>

	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.
<b>Mathematics-CCSS</b>	<p><b>Standards for Mathematical Practices:</b></p> <ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> </ol>
<b>Writing-CCSS</b>	<p><b>Text types and purposes:</b></p> <ol style="list-style-type: none"> <li>2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</li> </ol> <p><b>Research to build and present knowledge:</b></p> <ol style="list-style-type: none"> <li>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.</li> <li>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 to citation.</li> </ol>

**Performance Assessments:**

Working in teams, students will select and complete a comprehensive group design project, i.e., one that requires using such leadership skills as goal setting, advocacy, communication, parliamentary procedure, etc. to assure project success. Assessed by Advisory board members and instructor.

**Leadership Alignment:**

**Think Creatively** – Students will complete assignments/projects; ones that require students to think creatively using their foundational knowledge to design and create video games that are marketable to a targeted audience.

**Work Creatively with Others** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

1. B.2 Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work.

1. B.3 Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas.

**Solve Problems** – Students will complete assignments/projects; ones that require demonstrating their competency of their problem solving skills through constant evaluation and testing of games.

**Communicate Clearly** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Collaborate with Others** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Apply Technology Effectively** – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.

**Manage Goals and Time** – Students will complete assignments/projects; ones that require the setting of short-term goals with a deadline for completing the goals.

**Interact Effectively with Others** – Students will participate in and complete group projects; ones that require students to work together which provides them the ability to demonstrate and practice their interpersonal skills and problem solving skills.

**Work Effectively with Diverse Teams** – Students will participate in and complete group projects; ones that require students to work together which provides them the ability to demonstrate and practice their interpersonal skills and problem solving skills.

**Manage Projects** – Students will complete assignments/projects; ones that require deadlines to be set for working through the entire assignment/project from start-to-finish to meet a due date.

**Guide and Lead Others** – Students will participate in and complete group projects; ones that require demonstration of interpersonal skills, problem solving skills and relationship building to act responsibly to one another in the classroom and to those outside of the classroom specifically for the purpose of projects related to the class when working within a group.

***Standards and Competencies***

WR – 5.1 Employ leadership skills to accomplish organizational goals and objectives.

WR – 5.2 Establish and maintain effective working relationships with others in order to accomplish objectives and tasks.

WR – 5.3 Conduct and participate in meetings to accomplish work tasks.

WR – 5.4 Employ mentoring skills to inspire and teach others.

WR – 5.5 Cooperates rather than compete with team members

WR – 5.6 Offers/seeks suggestions, opinions, and information to team members.

WR – 5.7 Listens to and considers the ideas of team members.

WR – 5.8 Supports group decision even if not in total agreement.  
 WR – 5.9 Communicates changes or problems to team members.  
 WR – 5.10 Treat everybody with respect and understanding  
 WR – 5.11 Employ mentoring skills to inspire and teach others.

*Aligned Washington State Standards*

<p><b>Communications-CCSS</b></p>	<p><b>Comprehension and Collaboration:</b>          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.          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.</p>
<p><b>Educational Technology</b></p>	<p>1.1 – Demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.          1.2.1 – Communicate and collaborate to learn with others.          1.3.1 – Identify and define authentic problems and significant questions for investigation and plan strategies to guide inquiry.          1.3.2 – Locate and organize information from a variety of sources and media.          1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.          2.1.1 – Practice personal safety.          2.1.2 – Practice ethical and respectful behavior.          2.2.1 – Develop skills to use technology effectively.          2.2.2 – Use a variety of hardware to support learning.          2.3.1 – Select and use common applications.          2.3.2 – Select and use online applications.          2.4.1 – Formulate and synthesize new knowledge.</p>
<p><b>Health and Fitness</b></p>	<p>2.4 – Acquire skills to live safely and reduce health risks</p>
<p><b>Reading-CCSS</b></p>	<p><b>Craft and Structure:</b>          4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.  <b>Integration of knowledge and ideas:</b>          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.</p>
<p><b>Writing-CCSS</b></p>	<p><b>Text types and purposes:</b>          2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p>

<b>Unit: 6 Foundational Skills</b>	<b>Total Learning Unit Hours: 10</b> (2.5 per sem)
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**Performance Assessments:**  
 Students will demonstrate their competency in these foundational skills during the formative assessment. Teacher will observe and support students in recovering any skills that are insufficient.

