

UNITY GAME DEVELOPMENT

CURRICULUM/CONTENT AREA	COURSE LENGTH
<i>Computer Science</i>	<i>One Term</i>
GRADE LEVEL	DATE LAST REVIEWED
<i>9 - 12</i>	<i>2022 (new)</i>
PREREQUISITE(s) if applicable	BOARD APPROVAL DATE
<i>None</i>	<i>11/15/2022</i>
PRIMARY RESOURCE if applicable	

DESIRED RESULTS

COURSE DESCRIPTION AND PURPOSE

Have you ever wondered how to create your own 3D games? In this course you will learn the fundamentals of game design and the technical skills required to create your own exciting games! Topics explored: game design and theory, player control, gameplay mechanics, sound and visual effects, scene management, and object oriented computer programming principles. We will also explore computer science careers and provide the opportunity for earning an Industry recognized certification.

ENDURING UNDERSTANDINGS

Students will understand that...

Creativity, innovation, and critical thinking are essential for success in a technologically advanced world.

The ability to communicate and collaborate with people with diverse backgrounds and perspectives is key to participation in a global economic society.

Career and technical education provides pathways to high-demand, high-wage career opportunities, and personal fulfillment.

ESSENTIAL QUESTIONS

Students will keep considering...

Why is creativity and innovation important? How is creativity and innovation used in Computer Science?

How do teams efficiently and effectively solve problems in an increasingly complex world?

What strategies and processes can I use to become a more effective creator, thinker and problem solver?

Why is communication and collaboration important? How do positive work behaviors and personal qualities impact communication and collaboration?

What is effective teamwork? What strategies can I use/teams use to work better together? How can perspectives and experiences of a diverse group develop innovative solutions to a given problem?

Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?

How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?

What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?

PRIORITY CAREER & TECHNICAL STANDARDS

Students will be skilled at...

Creativity, Critical Thinking, Communication and Collaboration

4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.

a: I develop effective resolutions for a given problem, decision or opportunity using available information.

b: I develop and implement a resolution for a new situation using personal knowledge and experience.

Career Development

CD4: Students will identify and apply employability skills.

a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.

b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.

c: I identify and exhibit traits for retaining employment.

d: I develop positive relationships with others.

Information, Media, Technology

IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.

- a: I choose appropriate sources of data and information for a given purpose.
- b: I determine the relevance, validity and timeliness of data and information.
- c: I select relevant information necessary for making decisions and solving problems
- d: I apply data and information to communicate ideas and create new opportunities.

PRIORITY CONTENT STANDARDS

Students will know...

Standard AP2: Students will create computational artifacts using algorithms and programming

Potential INDUSTRY-RECOGNIZED CREDENTIALS (IRCs) Opportunities associated with the course	Potential WORK BASED LEARNING (WBL) opportunities associated with the course
Unity Certifications	
CertiPort	
Potential DUAL CREDIT Opportunities associated with the course	

