

Computing Concepts 1 Unit 3: Advanced Problem Solving

Stage 1 Desired Results		
ESTABLISHED GOALS: <u>Competencies:</u> - Students will demonstrate the ability to deconstruct a problem to utilize data structures and recognize patterns in order to develop a solution. - Students will demonstrate the ability to compare and discuss the effects of computing on society in order to improve current technology practices. - Students will demonstrate the ability to collaborate in order to create a solution. - Students will demonstrate the ability to analyze and summarize text and integrate knowledge to make meaning of discipline-specific materials. - Students will demonstrate the ability to produce coherent and supported writing in order to communicate effectively for a range of discipline-specific tasks, purposes, and audiences. - Students will demonstrate the ability to speak purposefully and effectively by strategically making decisions about content, language use, and discourse style. <u>Content Standards:</u> CSTA - Computer Science Teacher Association CSTA 3A-A-4-8: Deconstruct a complex problem into simpler parts using predefined constructs (e.g., functions and parameters and/or classes.) CSTA 3A-I-1-28: Explain the impact of the digital divide (i.e., uneven access to computing, computing education, and interfaces) on access to critical information. CSTA 3A-A-2-1: Design and develop a software artifact working in a team.	Transfer	
	Students will be able to independently use their learning to break down a task to create a solution for the whole.	
	Meaning	
	ENDURING UNDERSTANDINGS Students will understand that... computer software can be made up of many lines of code that accomplish a wide variety of tasks.	ESSENTIAL QUESTIONS How can we be sure the code in our electronic devices won't harm us?
	Acquisition	
	Students will know... - that problem solving requires defining, designing, implementing, and testing a solution. - that developing applications is impacted by current societal behavior. - that most applications are developed by teams. <u>vocabulary:</u> constructor, debug, dynamic, error, exception, function, instance, library, method, parameter	Students will be skilled at... - breaking a problem into manageable pieces - coding small sections of a program to create a larger, more powerful application - working in a team to create a product.
Content Area Literacy Standards		21st Century Skills
RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text RST.11-12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 11-12 texts and topics</i>. WHST.9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.		<i>Solve Problems</i> <i>Communicate Clearly</i> <i>Manage Goals and Time</i>

Stage 2 - Evidence

<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	PERFORMANCE TASK(S):
	OTHER EVIDENCE:

Stage 3 – Learning Plan

Summary of Key Learning Events and Instruction

<i>Language Arts Integration</i>	<i>Mathematics Integration</i>
1.OA.1 Use	1.OA.1 Use
<i>Technology Integration</i>	<i>District Materials</i>
1.OA.1 Use	