**Leadership Alignment:**  
**Solve Problems** – Students will complete assignments/projects; ones that require demonstrating their competency of their problem solving skills through constant evaluation and testing of games.  
 2. D.1 Solve different kinds of non-familiar problems in both conventional and innovative ways.  
 2. D.2 Identify and ask significant questions that clarify various points of view and lead to better solutions.  
**Communicate Clearly** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.  
**Use and Manage Information** – Students will complete assignments/projects; ones that require using search engines and websites via the Internet.  
**Apply Technology Effectively** – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.  
**Create Media Products** – Students will complete projects; ones that require the use of industry recognized game/multi-media development software to design fully functioning game.

*Standards and Competencies*

F – 1.1 Remedial Computer Knowledge – Students will have comfort working in, saving, and retrieving files, accessing network folders in a windowing OS environment.  
 F – 1.2 Mathematical Baseline – All students must demonstrate a solid ability to think algebraically.  
 F – 1.3 Art and Design – Students must be willing to express themselves in traditional and electronic visual media.  
 F – 1.4 Safety – Students will demonstrate an ability to work safely with computers including correct ergonomics and respect for electronic machinery.

*Aligned Washington State Standards*

<b>Art</b>	1.1 – Understands and applies visual arts concepts and vocabulary. 1.2 – Develops visual arts skills and techniques.
<b>Educational Technology</b>	1.3.2 – Locate and organize information from a variety of sources and media. 2.1.1 – Practice personal safety. 2.1.2 – Practice ethical and respectful behavior. 2.2.1 – Develop skills to use technology effectively. 2.2.2 – Use a variety of hardware to support learning. 2.3.1 – Select and use common applications. 2.3.2 – Select and use online applications. 2.4.1 – Formulate and synthesize new knowledge.
<b>Health and Fitness</b>	2.4 – Acquire skills to live safely and reduce health risks
<b>Reading-CCSS</b>	<b>Craft and Structure:</b> 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.

	<p><b>Integration of knowledge and ideas:</b>  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.</p>
<b>Writing-CCSS</b>	<p><b>Research to build and present knowledge:</b>  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 to citation.  9. Draw evidence from informational texts to support analysis, reflection, and research.</p>
<b>Mathematics-CCSS</b>	<p><b>Standards for Mathematical Practices:</b>  1. Make sense of problems and persevere in solving them.  5. Use appropriate tools strategically.  <b>The Complex Number System (N-CN):</b>  Perform arithmetic operations with complex numbers</p>

**Performance Assessments:**

Students will demonstrate their programming knowledge by successful completion of multiple, progressive, game/app projects utilizing the practices listed below. Students will also be able to converse in terminology appropriate to the video game and interactive media design industry. Each Semester programming and projects are scaffold to increase knowledge.

**Leadership Alignment:**

**Solve Problems** – Students will complete assignments/projects; ones that require demonstrating their competency of their problem solving skills through constant evaluation and testing of games.

**Use and Manage Information** – Students will complete assignments/projects; ones that require using search engines and websites via the Internet.

**Create Media Products** – Students will complete projects; ones that require the use of industry recognized game/multi-media development software to design fully functioning game.

**Apply Technology Effectively** – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.

**Work Independently** – Students will complete assignments/projects; ones that require work to be done without or minimal direct instruction or oversight.

**Manage Projects** – Students will complete assignments/projects; ones that require deadlines to be set for working through the entire assignment/project from start-to-finish to meet a due date.

10. A.1 Set and meet goals, even in the face of obstacles and competing pressures.

10. A.2 Prioritize, plan and manage work to achieve the intended result

**Produce Results** – Students will complete projects; ones that require knowledge and skills to plan, design, and build their games.

