Introduction to Java Unit 2: Java Operators

ESTABLISHED GOALS:

Competencies:

- ***Students will demonstrate the ability to analyze machine code to utilize its correct interpretation in order to solve a problem.***
- ***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.***

Content Standards:

CSTA - Computer Science Teacher Association

CSTA 3B-A-5-8: Demonstrate code reuse by creating programming solutions using libraries and APIs (e.g. graphics libraries, maps API.)
CSTA 3B-D-4-25: Discuss how data sequences (e.g. binary, hexadecimal, octal) can be interpreted in a variety of forms (e.g. instructions, numbers, text, sound, image.)
CSTA 3B-A-6-21: Evaluate key qualities of a program (e.g. correctness, usability, readability, efficiency, portability, scalability) through a process such as a code review.
CSTA 3A-D-4-19: Analyze the representation tradeoffs among various forms of digital information (e.g., lossy versus lossless compression, encrypted vs. unencrypted, various image representations).

Transfer

*Students will be able to independently use their learning to **select the most appropriate tool to solve a variety of problems.***

Meaning

ENDURING UNDERSTANDINGS
Students will understand that…

- logic can be used to analyze a situation and devise an efficient solution.
- creating a looping structure for multiple lines of code reduces potential error.

ESSENTIAL QUESTIONS

- Can you be fluent in a different language without speaking it?

Acquisition

Students will know….

- that Java consists of a robust language syntax that includes many operators used to process and display data.
- that Java uses decision structures to allow for alternative actions based on data values.
- that Java has looping structures that allow lines of code to be repeated.
- that mathematical operators are a subset of the larger set of Java operators.

Vocabulary:

assignment statement, comparison operator, decision structure, false path, Graphical User Interface (GUI), Integrated Development Environment (IDE), logical operator, modulus operator, loop, true path

Students will be skilled at…

- applying complex Java operators to produce solutions to word problems.
- selecting the most appropriated decision structure to solve a problem.
- evaluating key qualities of a program
- discussing data sequencing interpretation
- analyzing the different aspects of digital information
- creating a program solution that shows code reuse

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 *grades 11-12 texts and topics*.
WHST.9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

21st Century Skills

- *Solve Problems*
- *Think Creatively*
- *Use and Manage Information*

WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	

Evaluative Criteria	***Assessment Evidence***
JA, stop here - this will be the next stage.	PERFORMANCE TASK(S):
	OTHER EVIDENCE:

Summary of Key Learning Events and Instruction

Language Arts Integration	***Mathematics Integration***
● 1.OA.1 Use	● 1.OA.1 Use
Technology Integration	***District Materials***
● 1.OA.1 Use	