Unit 4: Game Design Introduction		
STAGE 1: Desired Unit Results Students will be able to: <ul style="list-style-type: none"> - Understand the basics of game design - Understand basic game elements - Understand beginning game theory - Understand the importance of project management 		STAGE 2: Assessment Evidence By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?
ESSENTIAL QUESTION (s) What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		Success Criteria with Standards The criteria for evaluating performance on standards is constant.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard Students may be given options to show their learning in varied ways.
Creativity, Critical Thinking, Communication and Collaboration 4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem. 4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation. 4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative. 4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model. 4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria. C2.a.16.h: I can defend an action taken or a decision implemented.	Determine an appropriate program design to solve a problem or accomplish a task. Determine if two or more code segments yield equivalent results. Use test-cases to find errors or validate results. Determine code that would be used to complete code segments.
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation. 4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	Determine the result or output based on statement execution order in a code segment. Describe the behavior and conditions that produce identified results in a program.
Career Development CD4: Students will identify and apply employability skills.		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways. CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.	Arrive on-time to all classes and meetings. Participate in a group discussion about the importance of time management.
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
d: I develop positive relationships with others.	CD4.d.6.h: I can evaluate the best method to assist co-workers in accomplishing goals and tasks. CD4.d.7.h: I can examine the skills required to enable students to successfully transition to postsecondary opportunities.	Determine team norms for communication and work completion. Research and list the top skills and traits needed to be successfull at the post secondary level.
Information, Media, Technology IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and Initiatives.		
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.	Collect data using computational tools and transform the data to make it more useful and reliable.
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.7.h: I can synthesize data and information from multiple sources to identify new trends.	Refine computational models based on the data they have generated.
PRIORITY CONTENT STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard Students may be given options to show their learning in varied ways.
Standard IC1: Students will understand the impact and effect computing technology has on our everyday lives	I can debate the social and economic implications associated with ethical and unethical computing practices (e.g., intellectual property rights, hacktivism, software piracy, new computers shipped with malware).	Evaluate computational artifacts to maximize their beneficial effects and minimize harmful effects on society.
Standard IC3: Students will understand the importance of proper use of data and information in a computing society	I can debate laws and regulations that impact the development and use of software and be able to explain the main arguments from multiple perspectives.	Debate laws and regulations that impact the development and use of software.
Stage 3: Learning Activities A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unfold in a natural flow?		
GUIDING UNIT QUESTIONS Using Costas' Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning	STRATEGIES/ACTIVITIES What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.	RESOURCES/MATERIALS This includes an applicable textbooks, software, industry recognized certification software/tools, subscriptions (such asPLTW), etc.
What makes an engaging game?	Group and Class discussions Have students describe games they've played, and identify their parts such as assets, narrative, objectives, etc.	Software: Unity Engine Hardware: Hardware to spec with Unity recommendations. Large enough monitors to support multiple windows and high resolutions.

How can game elements such as narratives, controls, effects be used to create a good user experience?	Use the Game Analysis Activity to get students started thinking about games in a scholarly/critical way	Learn.unity.com - used a base layer of curriculum to drive from.
	Use the Game Modification Activity to start students thinking of games as something they can change and manipulate.	
Why is project management important?	Have students take a scene from a game they're familiar with and list every asset present in the scene – objects, lighting, animations, sound, etc. Ask students to estimate how long it might take to make each object.	

Unit 2: Unity Essentials		
STAGE 1: Desired Unit Results Students will be able to: <ul style="list-style-type: none"> - Create and manage unity projects - Navigate 2D and 3D in the scene view - Understand Unity's real-time production cycle - Learn essential scene-building essentials (objects, components, scripts,etc) 		STAGE 2: Assessment Evidence By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?
ESSENTIAL QUESTION (s) What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		Success Criteria with Standards The criteria for evaluating performance on standards is constant.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard Students may be given options to show their learning in varied ways.
Creativity, Critical Thinking, Communication and Collaboration 4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem. 4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation. 4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative. 4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model. 4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria. C2.a.16.h: I can defend an action taken or a decision implemented.	Determine an appropriate program design to solve a problem or accomplish a task. Determine if two or more code segments yield equivalent results. Use test-cases to find errors or validate results. Determine code that would be used to complete code segments.
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation. 4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	Determine the result or output based on statement execution order in a code segment. Describe the behavior and conditions that produce identified results in a program.
Career Development CD4: Students will identify and apply employability skills.		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	Arrive on-time to all classes and meetings.
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
PRIORITY CONTENT STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard Students may be given options to show their learning in varied ways.
Standard AP2: Students will create computational artifacts using algorithms and programming	I can use user-centered research and design techniques (e.g., surveys, interviews) to create software solutions. I can integrate grade-level appropriate mathematical techniques, concepts, and processes in the creation of computational artifacts. I can use mathematical operations to change a value stored in a variable I can decompose a computational problem by creating new data types, functions, or classes. I can develop programs for multiple computing platforms (e.g., computer desktop, web, mobile). I can implement an Artificial Intelligence (AI) algorithm to play a game against a human opponent or solve a problem. I can demonstrate code reuse by creating programming solutions using libraries and application program interfaces (APIs) (e.g., graphics libraries, maps, API).	Write and implement a solution to a computational problem.
Standard DA1: Students will create computational artifacts using data and analysis	I can convert between binary, decimal, and hexadecimal representations of data (e.g., convert hexadecimal color codes to decimal percentages, ASCII/ Unicode representation). I can analyze the representation tradeoffs among various forms of digital information (e.g., lossy vs. lossless compression, encrypted vs. unencrypted, various image representations). I can discuss how data sequences (e.g., binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g., instructions, numbers, text, sound, image).	Use data analysis tools and techniques to identify patterns in data representing complex systems.
Stage 3: Learning Activities A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unfold in a natural flow?		
GUIDING UNIT QUESTIONS Using Costas' Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning	STRATEGIES/ACTIVITIES What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.	RESOURCES/MATERIALS This includes an applicable textbooks, software, industry recognized certification software/tools, subscriptions (such asPLTW), etc.