***Standards and Competencies***

- C – 1.1 Vocabulary
- C – 1.2 Intro to programming languages
- C – 1.3 Intro to problem solving
- C – 1.4 Variable types
- C – 1.5 Data types
- C – 1.6 Variables
- C – 1.7 Operators and operands
- C – 1.8 Statements
- C – 1.9 Expressions
- C – 1.10 Functions and function calls
- C – 1.11 Functions with arguments
- C – 1.12 Object Oriented Programming (abstraction, encapsulation)
- C – 1.13 Classes and objects
- C – 1.14 Structures
- C – 1.15 One-dimensional arrays
- C – 1.16 Two-dimensional arrays
- C – 1.17 File saving

C – 1.18 File loading	
<i>Aligned Washington State Standards</i>	
<b>Art</b>	<p>1.1 – Understands and applies visual arts concepts and vocabulary.</p> <p>1.2 – Develops visual arts skills and techniques.</p> <p>2.1 – Applies a creative process to visual arts.</p> <p>3.2 – Uses visual arts to communicate for a specific purpose.</p> <p>4.5 – Understands how arts knowledge and skills are used in the world of work, including careers in the arts.</p>
<b>Communications-CCSS</b>	<p><b>Comprehension and Collaboration:</b></p> <p>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.</p> <p>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.</p>
<b>Educational Technology</b>	<p>1.1 – Demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.</p> <p>1.2.1 – Communicate and collaborate to learn with others.</p> <p>1.3.1 – Identify and define authentic problems and significant questions for investigation and plan strategies to guide inquiry.</p> <p>1.3.2 – Locate and organize information from a variety of sources and media.</p> <p>1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.</p> <p>2.1.1 – Practice personal safety.</p> <p>2.1.2 – Practice ethical and respectful behavior.</p> <p>2.2.1 – Develop skills to use technology effectively.</p> <p>2.2.2 – Use a variety of hardware to support learning.</p> <p>2.3.1 – Select and use common applications.</p> <p>2.3.2 – Select and use online applications.</p> <p>2.4.1 – Formulate and synthesize new knowledge.</p>
<b>Health and Fitness</b>	<p>2.4 – Acquire skills to live safely and reduce health risks</p>
<b>Math-CCSS</b>	<p><b>Standards for Mathematical Practices:</b></p> <p>2. Reason abstractly and quantitatively.</p> <p>3. Construct viable arguments and critique the reasoning of others</p> <p>5. Use appropriate tools strategically</p> <p>8. Look for an express regularity in repeated reasoning</p> <p><b>Quantities (N-Q):</b></p> <p>Reasons quantitatively and use units to solve problems</p> <p><b>Seeing Structure In Expressions (A-SSE):</b></p> <p>Interpret the structure of expressions</p> <p>Write expressions in equivalent forms to solve problems</p>



	<p><b>Creating Equations (A-CED):</b> Create equations that describe numbers or relationships</p> <p><b>Reasoning with Equations and Inequalities (A-REI):</b> Solve systems of equations</p> <p><b>Interpreting Functions (F-IF):</b> Understand the concepts of a function and use function notation Interpret functions that arise in applications in terms of the context</p> <p><b>Building Functions (F-BF):</b> Build a function that models a relationship between two quantities Build new functions from existing functions</p> <p><b>Congruence (G-CO):</b> Make geometric constructions</p> <p><b>Geometric Measurement and Dimension (G-GMD):</b> Visualize relationships between two-dimensional and three-dimensional objects</p> <p><b>Modeling with Geometry (G-MG):</b> Apply geometric concepts in modeling situations</p>
<p><b>Reading-CCSS</b></p>	<p><b>Craft and Structure:</b> 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p><b>Integration of knowledge and ideas:</b> 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.</p>
<p><b>Writing-CCSS</b></p>	<p><b>Text types and purposes:</b> 2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <p><b>Research to build and present knowledge:</b> 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. 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 to citation. 9. Draw evidence from informational texts to support analysis, reflection, and research.</p>

