

VIDEO GAME ACADEMY

CURRICULUM/CONTENT AREA	COURSE LENGTH
IT/ENTREPRENEURSHIP	Semester, Alternating Days (45 days)
GRADE LEVEL	DATE LAST REVIEWED
7-8	2022
PREREQUISITE(s) if applicable	BOARD APPROVAL DATE
	11/15/2022
PRIMARY RESOURCE if applicable	

DESIRED RESULTS

COURSE DESCRIPTION AND PURPOSE

In this engaging and interactive class students will have the opportunity to explore game design, apply coding principles, and transform their work to create their very own video game. During the semester, students will visit an actual local arcade to play those very same games we will be learning about during the semester. It makes NO difference if you're new to video game design or an advanced user, come join this exciting class.

ENDURING UNDERSTANDINGS <i>Students will understand that...</i>	ESSENTIAL QUESTIONS <i>Students will keep considering...</i>
Creativity, innovation, and critical thinking are essential for success in a technologically advanced world.	Why is creativity and innovation important? How is creativity and innovation used in [name of career pathway]? 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?
The ability to communicate and collaborate with people with diverse backgrounds and perspectives is key to participation in a global economic society.	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?
Career and technical education provides pathways to high-demand, high-wage career opportunities, and personal fulfillment.	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

Evolution of Video Games		
STAGE 1: Desired Unit Results <i>What will students understand as a result of the unit?</i>		STAGE 2: Assessment Evidence <i>By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?</i>
ESSENTIAL QUESTION (s) <i>What thought-provoking questions will foster inquiry, understanding, and transfer of learning?</i>		Success Criteria with Standards <i>The criteria for evaluating performance on standards is constant.</i>
Why is creativity and innovation important? How is creativity and innovation used in Video Game Design and Development?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How do teams efficiently and effectively solve problems in an increasingly complex world?		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 <i>Students may be given options to show their learning in varied ways.</i>
Career Development		
CD4: Students will identify and apply employability skills.		
d: I develop positive relationships with others.	CD4.d.4.m: I can use cooperative behavior in helping peers accomplish goals and tasks.	Jigsaw Collaborative Learning Groups- In portfolio/evidenced based journal, students will reflect on attributes of effective teams and role of collaboration with employability skills.
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.3.m: I can evaluate the relevance and reliability of various sources of information.	LAUNCH design process application and reflection.
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.4.m: I can incorporate information from multiple sources to communicate a new idea or support an argument.	Focused Notetaking
PRIORITY CONTENT STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard <i>Students may be given options to show their learning in varied ways.</i>
Standard AP2: Students will create computational artifacts using algorithms and programming		In portfolio/evidenced based journal, students will reflect on the evolution of video games.
I can develop programs, both independently and collaboratively, which include sequencing with nested loops and multiple branches [Clarification At this level, students may use block-based and/or textbased languages].		
I can produce computational artifacts with broad accessibility and usability through careful consideration of diverse needs and wants of the community		
I can design, develop, and implement a computing artifact that responds to an event (e.g., robot that responds to a sensor, mobile app that responds to a text message, sprite that responds to a broadcast).		
I can create variables that represent different types of data and manipulate their values.		
SUPPORTING STANDARDS AND LEARNING TARGETS		Performance Tasks Options/ Assessment Strategies by Standard <i>Students may be given options to show their learning in varied ways.</i>
Standard IC1: Students will understand the impact and effect computing technology has on our everyday lives	I can explain how computer science fosters innovation and can enhance careers and disciplines.	Students will discuss orally and in writing the impact of computer tech- specifically gaming technology- on our everyday lives.
	I can analyze and present beneficial and harmful effects of personal electronic communication and social electronic communication.	
	I can describe ways in which the internet impacts global communication and collaborating.	
Stage 3: Learning Activities		
<i>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?</i>		
GUIDING UNIT QUESTIONS	STRATEGIES/ACTIVITIES	RESOURCES/MATERIALS
<i>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</i>	<i>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.</i>	<i>This includes an applicable textbooks, software, industry recognized certification software/tools, subscriptions (such asPLTW), etc.</i>
How have video games evolved over time? What are similarities and differences in classic games to current video games based on design, complexity, and user experience? Why is gaming important in our society?	Collaborative research on timeline of video game development Group Presentations	Interactive slideshow on Evolution of Video Games
What speculations do you have on the future of video games based on current technology trends?	Whole Group Discussion Reflection	Online video resource