How do I manage a project in Unity?	Group and Class discussions	Software: Unity Engine
How can I use the Unity editor to manage scenes?	Quizzes	Hardware: Hardware to spec with Unity recommendations. Large enough monitors to support multiple windows and high resolutions.
What is real time development and why is it important?	Tutorials	Learn.unity.com - used a base layer of curriculum to drive from.
What are essential scene-building components in Unity?	Challenges that extend tutorials to demonstrate understanding	

Unit 3: Player Control and Game Play Basics		
STAGE 1: Desired Unit Results Students will be able to:		STAGE 2: Assessment Evidence By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?
Unity	C#	
<ul style="list-style-type: none"> - Create their first project and C# scripts - Manage object movements, collisions, and physics - Understand how to use the camera object. - Understand player controls and positioning - Understand programming terms like variables, methods, parameters 	<ul style="list-style-type: none"> - Implement appropriate data types - Implement a code style that is efficient and easy to read <ul style="list-style-type: none"> - Prototype new concepts - Interpret simple code - Improve simple code using the features of an IDE - Diagnose and fix code that compiles, but fails to perform as expected 	
ESSENTIAL QUESTION (s)		Success Criteria with Standards
What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		The criteria for evaluating performance on standards is constant.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard
Creativity, Critical Thinking, Communication and Collaboration		Students may be given options to show their learning in varied ways.
4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	Determine an appropriate program design to solve a problem or accomplish a task.
	4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.	Determine if two or more code segments yield equivalent results.
	4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.	Use test-cases to find errors or validate results.
	4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model.	Determine code that would be used to complete code segments.
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	Determine an appropriate program design to solve a problem or accomplish a task.
	C2.a.16.h: I can defend an action taken or a decision implemented.	Describe the behavior and conditions that produce identified results in a program.
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	Determine the result or output based on statement execution order in a code segment.
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	Describe the behavior and conditions that produce identified results in a program.
Career Development		
CD4: Students will identify and apply employability skills.		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	Arrive on-time to all classes and meetings.
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
Information, Media, Technology		
IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.		
b: I determine the relevance, validity and timeliness of data and information.	IMT1.b.7.h: I can use raw data and information appropriately to support an argument, idea or initiative.	Determine an appropriate program design to solve a problem or accomplish a task.
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.7.h: I can synthesize data and information from multiple sources to identify new trends.	Refine computational models based on the data they have generated.
	IMT1.d.8.h: I can manage and share stored data and information for a specific purpose.	Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.
PRIORITY CONTENT STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard
Standard AP2: Students will create computational artifacts using algorithms and programming		Students may be given options to show their learning in varied ways.
I can use user-centered research and design techniques (e.g., surveys, interviews) to create software solutions. I can integrate grade-level appropriate mathematical techniques, concepts, and processes in the creation of computational artifacts. I can use mathematical operations to change a value stored in a variable I can decompose a computational problem by creating new data types, functions, or classes. I can develop programs for multiple computing platforms (e.g., computer desktop, web, mobile). I can implement an Artificial Intelligence (AI) algorithm to play a game against a human opponent or solve a problem. I can demonstrate code reuse by creating programming solutions using libraries and application program interfaces (APIs) (e.g., graphics libraries, maps, API).		Write and implement a solution to a computational problem.

Standard DA1: Students will create computational artifacts using data and analysis	<p>I can convert between binary, decimal, and hexadecimal representations of data (e.g., convert hexadecimal color codes to decimal percentages, ASCII/ Unicode representation).</p> <p>I can analyze the representation tradeoffs among various forms of digital information (e.g., lossy vs. lossless compression, encrypted vs. unencrypted, various image representations).</p> <p>I can discuss how data sequences (e.g., binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g., instructions, numbers, text, sound, image).</p>	<p>Use data analysis tools and techniques to identify patterns in data representing complex systems.</p>
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Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unfold in a natural flow?