<b>Unit: 8 Applied Mathematics Concepts</b>		<b>Total Learning Unit Hours: 66</b> (16.5 per sem)
<p><b>Performance Assessments:</b> Students will demonstrate their understanding of math concepts by successful completion of multiple, progressive, game/app projects utilizing the practices listed below. Students will also be able to converse in terminology appropriate to the video game and interactive media design industry.</p>		
<p><b>Leadership Alignment:</b></p> <p><b>Solve Problems</b> – Students will complete assignments/projects; ones that require demonstrating their competency of their problem solving skills through constant evaluation and testing of games.</p> <p>2. D.1 Solve different kinds of non-familiar problems in both conventional and innovative ways.</p> <p>2. D.2 Identify and ask significant questions that clarify various points of view and lead to better solutions.</p> <p><b>Use and Manage Information</b> – Students will complete assignments/projects; ones that require using search engines and websites via the Internet.</p> <p><b>Create Media Products</b> – Students will complete projects; ones that require the use of industry recognized game/multi-media development software to design fully functioning game.</p> <p><b>Apply Technology Effectively</b> – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.</p> <p><b>Work Independently</b> – Students will complete assignments/projects; ones that require work to be done without or minimal direct instruction or oversight.</p> <p><b>Manage Projects</b> – Students will complete assignments/projects; ones that require deadlines to be set for working through the entire assignment/project from start-to-finish to meet a due date.</p> <p><b>Produce Results</b> – Students will complete projects; ones that require knowledge and skills to plan, design, and build their games.</p>		
<b><i>Standards and Competencies</i></b>		
<p>C – 2.1 Vocabulary.</p> <p>C – 2.2 Understanding that mathematics is embedded in all video games.</p> <p>C – 2.3 Integers.</p> <p>C – 2.4 Decimals.</p> <p>C – 2.5 A video game use for linear systems is shown.</p> <p>C – 2.6 A video game use for systems of linear equations is shown.</p> <p>C – 2.7 Number systems.</p> <p>C – 2.8 Vectors.</p> <p>C – 2.9 Vector types.</p> <p>C – 2.10 Position coordinate systems.</p>		
<b><i>Aligned Washington State Standards</i></b>		
<b>Art</b>	<p>1.1 – Understands and applies visual arts concepts and vocabulary.</p> <p>1.2 – Develops visual arts skills and techniques.</p> <p>2.1 – Applies a creative process to visual arts.</p> <p>3.2 – Uses visual arts to communicate for a specific purpose.</p> <p>4.5 – Understands how arts knowledge and skills are used in the world of work, including careers in the arts.</p>	
<b>Communications-CCSS</b>	<b>Comprehension and Collaboration:</b>	

	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> </ol>
<b>Educational Technology</b>	<ol style="list-style-type: none"> <li>1.1 – Demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.</li> <li>1.2.1 – Communicate and collaborate to learn with others.</li> <li>1.3.1 – Identify and define authentic problems and significant questions for investigation and plan strategies to guide inquiry.</li> <li>1.3.2 – Locate and organize information from a variety of sources and media.</li> <li>1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.</li> <li>2.1.1 – Practice personal safety.</li> <li>2.1.2 – Practice ethical and respectful behavior.</li> <li>2.2.1 – Develop skills to use technology effectively.</li> <li>2.2.2 – Use a variety of hardware to support learning.</li> <li>2.3.1 – Select and use common applications.</li> <li>2.3.2 – Select and use online applications.</li> <li>2.4.1 – Formulate and synthesize new knowledge.</li> </ol>
<b>Health and Fitness</b>	2.4 – Acquire skills to live safely and reduce health risks
<b>Math-CCSS</b>	<p><b>Standards for Mathematical Practices:</b></p> <ol style="list-style-type: none"> <li>2. Reason abstractly and quantitatively</li> <li>4. Model with mathematics</li> <li>5. Use appropriate tools strategically</li> </ol> <p><b>Vector and Matrix Quantities (N-VM):</b></p> <ul style="list-style-type: none"> <li>Represent and model with vector quantities</li> <li>Perform operations on vectors</li> </ul> <p><b>Interpreting Functions (F-IF):</b></p> <ul style="list-style-type: none"> <li>Interpret functions that arise in applications in terms of the context</li> <li>Analyze functions using different representations</li> </ul> <p><b>Linear, Quadratic, and Exponential Models (F-LE):</b></p> <ul style="list-style-type: none"> <li>Construct and compare linear, quadratic, and exponential models and solve problems</li> <li>Explain expressions for functions in terms of the situation they model</li> </ul> <p><b>Trigonometric Functions (F-TF):</b></p> <ul style="list-style-type: none"> <li>Model periodic phenomena with trigonometric functions</li> <li>Prove and apply trigonometric identities</li> </ul> <p><b>Similarity, Right Triangles, and Trigonometry (G-SRT):</b></p> <ul style="list-style-type: none"> <li>Understand similarity in terms of similarity transformations</li> <li>Apply trigonometry to general triangles</li> </ul>

