

Summer Work Packet

Congratulations on signing up for the AP Computer Science A, this is an exciting rigorous course that I am sure we are both equally looking forward to. The course focuses on problem-solving, object oriented programming, algorithm development and software design. Programming is a language, learning and finding errors in a language are challenging, there will be ups and downs along the way. One requirement of the class is to take the AP exam in May, which is given in the programming language Java. The second requirement is this summer packet. Good luck!

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“Continuous effort—not strength or intelligence—is the key to unlocking our potential.” — Winston Churchill

General Knowledge

Answers will be submitted via Google Form.

→ [Link Here](#) ← or access directly in Google Classroom

I HIGHLY suggest completing the general knowledge portion on this paper or typed into a Google Doc THEN entering your answers in the form when fully ready to complete in one go since the form will require you to sign into your Google account and is limited to (1) response per account.

- 1) Computers only read binary. What does that mean?
- 2) Convert the number 10 (base 10) into binary.
- 3) Convert the number 876 (base 10) into binary .
- 4) Convert 01001011 into base 10 (normal number).
- 5) What is a bit and a byte?
- 6) What is a Virus or a Worm and how do they affect a computer?
- 7) What are cookies, in relation to the internet? How are they useful and harmful?
- 8) What is Phishing and how does it work?

- 9) What is the difference between Style and Syntax in programming. Provide an example.
- 10) Why in a program the word "Happy" is not the same as "happy"
- 11) What are the reserved words and why are they reserved?
- 12) What are the primitive data types and how are they used?
- 13) What commands would you need in order for a program in Java to output "Hello World"
- 14) Write a method to calculate the sum of even numbers in an array .
- 15) Write a method that finds the largest element in an array

Vocabulary Review

Use the word bank. Assign a word to its definition. Words will only be used once.

Bank of Words

Array	Argument	Boolean	Character(Char)	
Class	Constructor	Double	Float	Method
Object	Field(Instance Variable)		Global Variable	Index
Loop	If Statement (Selection Structure)		Initialization	
Integer (Int)	Local Variable	Parameter	Return Type	
	Scope	Variable Declaration	Void	

Vocabulary Review Cont ...

_____	1)	True or false value
_____	2)	Numerical value with fractional parts, less precise
_____	3)	Numerical value with fractional parts, more precise
_____	4)	Numerical value with no fractional part
_____	5)	A single character
_____	6)	Telling the program to remember a variable name
_____	7)	Giving a variable a starting value
_____	8)	A variable declared inside a block of code, can only be used from the line of declaration through the end of that block of code
_____	9)	A variable declared outside of all blocks of code, can be used anywhere in the program
_____	10)	Where in the program a variable is accessible
_____	11)	A structure allowing the repetition of code
_____	12)	Indicates that a call to a method will not return a value
_____	13)	A variable that will be initialized to a value when a method or method is called
_____	14)	A value that is passed to a method or method call
_____	15)	The type of value given back to the caller of a method or method
_____	16)	A structure allowing for branching in the code (a choice between different blocks of code to be executed will be made)
_____	17)	A template for an object; a more complex data type
_____	18)	A method associated with a class; something an object of a class can do
_____	19)	A variable that is declared at the top of a class; an attribute for an object of a class
_____	20)	An occurrence or instance of a class
_____	21)	A “method” that creates an object of a class (initializes the instance variables)
_____	22)	A data structure that holds many of one type of thing
_____	23)	The location of an element in an array

Method Signatures

1. Look at the following method signatures and for each answer the following questions:
 - a. What is the method name?
 - b. Does the method return a value? If yes, what is the type of return value?
 - c. How many parameters does the method have?

<code>public void play()</code>	
<code>public void addAmount(int amount)</code>	
<code>public boolean asWings()</code>	
<code>public void compare(int x, int y, int z)</code>	
<code>public boolean isGreater (int number)</code>	

2. Write a method signature for a method named "go". The method has no parameters, and it does not return a value.
3. Write a method signature for a method named "process". The method has a parameter of type "int" that is called "number", and it returns a value of type "int".
4. On paper, write a method call (note: this is a method call, not a signature) for the "play" method from exercise 1. Write another method call for the "addAmount" method from exercise 1.