GUIDING UNIT QUESTIONS	STRATEGIES/ACTIVITIES	RESOURCES/MATERIALS
<p>Using Costas' Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning</p>	<p>What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.</p>	<p>This includes an applicable textbooks, software, industry recognized certification software/tools, subscriptions (such asPLTW), etc.</p>
<p>How can we use scripting to move objects and test for collisions?</p>	<p>Group and Class discussions</p>	<p>Software: Unity Engine</p>
<p>What are variables and how are they used?</p>	<p>Quizzes</p>	<p>Hardware: Hardware to spec with Unity recommendations. Large enough monitors to support multiple windows and high resolutions.</p>
<p>What are methods/parameters and how are they used?</p>	<p>Tutorials</p>	<p>Learn.unity.com - used a base layer of curriculum to drive from.</p>
<p>How can we use scripts to alter object variables and behaviors?</p>	<p>Challenges that extend tutorials to demonstrate understanding</p>	<p>Unit 1-2 in essentials pathway</p>
<p>How can we create and destroy objects in our game?</p>		
<p>How can we test for user inputs?</p>		

Unit 4: Sound Effects and Game Play Mechanics		
STAGE 1: Desired Unit Results Students will be able to:		STAGE 2: Assessment Evidence By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?
Unity - Create and manage player animations, music, effects, particle systems - Improve their knowledge of player controls - Improve gameplay mechanics utilizing enemy AI, visual indicators, spawning, advanced collisions, and advanced camera management	C# - Use common logic structures to control the execution of code. - Write code that utilizes the various Unity APIs - Write code that integrates into an existing system - Implement appropriate data types - Implement a code style that is efficient and easy to read - Prototype new concepts - Diagnose and fix code that compiles, but fails to perform as expected - Diagnose and fix common compilation errors - Diagnose and fix the cause of an exception	
ESSENTIAL QUESTION (s) What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		Success Criteria with Standards The criteria for evaluating performance on standards is constant.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard Students may be given options to show their learning in varied ways.
Creativity, Critical Thinking, Communication and Collaboration		
4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	Determine an appropriate program design to solve a problem or accomplish a task.
	4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.	Determine if two or more code segments yield equivalent results.
	4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.	Use test-cases to find errors or validate results.
	4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model.	Determine code that would be used to complete code segments.
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	Determine an appropriate program design to solve a problem or accomplish a task.
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b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	Determine the result or output based on statement execution order in a code segment.
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c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
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IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.		
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d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.7.h: I can synthesize data and information from multiple sources to identify new trends.	Refine computational models based on the data they have generated.
	IMT1.d.8.h: I can manage and share stored data and information for a specific purpose.	Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.
PRIORITY CONTENT STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard Students may be given options to show their learning in varied ways.
Standard AP2: Students will create computational artifacts using algorithms and programming	I can use user-centered research and design techniques (e.g., surveys, interviews) to create software solutions. I can integrate grade-level appropriate mathematical techniques, concepts, and processes in the creation of computational artifacts. I can use mathematical operations to change a value stored in a variable I can decompose a computational problem by creating new data types, functions, or classes. I can develop programs for multiple computing platforms (e.g., computer desktop, web, mobile). I can implement an Artificial Intelligence (AI) algorithm to play a game against a human opponent or solve a problem. I can demonstrate code reuse by creating programming solutions using libraries and application program interfaces (APIs) (e.g., graphics libraries, maps, API).	Write and implement a solution to a computational problem.

Standard DA1: Students will create computational artifacts using data and analysis	<p>I can convert between binary, decimal, and hexadecimal representations of data (e.g., convert hexadecimal color codes to decimal percentages, ASCII/ Unicode representation).</p> <p>I can analyze the representation tradeoffs among various forms of digital information (e.g., lossy vs. lossless compression, encrypted vs. unencrypted, various image representations).</p> <p>I can discuss how data sequences (e.g., binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g., instructions, numbers, text, sound, image).</p>	<p>Use data analysis tools and techniques to identify patterns in data representing complex systems.</p>
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Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unfold in a natural flow?

