

Introduction to Java Unit 1: Java for Problem Solving

ESTABLISHED GOALS:	
<u>Competencies:</u> - Students will demonstrate the ability to explain the process used to translate high level languages to low level languages in order to create executable images. - Students will demonstrate the ability to create a coding solution in order to solve a problem. - 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 <u>CSTA 3A-C-4-16:</u> Describe the steps necessary for a computer to execute high-level source code (e.g. compilation to machine language, interpretation, fetch-decode-execute cycle.) <u>CSTA 3B-A-7-4:</u> Explain security issues that might lead to compromised computer programs (e.g., circular references, ambiguous program calls, lack of error checking and field size checking). <u>CSTA 3B-A-6-21:</u> Evaluate key qualities of a program (e.g. correctness, usability, readability, efficiency, portability, scalability) through a process such as a code review.	Transfer
	<i>Students will be able to independently use their learning to select the most appropriate tool to solve a variety of problems.</i>
	Meaning
	ENDURING UNDERSTANDINGS <i>Students will understand that...</i> - computers use data to process information and produce results. - different types of information are stored differently by the computer. ESSENTIAL QUESTIONS - If computers could speak, would Java be their preferred language?
Content Area Literacy Standards 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.	Acquisition
	<i>Students will know...</i> - that writing code in a Java IDE creates portable Java bytecode which can run on any computer with a Java Virtual Machine. - that computers use data to process information and produce results. - that different types of information are stored differently by the computer. - that Java uses a specific language syntax to successfully solve problems. <u>Vocabulary:</u> character, command line prompt, data, floating point number, input, integer, output, processing <i>Students will be skilled at...</i> - creating a running, procedure oriented Java program. - creating, selecting, and using appropriate memory locations for primitive data types (variables and constants). - using simple math operators in programs. - explaining security issues related to computer programs. - describing how computers execute source code.
21st Century Skills	
<i>Solve Problems</i> <i>Think Creatively</i> <i>Use and Manage Information</i>	

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

<i>Summary of Key Learning Events and Instruction</i>	
<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	