<b>Reading-CCSS</b>	<p><b>Craft and Structure:</b> 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p><b>Integration of knowledge and ideas:</b> 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.</p>
<b>Writing-CCSS</b>	<p><b>Text types and purposes:</b> 2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <p><b>Research to build and present knowledge:</b> 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. 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 to citation. 9. Draw evidence from informational texts to support analysis, reflection, and research.</p>

<b>Unit: 9 Art and Design Concepts</b>	<b>Total Learning Unit Hours: 64</b> (16 per sem)
<p><b>Performance Assessments:</b>  Students will demonstrate their understanding of art and design concepts by creating original art assets for their games while applying fundamentals of art design. The art will communicate appropriately and effectively to the designated audience. Students will also be able to converse in terminology appropriate to the video game and interactive media design industry.</p>	
<p><b>Leadership Alignment:</b>  <b>Solve Problems</b> – Students will complete assignments/projects; ones that require demonstrating their competency of their problem solving skills through constant evaluation and testing of games.  <b>Use and Manage Information</b> – Students will complete assignments/projects; ones that require using search engines and websites via the Internet.  <b>Create Media Products</b> – Students will complete projects; ones that require the use of industry recognized game/multi-media development software to design fully functioning game.  5. B.1 Understand and utilize the most appropriate media creation tools, characteristics and conventions.  5. B.2 Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments.  <b>Apply Technology Effectively</b> – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.  <b>Work Independently</b> – Students will complete assignments/projects; ones that require work to be done without or minimal direct instruction or oversight.  <b>Manage Projects</b> – Students will complete assignments/projects; ones that require deadlines to be set for working through the entire assignment/project from start-to-finish to meet a due date.  <b>Produce Results</b> – Students will complete projects; ones that require knowledge and skills to plan, design, and build their games.</p>	
<i>Standards and Competencies</i>	
C – 3.1 Vocabulary C – 3.2 Art/design elements C – 3.3 Art/design principles C – 3.4 Color theory C – 3.5 Intro to 2D drawing application C – 3.6 Anatomy of motion C – 3.7 Keyframing and Tweening C – 3.8 Image file types C – 3.9 Research C – 3.10 Advanced 2D graphics C – 3.11 The design process C – 3.12 Character design C – 3.13 Introduction to 3D modeling and animation application C – 3.14 3D primitives and modeling	
<i>Aligned Washington State Standards</i>	
<b>Art</b>	1.1 – Understands and applies visual arts concepts and vocabulary. 1.2 – Develops visual arts skills and techniques. 2.1 – Applies a creative process to visual arts.