Fundamentals of Programming		
STAGE 1: Desired Unit Results What will students understand as a result of the unit?		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.
Why is creativity and innovation important? How is creativity and innovation used in Video Game Design and Development?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How do teams efficiently and effectively solve problems in an increasingly complex world?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		
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.
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.5.m: I can demonstrate ability to gather information from electronic and non-electronic sources.	LAUNCH design process application and reflection. Costa's Level of Questioning
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.4.m: I can incorporate information from multiple sources to communicate a new idea or support an argument.	Focused Notetaking Think Pair 30 second expert
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 develop programs, both independently and collaboratively, which include sequencing with nested loops and multiple branches [Clarification At this level, students may use block-based and/or textbased languages].		In portfolio/evidenced based journal, students will reflect on the evolution of video games.
I can produce computational artifacts with broad accessibility and usability through careful consideration of diverse needs and wants of the community		
I can design, develop, and implement a computing artifact that responds to an event (e.g., robot that responds to a sensor, mobile app that responds to a text message, sprite that responds to a broadcast).		
I can create variables that represent different types of data and manipulate their values.		
SUPPORTING STANDARDS AND 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		Students will discuss orally and in writing how computer science fosters innovation.
I can explain how computer science fosters innovation and can enhance careers and disciplines.		
I can analyze and present beneficial and harmful effects of personal electronic communication and social electronic communication.		
I can describe ways in which the internet impacts global communication and collaborating.		
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 an applicable textbooks, software, industry recognized certification software/tools, subscriptions (such asPLTW), etc.
How does Makecode Arcade look similar to Microsoft Makecode? How is it different?	Compare and Contrast Chart Whole Group Instruction	Whiteboard Sticky Notes
What are the necessary elements found in good video games?	Whole Group Discussion	Interaction with gaming techniques and strategies
How do I use commands to create the desired outcome?	Makecode Arcade Tutorials Summary of Learning - Portfolio	potential tech tool: Makecode Arcade
How can I apply my Makecode Arcade knowledge to create a unique, playable, and enjoyable video game?	Makecode Rubric Gallery Walk Student Feedback Cycle	potential tech tool: Makecode Arcade

Game Design and Development		
STAGE 1: Desired Unit Results What will students understand as a result of the unit?		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.
Why is creativity and innovation important? How is creativity and innovation used in Video Game Design and Development?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How do teams efficiently and effectively solve problems in an increasingly complex world?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		
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.		
	4C2.b.3.m: I can analyze problems to determine what past experiences might be related and relevant.	Quickwrite KWL Graphic Organizer
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.4.m: I can demonstrate flexibility and willingness to learn new knowledge and skills.	30 second expert Focused Notetaking LAUNCH design process application and reflection.
d: I develop positive relationships with others.	CD4.d.4.m: I can use cooperative behavior in helping peers accomplish goals and tasks.	Pair Share
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.3.m: I can evaluate the relevance and reliability of various sources of information.	Team Huddle
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 develop programs, both independently and collaboratively, which include sequencing with nested loops and multiple branches [Clarification At this level, students may use block-based and/or textbased languages].	Students will create a computational artifact. In their portfolio/evidenced based journal, students will reflect on their implementation of the design process to create the artifact.
	I can produce computational artifacts with broad accessibility and usability through careful consideration of diverse needs and wants of the community	
	I can design, develop, and implement a computing artifact that responds to an event (e.g., robot that responds to a sensor, mobile app that responds to a text message, sprite that responds to a broadcast).	
	I can create variables that represent different types of data and manipulate their values.	
SUPPORTING STANDARDS AND 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 explain how computer science fosters innovation and can enhance careers and disciplines.	
	I can analyze and present beneficial and harmful effects of personal electronic communication and social electronic communication.	
	I can describe ways in which the internet impacts global communication and collaborating.	
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 coding principles from MakeCode Arcade can be applied to GameMaker? How are they similar? How are they different?	Compare and Contrast Whole Class Activity	potential tech tools: Upgrade GameMaker Studio 2 to current version to allow for work from home or school
How are spelling, capitalization, and punctuation important in code creation?	GameMaker Studio 2 Tutorials	Purchase license(s) for creating executable file for authentic student experience, feedback, sharing and game product

Why is it important to test, debug, and retest often?	Gamemaker Studio 2 Tutorials Debug Chart Pair Share	Online Video Resources Access to Minecraft - Java
How can you modify the game to create a "Level 2"?	Gamemaker Studio 2 Tutorials Debug Chart Pair Share	

Game Jam		
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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.
Why is creativity and innovation important? How is creativity and innovation used in Video Game Design and Development?		CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.
How do teams efficiently and effectively solve problems in an increasingly complex world?		In their portfolio/evidence journal, students will reflect on the essential questions through a quick write, constructed response.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		
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.		
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.4.m: I can analyze a problem to determine how it relates to existing knowledge.	30 second expert KWL Team Huddle
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.4.m: I can demonstrate flexibility and willingness to learn new knowledge and skills.	LAUNCH design process application and reflection. Graphic Organizer Pair Share
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.		
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.4.m: I can incorporate information from multiple sources to communicate a new idea or support an argument.	2 column notes
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		Students will create a computational artifact. In their portfolio/evidenced based journal, students will reflect on their implementation of the design process to create the artifact.
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How can I apply my previous knowledge and skills to enhance and personalize my game?	GameMaker Rubric	Upgrade GameMaker Studio 2 to current version to allow for work from home or school Purchase license(s) for creating executable file for authentic student experience, feedback, sharing and game product Online Video Resources
How can I use programming to further my career goals and aspirations?	Entrepreneurial Activity	Game Jam in Cafeteria Garcade Field Trip

Priority Standards	Unit 1	Unit 2	Unit 3	Unit 4
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.	x	x	x	x
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.	x	x	x	x
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.	x	x	x	x
Standard AP2: Students will create computational artifacts using algorithms and programming	x	x	x	x