

COMPUTER SCIENCE III GRADE LEVEL EXPECTATIONS

Big Idea / Essential Q	Content	Assignments	Assessments Used	Standards
Computer Architecture	hardware, I/O	handout on computer architecture	worksheet on handout	CS1.1, CS1.2
	ROM, RAM, CPU	internet research	create memo	
History of C++	C++ developers	Internet research	memo	CS2.1, CS2.2
C++ Environment	C++ source file	text	working programs	CS3.1
	C++ workspace	programs		
	#include files			
First Program	algorithms	programs	working programs	CS4.1, CS4.2, CS4.3
	develop C++ code		final project	
	save file and workspace			
Debugging	syntax errors	text	working programs	CS20.1, CS20.2, CS20.3
	run-time errors	programs	final project	
	logic errors			
Documentation	English description of code	programs	working programs	CS19
Data Types	integer	text	working programs	CS5.1, CS5.2, CS5.3, CS5.4, CS5.5, CS5.6, CS5.7, CS5.8
	long integer	programs	final project	
	character			
	double			
	float			
Arithmetic Operators	addition	text	working programs	C6.1, CS6.2, CS6.3, CS6.4, CS6.5, CS6.6, CS6.7
	subtraction	programs	final project	
	multiplication			
	division			
	exponentiation			
	modulus			
	rules of precedence			

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Math Library	C++ math library	text programs	working programs final project	CS15
Comparison Operators	equal to not equal to greater than less than greater than or equal to less than or equal to	text programs	working programs final project	CS7.1, CS7.2, CS7.3, CS7.4, CS7.5, CS7.6
Decisions	if if / else if / elseif / else switch statements	text programs	working programs final project	CS12.1, CS12.2, CS12.3, CS12.4
Repetition I	for loops	text programs	working programs final project	CS8.1
Bit Manipulation	bitwise operators	text programs	worksheet working programs final project	CS16
Random Number Generator	rand srand	text programs	working programs final project	CS17.1, CS17.2
Functions	no arguments / no return arguments / no return arguments / return	text programs	working programs final project	CS13.1, CS13.2, CS13.3
Arrays	store and manipulate data	text programs	working programs final project	CS9
Repetition II	while loops do loops do / while loops break	text programs	working programs final project	CS8.2, CS8.3, CS8.4, CS8.5, CS8.6

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	continue			
Recursion	call functions recursively	text programs	working programs final project	CS14
Logical Operators	AND OR	text programs	working programs final project	CS11.1, CS11.2
Strings	create and manipulate strings	text programs	working programs final project	CS10
Files	sequential access files random access files	text programs	working programs final project	CS18.1, CS18.2
Schedule:				
Term One - Computer Architecture,History of C++,C++ Environment,First Program,Debugging,Documantation,Data Types, Arithmetic Operators,Math Library,Comparison Operators,Decisions,Repetition I,Bit Manipulation				
Term Two - Random Number Generator,Functions,Arrays,Repetition II,Recursion,Logical Operators,Strings				
Term Three - Files and all of the above				
Term Four - All of the above				