GUIDING UNIT QUESTIONS	STRATEGIES/ACTIVITIES	RESOURCES/MATERIALS
<p>Using Costas' Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning</p>	<p>What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.</p>	<p>This includes applicable textbooks, software, industry recognized certification software/tools, subscriptions (such as PLTW), etc.</p>
<p>How can design and media effects enhance the user experience?</p>	<p>Group and Class discussions</p>	<p>Software: Unity Engine</p>
<p>What are examples of good and bad player controls?</p>	<p>Quizzes</p>	<p>Hardware: Hardware to spec with Unity recommendations. Large enough monitors to support multiple windows and high resolutions.</p>
<p>How can randomness and scaling level-difficulty improve a user's overall experience?</p>	<p>Tutorials</p>	<p>Learn.unity.com - used a base layer of curriculum to drive from.</p>
	<p>Challenges that extend tutorials to demonstrate understanding</p>	

Unit 5: User Interface and Game Production		
STAGE 1: Desired Unit Results Students will be able to:		STAGE 2: Assessment Evidence By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?
Unity <ul style="list-style-type: none"> - Managing the end of a game - Create clean user interfaces with menus and buttons - Understand game production and project optimization - Explore career paths in game development 	C# <ul style="list-style-type: none"> - Use common logic structures to control the execution of code. - Write code that utilizes the various Unity APIs - Implement appropriate data types - Write code that integrates into an existing system - Implement a code style that is efficient and easy to read - Prototype new concepts - Diagnose and fix code that compiles, but fails to perform as expected - Diagnose and fix compilation errors related to Unity's Scripting API 	
ESSENTIAL QUESTION (s) What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		Success Criteria with Standards The criteria for evaluating performance on standards is constant.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard Students may be given options to show their learning in varied ways.
Creativity, Critical Thinking, Communication and Collaboration		
4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	Determine an appropriate program design to solve a problem or accomplish a task.
	4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.	Determine if two or more code segments yield equivalent results.
	4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.	Use test-cases to find errors or validate results.
	4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model.	Determine code that would be used to complete code segments.
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	Determine an appropriate program design to solve a problem or accomplish a task.
	C2.a.16.h: I can defend an action taken or a decision implemented.	Describe the behavior and conditions that produce identified results in a program.
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	Determine the result or output based on statement execution order in a code segment.
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	Describe the behavior and conditions that produce identified results in a program.
Career Development		
CD4: Students will identify and apply employability skills.		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	Arrive on-time to all classes and meetings.
b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.	CD4.b.5.h: I can use multiple resources to locate job opportunities.	Use multiple on-line resources to construct a list potential employment opportunities.
	CD4.b.6.h: I can prepare a resume, cover letter, employment application.	Produce a resume and review it with a hiring manager.
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
Information, Media, Technology		
IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.		
b: I determine the relevance, validity and timeliness of data and information.	IMT1.b.7.h: I can use raw data and information appropriately to support an argument, idea or initiative.	Determine an appropriate program design to solve a problem or accomplish a task.
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.5.h: I can defend a solution or conclusion using appropriate data and information.	Use data analysis tools and techniques to identify patterns in data representing complex systems.
	IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.	Collect data using computational tools and transform the data to make it more useful and reliable.
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.7.h: I can synthesize data and information from multiple sources to identify new trends.	Refine computational models based on the data they have generated.
	IMT1.d.8.h: I can manage and share stored data and information for a specific purpose.	Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.
PRIORITY CONTENT STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard Students may be given options to show their learning in varied ways.

