

Unit 1: Game Design

Unit #: APSDO-00099567
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Grade(s): 8
Subject(s): Technology
Course(s): GR. 8 - TECHNOLOGY EDUCATION

Unit Focus

In the unit, students will be introduced to basic principles of coding (e.g., syntax, loops, conditional statements, global/local variables, animations) by designing, creating, and testing a video game. Additionally, they will learn that good game design pays attention to the elements of user experience (UX) such as playability, engageability, and user interface. Students will be guided through the development of a basic game module, upon which they will expand by adding both required and student-selected game functionality resulting in a more sophisticated game. Primary instructional materials include, but are not limited to, game design software (e.g., <https://www.scirra.com/construct2>) and a computer.

Stage 1: Desired Results

Established Goals	Transfer	
Standards <ul style="list-style-type: none"> ISTE Standards (2016) <ul style="list-style-type: none"> <i>ISTE Standards for Students</i> <ul style="list-style-type: none"> Computational Thinker - Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. (5) Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving. (5.c) Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions. (5.d) Connecticut Goals and Standards <ul style="list-style-type: none"> <i>Technology Education: 7-12</i> <ul style="list-style-type: none"> ENGINEERING TECHNOLOGY <ul style="list-style-type: none"> ENG101 Use the design process to solve problems by creating and refining prototypes. 	<i>What kinds of long-term, independent accomplishments are desired? Students will be able to independently use their learning to...</i>	
	T1 (T1) Explore and evaluate the use of technology in personal interests, aspirations, and/or employment opportunities. T2 (T2) Communicate effectively based on purpose, task, and audience using industry standard vocabulary and medium. T3 (T4) Demonstrate fluency and precision in industry standard processes.	
	Meaning	
	Understanding(s)	Essential Question(s)
	<i>What specifically do you want students to understand? What inferences should they make? Students will understand that...</i> U1 (U100) Exploration and use of technology, embedded in our lives, increases likelihood of personal and professional success. U2 (U101) Employment opportunities/career pathways in technology are abundant and constantly evolving. U3 (U400) The depth of understanding and use of industry standard processes directly relates to the sophistication and innovation of a design.	<i>What thought-provoking questions will foster inquiry, meaning making, and transfer? Students will keep considering...</i> Q1 (Q100) How does my choice of technology impact personal and professional success? Q2 (Q200) How does my target audience shape the communication choices I make? Q3 (Q400) How does understanding industry standard processes help me solve the problem or guide my design? Q4 (Q307) Feedback: What do the results reveal?
Acquisition		

	Knowledge	Skill(s)
	<p><i>What facts and basic concepts should students know and be able to recall? Students will know...</i></p> <p>K1 Key components of good game design that considers user experience (UX): playability, engageability, and user interface</p> <p>K2 Proper algorithm to design best practices</p> <p>K3 How to use a systematic and logical approach to troubleshooting</p>	<p><i>What discrete skills and processes should students be able to use? Students will be skilled at...</i></p> <p>S1 Applying the concepts of good design for the purposes of creating a positive user experience (UX)</p> <p>S2 Implementing algorithm design best practices</p> <p>S3 Practicing the art and science of troubleshooting to fix bugs and/or increase performance</p>