	<p>3.2 – Uses visual arts to communicate for a specific purpose.</p> <p>4.5 – Understands how arts knowledge and skills are used in the world of work, including careers in the arts.</p>
<b>Communications-CCSS</b>	<p><b>Comprehension and Collaboration:</b></p> <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> </ol>
<b>Educational Technology</b>	<ol style="list-style-type: none"> <li>1.1 – Demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.</li> <li>1.2.1 – Communicate and collaborate to learn with others.</li> <li>1.3.1 – Identify and define authentic problems and significant questions for investigation and plan strategies to guide inquiry.</li> <li>1.3.2 – Locate and organize information from a variety of sources and media.</li> <li>1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.</li> <li>2.1.1 – Practice personal safety.</li> <li>2.1.2 – Practice ethical and respectful behavior.</li> <li>2.2.1 – Develop skills to use technology effectively.</li> <li>2.2.2 – Use a variety of hardware to support learning.</li> <li>2.3.1 – Select and use common applications.</li> <li>2.3.2 – Select and use online applications.</li> <li>2.4.1 – Formulate and synthesize new knowledge.</li> </ol>
<b>Health and Fitness</b>	<p>2.4 – Acquire skills to live safely and reduce health risks</p>
<b>Math-CCSS</b>	<p><b>Standards for Mathematical Practices:</b></p> <p>4. Model with mathematics</p>
<b>Reading-CCSS</b>	<p><b>Craft and Structure:</b></p> <p>4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p><b>Integration of knowledge and ideas:</b></p> <p>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.</p>
<b>Writing-CCSS</b>	<p><b>Text types and purposes:</b></p> <p>2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <p><b>Research to build and present knowledge:</b></p> <p>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.</p>

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|  | <p>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 to citation.</p> <p>9. Draw evidence from informational texts to support analysis, reflection, and research.</p> |
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<b>Unit: 10 Video Game / Interactive Media Design Concepts</b>	<b>Total Learning Unit Hours: 96</b> (24 per sem)
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**Performance Assessments:**

Students will demonstrate their understanding of game design concepts by successful completion of multiple, progressive, game/app projects utilizing the practices listed below. Students will also be able to converse in terminology appropriate to the video game and interactive media design industry. Following iterations of the design process will show growth of understanding.

**Leadership Alignment:**

**Think Creatively** – Students will complete assignments/projects; ones that require students to think creatively using their foundational knowledge to design and create video games that are marketable to a targeted audience.

1. A.2 Create new and worthwhile ideas (both incremental and radical concepts).

1. A.3 Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts.

**Work Creatively with Others** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Solve Problems** – Students will complete assignments/projects; ones that require demonstrating their competency of their problem solving skills through constant evaluation and testing of games.

**Communicate Clearly** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Collaborate with Others** – Students will participate in and complete group projects; ones that require collaborating, brainstorming, communication, negotiating, etc. to assure project success.

**Use and Manage Information** – Students will complete assignments/projects; ones that require using search engines and websites via the Internet.

**Create Media Products** – Students will complete projects; ones that require the use of industry recognized game/multi-media development software to design fully functioning game.

5. B.1 Understand and utilize the most appropriate media creation tools, characteristics and conventions.

5. B.2 Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments.

**Apply Technology Effectively** – Students will complete assignments/projects; ones that require the understanding of how to appropriately use various technologies and how they may function with the work done in the classroom.

**Manage Goals and Time** – Students will complete assignments/projects; ones that require the setting of short-term goals with a deadline for completing the goals.

**Work Independently** – Students will complete assignments/projects; ones that require work to be done without or minimal direct instruction or oversight.

**Interact Effectively with Others** – Students will participate in and complete group projects; ones that require students to work together which provides them the ability to demonstrate and practice their interpersonal skills and problem solving skills.

**Work Effectively with Diverse Teams** – Students will participate in and complete group projects; ones that require students to work together which provides them the ability to demonstrate and practice their interpersonal skills and problem solving skills.

**Manage Projects** – Students will complete assignments/projects; ones that require deadlines to be set for working through the entire assignment/project from start-to-finish to meet a due date.

**Produce Results** – Students will complete projects; ones that require knowledge and skills to plan, design, and build their games.

**Guide and Lead Others** – Students will participate in and complete group projects; ones that require demonstration of interpersonal skills, problem solving skills and relationship building to act responsibly to one another in the classroom and to those outside of the classroom specifically for the purpose of projects related to the class when working within a group.