Standard AP2: Students will create computational artifacts using algorithms and programming	<p>I can use user-centered research and design techniques (e.g., surveys, interviews) to create software solutions.</p> <p>I can integrate grade-level appropriate mathematical techniques, concepts, and processes in the creation of computational artifacts.</p> <p>I can use mathematical operations to change a value stored in a variable</p> <p>I can decompose a computational problem by creating new data types, functions, or classes.</p> <p>I can develop programs for multiple computing platforms (e.g., computer desktop, web, mobile).</p> <p>I can implement an Artificial Intelligence (AI) algorithm to play a game against a human opponent or solve a problem.</p> <p>I can demonstrate code reuse by creating programming solutions using libraries and application program interfaces (APIs) (e.g., graphics libraries, maps, API).</p>	<p>Write and implement a solution to a computational problem.</p>
Standard DA1: Students will create computational artifacts using data and analysis	<p>I can convert between binary, decimal, and hexadecimal representations of data (e.g., convert hexadecimal color codes to decimal percentages, ASCII/ Unicode representation).</p> <p>I can analyze the representation tradeoffs among various forms of digital information (e.g., lossy vs. lossless compression, encrypted vs. unencrypted, various image representations).</p> <p>I can discuss how data sequences (e.g., binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g., instructions, numbers, text, sound, image).</p>	<p>Use data analysis tools and techniques to identify patterns in data representing complex systems.</p>
Standard IC1: Students will understand the impact and effect computing technology has on our everyday lives	<p>I can debate the social and economic implications associated with ethical and unethical computing practices (e.g., intellectual property rights, hacktivism, software piracy, new computers shipped with malware).</p>	<p>Evaluate computational artifacts to maximize their beneficial effects and minimize harmful effects on society.</p>

Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unfold in a natural flow?

GUIDING UNIT QUESTIONS	STRATEGIES/ACTIVITIES	RESOURCES/MATERIALS
<p>Using Costas' Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning</p>	<p>What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.</p>	<p>This includes an applicable textbooks, software, industry recognized certification software/tools, subscriptions (such asPLTW), etc.</p>
<p>Explain why a good navigational system in your game is important</p>	<p>Group and Class discussions</p>	<p>Software: Unity Engine</p>
<p>What are some ways to troubleshoot your program?</p>	<p>Quizzes</p>	<p>Hardware: Hardware to spec with Unity recommendations. Large enough monitors to support multiple windows and high resolutions.</p>
<p>Why is it important to optimize your code? How much optimization is enough?</p>	<p>Tutorials</p>	<p>Learn.unity.com - used a base layer of curriculum to drive from.</p>
	<p>Challenges that extend tutorials to demonstrate understanding</p>	

Unit 6: Scene flow Management and Basic OOP

STAGE 1: Desired Unit Results
Students will be able to:

STAGE 2: Assessment Evidence

By what criteria will performances of understanding be assessed?
Through what authentic performance tasks will students demonstrate the desired unit results?

Unity

- Create and manage scene flow
- Implement data persistence between scenes and sessions
 - Understand basic object-oriented principles
 - Gather profiling data to optimize a project
 - Analyze CPU data to find and fix bottlenecks

C#

- Implement an iterative design process
- Maintain a project by correctly implementing version control
 - Implement best practices of version control using Unity Collaborate
 - Create the scene flow in an application state
 - Implement data persistence across scenes and user sessions
- Maximize code efficiency by correctly executing coding best practices
 - debug performance issues
- Analyze the principal pillars of object-oriented programming
 - Simplify code and make it reusable by correctly implementing the principles of inheritance and polymorphism

ESSENTIAL QUESTION (s)

What thought-provoking questions will foster inquiry, understanding, and transfer of learning?

Success Criteria with Standards

The criteria for evaluating performance on standards is constant.

What strategies and processes can I use to become a more effective creator, thinker and problem solver?

CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.

How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?

In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.

PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets

Performance Tasks Options/ Assessment Strategies by Standard

Students may be given options to show their learning in varied ways.

Creativity, Critical Thinking, Communication and Collaboration

4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.

a: I develop effective resolutions for a given problem, decision or opportunity using available information.

4C2.a.11.h: I can determine the information needed to address an identified problem.

Determine an appropriate program design to solve a problem or accomplish a task.

4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.

Determine if two or more code segments yield equivalent results.

4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.

Use test-cases to find errors or validate results.

4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model.

Determine code that would be used to complete code segments.

4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.

Determine an appropriate program design to solve a problem or accomplish a task.

C2.a.16.h: I can defend an action taken or a decision implemented.

Describe the behavior and conditions that produce identified results in a program.

b: I develop and implement a resolution for a new situation using personal knowledge and experience.

4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.

Determine the result or output based on statement execution order in a code segment.

4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.

Describe the behavior and conditions that produce identified results in a program.

Career Development

CD4: Students will identify and apply employability skills.

a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.

CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.

Arrive on-time to all classes and meetings.

c: I identify and exhibit traits for retaining employment.

CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.

Use electronic communication between teacher, team members, and mentors .

Information, Media, Technology

IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.

a: I choose appropriate sources of data and information for a given purpose.

IMT1.a.6.h: I can justify the selection of various information sources for a given purpose.

Organize and present collected data visually to highlight relationships and support a claim.

IMT1.a.7.h: I can explain the level of objectivity for a given source of information.

Collect data using computational tools.

c: I select relevant information necessary for making decisions and solving problems

IMT1.c.5.h: I can defend a solution or conclusion using appropriate data and information.

Use data analysis tools and techniques to identify patterns in data representing complex systems.

IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.

Collect data using computational tools and transform the data to make it more useful and reliable.

d: I apply data and information to communicate ideas and create new opportunities.

IMT1.d.6.h: I can defend a proposal for a new product or service based on data and information analysis.

Evaluate the ability of models and simulations to test and support the refinement of hypotheses.

IMT1.d.7.h: I can synthesize data and information from multiple sources to identify new trends.

Refine computational models based on the data they have generated.

IMT1.d.8.h: I can manage and share stored data and information for a specific purpose.

Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.

PRIORITY CONTENT STANDARDS & Learning Targets

Performance Tasks Options/ Assessment Strategies by Standard

Students may be given options to show their learning in varied ways.

Standard AP2: Students will create computational artifacts using algorithms and programming	<p>I can use user-centered research and design techniques (e.g., surveys, interviews) to create software solutions.</p> <p>I can integrate grade-level appropriate mathematical techniques, concepts, and processes in the creation of computational artifacts.</p> <p>I can use mathematical operations to change a value stored in a variable</p> <p>I can decompose a computational problem by creating new data types, functions, or classes.</p> <p>I can develop programs for multiple computing platforms (e.g., computer desktop, web, mobile).</p> <p>I can implement an Artificial Intelligence (AI) algorithm to play a game against a human opponent or solve a problem.</p> <p>I can demonstrate code reuse by creating programming solutions using libraries and application program interfaces (APIs) (e.g., graphics libraries, maps, API).</p>	<p>Write and implement a solution to a computational problem.</p>
Standard DA1: Students will create computational artifacts using data and analysis	<p>I can convert between binary, decimal, and hexadecimal representations of data (e.g., convert hexadecimal color codes to decimal percentages, ASCII/ Unicode representation).</p> <p>I can analyze the representation tradeoffs among various forms of digital information (e.g., lossy vs. lossless compression, encrypted vs. unencrypted, various image representations).</p> <p>I can discuss how data sequences (e.g., binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g., instructions, numbers, text, sound, image).</p>	<p>Use data analysis tools and techniques to identify patterns in data representing complex systems.</p>

Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unfold in a natural flow?

GUIDING UNIT QUESTIONS	STRATEGIES/ACTIVITIES	RESOURCES/MATERIALS
<p>Using Costas' Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning</p>	<p>What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.</p>	<p>This includes an applicable textbooks, software, industry recognized certification software/tools, subscriptions (such asPLTW), etc.</p>
<p>How can you maintain character and level states as you switch levels in your game?</p>	<p>Group and Class discussions</p>	<p>Software: Unity Engine</p>
<p>What are ways to manage scene flow in your game?</p>	<p>Quizzes</p>	<p>Hardware: Hardware to spec with Unity recommendations. Large enough monitors to support multiple windows and high resolutions.</p>
<p>How and when should you use inheritance in your game development?</p>	<p>Tutorials</p>	<p>Learn.unity.com - used a base layer of curriculum to drive from.</p>
<p>How can we gather data to identify bottlenecks and lags in your game?</p>	<p>Challenges that extend tutorials to demonstrate understanding</p>	

