

# Vocabulary By Mission / Assignment

Mission 1 and Mission 2 – Welcome & Introducing CodeX	
bug	When your program doesn't do what you intended it to do
debugging	the process of understanding what the computer is actually doing and then changing the code to do what you want it to do
CPU	Central Processing Unit or the brain of the computer
peripheral	A device that interacts with the CPU (common peripherals are LED lights, display screen, buttons, mouse, keyboard, and printer)
Mission 3 – Light Show	
RGB	Red, Green, Blue; the colors that make up a single pixel on the screen
sequential	Executing code line by line, one after another, in order
literal	a specific value, like 1 or "hello"
variable	a name you assign to some data that you use in code instead of the literal, or actual values
assign	Bind a name to a value; give a variable a value
Mission 4 – Display Games	
argument	Passing data to functions (information a function uses to complete its task)
integer	A whole number that can be positive, negative or zero
string	A sequence of characters, like words or sentences
Conversion function	a built-in function that converts a value to a different (and specific) data type
branching	Decision points in code; a condition
selection	Decision points in code; a condition – this isn't in the documentation but is used in AP CSP
boolean	True or False data type (values that can be True or False)
indentation	Structuring blocks of code in Python; statements ending with a colon (:) execute the block of code indented four spaces beneath it
Mission 5 – Micro Musician	
readability	Making code easy to understand for humans.
comments	Notes in code that are ignored by the computer but can explain what the code does These vocab words are not specifically in the Mission instructions, but are included in the warm-up and can be added either in warm-up or wrap-up. Should be covered for the AP exam
analog	Smooth and continuous signals that represent a quantity, like sound waves
digital	A numerical representation of an analog signal, represented in increments

Design Process and Flowcharts	
Design process	a tool that helps you break down large projects into smaller, easier-to handle stages
algorithm	a sequence of steps for completing a task (step by step process)
flowchart	a diagram that uses shapes, lines, and arrows to sequence steps; a visual representation of the input, output, decisions, and actions that take place within a program
Mission 6 - Heartbeat	
loop	Repeats a block of code, subject to a given condition.
While loop	Repeats a block of indented code as long as the condition is true.
Infinite loop	A loop that never ends because the loop is always true.
iteration	The repeating portion of an algorithm; code that repeats until a given condition is met or a specified number of times.
Increment (a counter)	Increasing a variable by a specific amount. Often counters are incremented by one: <b>count = count + 1</b> , like a counter, but the value can be any literal number (or constant).
Decrement (a counter)	Decreasing a variable by a specific amount. Often counters are decremented by one, like a countdown: <b>count = count - 1</b> , but it can be any literal number or constant.
Define and Call Functions Lesson	
Abstraction	the process of taking away or removing characteristics from something in order to reduce it to a set of essential characteristics
Function	a named set of instructions that accomplishes a task
Mission 7 – Personal Billboard	
Comparison operator	Operators that let you compare two values; the result is True or False. Comparison operators include: ==, <, >, <=, >=, !=
Index	A number that keeps track of what choice should be displayed.
Nested Condition	Another if statement that is part of (embedded in) the block of code in an if statement (an if statement within an if statement).
List	A sequence of items you can access with an index.
Lists Practice #1	
List	an ordered collection of elements
Index	a common method for referencing the elements in a list or string using numbers
Element	an individual value in a list that is assigned a unique index
List Length	how many elements it contains. Lists can grow or shrink as elements are added or removed. You can calculate the current length by using the function: <b>len(list_name)</b>
Mission 8 – Answer Bot	