*Standards and Competencies*

- C – 4.1 Vocabulary
- C – 4.2 Definition of computer game
- C – 4.3 Entertainment value
- C – 4.4 Computer game development process
- C – 4.5 Computer game development team
- C – 4.6 Computer game platforms
- C – 4.7 Computer game engine and tools
- C – 4.8 Game genres
- C – 4.9 Character/enemy design
- C – 4.10 Story proposal
- C – 4.11 Design presentation
- C – 4.12 Requirements analysis
- C – 4.13 Production of art assets
- C – 4.14 Game User Interface design
- C – 4.15 AI design
- C – 4.16 Sound and music
- C – 4.17 Game Design Document
- C – 4.18 Technical Design Document
- C – 4.19 Digital prototyping process
- C – 4.20 Playability
- C – 4.21 Measuring and handling player feedback

*Aligned Washington State Standards*

<b>Art</b>	<ul style="list-style-type: none"> <li>1.1 – Understands and applies visual arts concepts and vocabulary.</li> <li>1.2 – Develops visual arts skills and techniques.</li> <li>2.1 – Applies a creative process to visual arts.</li> <li>3.2 – Uses visual arts to communicate for a specific purpose.</li> <li>4.5 – Understands how arts knowledge and skills are used in the world of work, including careers in the arts.</li> </ul>
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<b>Communications-CCSS</b>	<b>Comprehension and Collaboration:</b>
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	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> </ol>
<b>Educational Technology</b>	<ol style="list-style-type: none"> <li>1.1 – Demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.</li> <li>1.2.1 – Communicate and collaborate to learn with others.</li> <li>1.3.1 – Identify and define authentic problems and significant questions for investigation and plan strategies to guide inquiry.</li> <li>1.3.2 – Locate and organize information from a variety of sources and media.</li> <li>1.3.3 – Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.</li> <li>2.1.1 – Practice personal safety.</li> <li>2.1.2 – Practice ethical and respectful behavior.</li> <li>2.2.1 – Develop skills to use technology effectively.</li> <li>2.2.2 – Use a variety of hardware to support learning.</li> <li>2.3.1 – Select and use common applications.</li> <li>2.3.2 – Select and use online applications.</li> <li>2.4.1 – Formulate and synthesize new knowledge.</li> </ol>
<b>Health and Fitness</b>	2.4 – Acquire skills to live safely and reduce health risks
<b>Math-CCSS</b>	<p><b>Standards for Mathematical Practices:</b></p> <ol style="list-style-type: none"> <li>4. Model with mathematics</li> <li>5. Use appropriate tools strategically</li> <li>7. Look for and make use of structure</li> </ol>
<b>Reading-CCSS</b>	<p><b>Craft and Structure:</b></p> <ol style="list-style-type: none"> <li>4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</li> </ol> <p><b>Integration of knowledge and ideas:</b></p> <ol style="list-style-type: none"> <li>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.</li> </ol>
<b>Writing-CCSS</b>	<p><b>Text types and purposes:</b></p> <ol style="list-style-type: none"> <li>2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</li> </ol> <p><b>Research to build and present knowledge:</b></p> <ol style="list-style-type: none"> <li>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.</li> <li>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</li> </ol>

text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format to citation.

9. Draw evidence from informational texts to support analysis, reflection, and research.

*21<sup>st</sup> Century Skills*

Check those that students will demonstrate in this course:

**LEARNING & INNOVATION**

**Creativity and Innovation**

- Think Creatively
- Work Creatively with Others
- Implement Innovations

**Critical Thinking and Problem Solving**

- Reason Effectively
- Use Systems Thinking
- Make Judgments and Decisions
- Solve Problems

**Communication and Collaboration**

- Communicate Clearly
- Collaborate with Others

**INFORMATION, MEDIA & TECHNOLOGY SKILLS**

**Information Literacy**

- Access and Evaluate Information
- Use and Manage Information

**Media Literacy**

- Analyze Media
- Create Media Products

**Information, Communications and Technology (ICT Literacy)**

- Apply Technology Effectively

**LIFE & CAREER SKILLS**

**Flexibility and Adaptability**

- Adapt to Change
- Be Flexible

**Initiative and Self-Direction**

- Manage Goals and Time
- Work Independently
- Be Self-Directed Learners

**Social and Cross-Cultural**

- Interact Effectively with Others
- Work Effectively in Diverse Teams

**Productivity and Accountability**

- Manage Projects
- Produce Results

**Leadership and Responsibility**

- Guide and Lead Others
- Be Responsible to Others