Unit 7: Career, Certifications, and Beyond			
STAGE 1: Desired Unit Results Students will be able to:		STAGE 2: Assessment Evidence	
<ul style="list-style-type: none"> - Identify and search for possible roles for a game developer. - Understand the application and interview process - Create a resume and add update their portfolio. - Be able to take a Unity Certification 		By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?	
ESSENTIAL QUESTION (s)		Success Criteria with Standards	
What thought-provoking questions will foster inquiry, understanding, and transfer of learning?		The criteria for evaluating performance on standards is constant.	
Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.	
What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.	
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard	
Career Development			
CD4: Students will identify and apply employability skills.			
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.6.h: I can evaluate how selfdiscipline, self-worth, positive attitude and integrity displayed in a work situation affect employment status.	Document a list of desired skills and traits local employers desire in their employees.	
	CD4.a.7.h: I can assess how flexibility and willingness to learn new knowledge and skills affect employment status.	Interview a computer science professional to learn about previous, current, and future learning required for their position.	
	CD4.a.8.h: I can apply communication strategies when adapting to a culturally diverse environment.	Participate in a cross cultural discussion of computer science careers with students in another school district.	
	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	Arrive on-time to all classes and meetings.	
	CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.	Participate in a group discussion about the importance of time management.	
	b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.	CD4.b.5.h: I can use multiple resources to locate job opportunities.	Use multiple on-line resources to construct a list potential employment opportunities.
		CD4.b.6.h: I can prepare a resume, cover letter, employment application.	Produce a resume and review it with a hiring manager.
		CD4.b.7.h: I can employ critical thinking and decision-making skills to exhibit qualifications to a potential employer in an interview.	Participate in mock interviews with educators and community members.
	c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	Use electronic communication between teacher, team members, and mentors .
		CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite.	Document appropriate dress for computer science positions at local companies.
CD4.c.6.h: I can complete required employment forms and documentation.		Complete an application for a local job opportunity.	
CD4.c.7.h: I can summarize key activities necessary to retain a job in an industry.		Create a prioritized list of leadership qualities desired by local employers.	
d: I develop positive relationships with others.	CD4.d.5.h: I can participate in cocurricular and community activities to enhance the school experience.	Participate in a job shadow.	
	CD4.d.6.h: I can evaluate the best method to assist co-workers in accomplishing goals and tasks.	Determine team norms for communication and work completion.	
	CD4.d.7.h: I can examine the skills required to enable students to successfully transition to postsecondary opportunities.	Research and list the top skills and traits needed to be successfull at the post secondary level.	
	CD4.d.8.h: I can use a systematic approach to academic and career planning for students to achieve their learning, socio-cultural and work goals.	Create an academic and career plan with the help of parents, teachers, counselors, and mentors.	
PRIORITY CONTENT STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard	
Standard DA1: Students will create computational artifacts using data and analysis	I can convert between binary, decimal, and hexadecimal representations of data (e.g., convert hexadecimal color codes to decimal percentages, ASCII/ Unicode representation). I can analyze the representation tradeoffs among various forms of digital information (e.g., lossy vs. lossless compression, encrypted vs. unencrypted, various image representations). I can discuss how data sequences (e.g., binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g., instructions, numbers, text, sound, image).	Use data analysis tools and techniques to identify patterns in data representing complex systems.	
Standard IC1: Students will understand the impact and effect computing technology has on our everyday lives	I can debate the social and economic implications associated with ethical and unethical computing practices (e.g., intellectual property rights, hacktivism, software piracy, new computers shipped with malware).	Evaluate computational artifacts to maximize their beneficial effects and minimize harmful effects on society.	
Standard IC3: Students will understand the importance of proper use of data and information in a computing society	I can debate laws and regulations that impact the development and use of software and be able to explain the main arguments from multiple perspectives.	Debate laws and regulations that impact the development and use of software.	
Stage 3: Learning Activities			
A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unfold in a natural flow?			

GUIDING UNIT QUESTIONS	STRATEGIES/ACTIVITIES	RESOURCES/MATERIALS
Using Costas' Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning	What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.	This includes applicable textbooks, software, industry recognized certification software/tools, subscriptions (such as PLTW), etc.
How can we find job opportunities for game development?	Create a resume	Software: Unity Engine
What do employers look for in game developer candidates?	Create and/or update a portfolio (eg. github)	Hardware: Hardware to spec with Unity recommendations. Large enough monitors to support multiple windows and high resolutions.
How can I prepare for an interview?	Prepare and practice for an interview	Learn.unity.com - used a base layer of curriculum to drive from.
How can I prepare for a certification test?	Research current job opportunities	