Range	A sequence of numbers you can iterate over. You must provide at least the stop (or last) number in the sequence. Optional: you can provide the start (or first) number in the sequence and also the step, if other than increasing by 1.
Constant	A named value that doesn't change during the run of the code. By convention, constants are represented with ALL CAPS
<b>Types of Division</b>	
Decimal (or real number) division	A regular mathematical division problem, where the answer is always a decimal (or real number) even when the divisor goes into the dividend evenly
Integer division	The whole number from a long division problem – the number of times a divisor goes evenly into a dividend
Modulo (or modulus) division	The remainder of a long division problem – the amount leftover from a divisor and a dividend
<b>Mission 9 – Game Spinner</b>	
Logical Operator	Operators that handle combinations of Boolean results; not, and, or
Function	A named chunk of code you can run anytime just by calling its name; also called a procedure
Simulation	Code that builds a <i>model</i> of something, and lets you play with that model. Simulations let you explore "virtual" situations, both realistic and imaginary, that might be difficult or impossible to do in the real world.
Parameter	A local variable in a function that receives a value passed into the function when it is called; information the function needs to complete its task
Argument	The value passed into a function – information the function needs to complete its task. An argument can be a literal value, a variable, or an expression.
Local variables	Variables defined inside a function, and can only be used within that function.
<b>Mission 10 – Reaction Time</b>	
Argument	Review from previous mission
Computer clock	Electronic clock circuits; the heartbeat of the computer. The tick of the clock moves through the code one line at a time. It is also used in the sleep function, scheduled activities within the CPU, and everything timing related on the computer.
Monotonic	Always increasing (a computer's electronic clock is not monotonic; like an odometer it will wrap-around once the highest value is reached)
<b>Mission 11 – Spirit Level</b>	
Accelerometer	A device that measures proper acceleration; a sensor chip that detects motion, impacts, and orientation
Tuple	An <i>immutable</i> sequence of items that you can access with an <i>index</i> , or a list with values that don't change. A read-only version of a list.
<b>Mission 12 - Night Light</b> (review from Mission 5)	

Analog	Infinite variation in something, like hot to cold or light to dark; smooth and continuous signals that represent a quantity, like sound waves
Digital	A numerical representation of an analog signal, represented in increments
ADC	analog to digital conversion
<b>Traversing a list</b>	
Traversing	traveling or traversing through a list one element at a time, in order, starting with index 0 (first element) and going through to the last element (index len-1)
Sequential (M3)	Executing code line by line, one after another, in order
Selection (M4)	Decision points in code; a condition – <b>this isn't in the documentation but is used in AP CSP</b>
Iteration (M6)	The repeating portion of an algorithm; code that repeats until a given condition is met or a specified number of times.
<b>Traversing list program – review from previous lessons</b>	
Traverse	traveling or traversing through a list one element at a time, in order, starting with index 0 (first element) and going through to the last element (index len-1)
	Review <b>sequential</b> , <b>selection</b> , and <b>iteration</b> from previous lessons (Mission 3, 4, and 6)
<b>Functions, parameters and local variables – review from Mission 9</b>	
Function	a named set of instructions that accomplishes a task (A named chunk of code you can run anytime just by calling its name; also called a procedure)
Parameter	A local variable in a function that receives a value passed into the function when it is called; information the function needs to complete its task
Argument	The value passed into a function – information the function needs to complete its task. An argument can be a literal value, a variable, or an expression.
Local variable	Variables defined inside a function, and can only be used within that function.
<b>Mission 13 - Sounds Fun</b>	
User Interface (UI)	The area where a person interacts with a physical device, often through a screen
Bitmap	Graphics bits – drawing images and text. A bitmap is an object that can hold a 2D image of a given width and height; a list of pixel RGB values.
Local variable	A variable that is “private” to a function. It only exists while the function is running, and is separate from any other variable outside the function.
Global variables	Variables defined outside of a function. They exist the entire life of the program and can be accessed and used inside a function.
initialization	Set the initial or first value of a global variable when the program starts. Also, set the screen to its beginning look.
Soundlib module	Functions for creating music and sound effects, including different types of tones.

For loop	Looping across a range of numbers, or iterating over a list. A for loop uses a built-in range function to specify the sequence of numbers you need. It is simpler than a while loop because you don't need to initialize and update a loop variable; it happens automatically.
Blocking function	Functions that block your code from continuing until they are finished. The code has to wait while a song plays, for example.
Non-blocking function	A function that doesn't make your code wait for the function to finish. For example, other lines of code can execute while a song is playing.
Toggle	Flip the state of a variable (True to False or False to True) that is used to either do or not do something.
Nested for loop	A for loop with a for loop inside, or nested. The second loop is nested inside the first one. Every time the outer loop executes, the inner loop completes all its cycles.
<b>Mission 14 - Line Art</b>	
Bitmap (review)	Graphics bits – drawing images and text. A bitmap is an object that can hold a 2D image of a given width and height; a list of pixel RGB values.
Pixel	Elements of a picture, short for “picture element.” They are the tiny dots that make up larger images.
Magic number	Numbers that just appear in code with no explanation. When something changes in the future, the number doesn't work anymore and you have to change it.
Literal (review)	A specific value, like 1 or “hello”
envelope	In geometry – a curve created by straight lines moving down and across a grid.
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<b>Mission 16 - Breakout</b>	
Prototype	A model of something from which the final thing is developed, or an early sample created to test a concept
Matrix	A structure with rows and columns – a 2D array