

AP CSP CodeBot Vocabulary

Mission 1 -- Welcome	
Browser	Software that displays web pages
Cloud	A place to save files and data through the Internet
Objective	The steps in the mission; has a goal to accomplish
Text editor	Where you type the code
Code	Instructions to the computer
Toolbox	A place in CodeSpace to keep information you learn about programming concepts so you can use it later when you need the information
Simulation	A 3D environment that lets you see the robot move and interact in a virtual world
Mission 2 – Introducing CodeBot	
CodeBot	A computer on wheels with lots of sensors and controls built-in
Peripherals	Devices that give input or output to CodeBot (some CodeBot peripherals are LED lights, speaker, motors, line sensors, proximity sensors, an accelerometer, and pushbuttons)
Motors	Programmable electric engines; powers the wheels
LEDs	Light emitting diodes; tiny and efficient electronic components that produce light
Wheel encoders	Discs that rotate, counting the invisible IR light beam pulses through its slots
Static electricity	A charge that can build up and causes a jolt and spark when grounded
Comment	Code that doesn't get run (more information in Mission 3)
Import	Provides access to a module (or library) of built-in Python functions to use in your code
Mission 3 – Time and Motion (Objectives 1-6)	
Physical computing	Writing code (instructions) for a physical device, like CodeBot or cars
Editor shortcuts	Keyboard hotkeys to write code faster; combinations of keys which complete a task
CPU	The “brain” of the computer that executes your code; the Central Processing Unit
Debugging	The process of understanding what the computer is actually doing and then changing the code to do what you want it to do
Delay	Functions that slow things down, like sleep(); the module must be imported first
Blocking functions	Functions that pause program execution; no other code will run during the pause
Literal	An actual value, like 1 or “hello” or True
Variable	A name to which you assign some data, any type of information your program uses; must be defined before it is used
Boolean	A value that is True or False

Argument	Passing data to a function, determined by the position in the list when the function is called; arguments can be literal values, like True, or variables, like delay
Binary	How a computer deals with digits; electrical connections, like switches, that are either on or off (2 states)
Byte	8-bits of binary data
Mission 3 – Time and Motion (Objectives 7-9)	
Comments	Notes in the code about what you are doing; increases the readability of code and is meant for humans, not the computer (they are not instructions to the computer and are not executed)
Whitespace	Adding blank lines and space around symbols to make the code more readable (ignored by Python, non-executable)
Algorithm	A precise sequence of instructions that the computer can follow exactly, one step at a time, to complete a task or solve a problem
Mission 3 – Time and Motion (Objectives 10-11)	
Control flow Branching	Decision points in code; code will take a different branch or path depending on a condition
Condition	A Boolean value (True or False), often the result of a comparison operator like <, > or = Use an if statement, optionally followed by an elif or else, for branching
Indenting	A way to structure blocks of code by offsetting a block of code four spaces; blocks of code are indented following a statement with a colon (:)
Mission 4 – Animatronics (Objectives 1-5)	
Loop	Changing the flow of the code by repeating a block of code, subject to a condition
While condition	A statement that tells Python to repeat the block of code as long as the given condition is true
Infinite loop	A loop that never ends because the condition is always true
Updating a variable	Assign a new value, based on the old value of the variable.
Increment	Update a variable by adding one (or any specific number) to the old value
Single equal (=)	Assignment – used to assign a value to a variable
Double equal (==)	Comparison operator to determine if two objects are the same
Break	Exit the nearest enclosing loop
Mission 4 – Animatronics (Objectives 6-12)	
Debounce	Reset the internal status of a button so the press isn't counted twice
While loop	A loop that iterates, or repeats, while a condition is true. In this example, the loop will iterate 10 times, with count having the values 0 through 9. When it becomes 10, the condition is no longer true and the loop ends. <div data-bbox="1133 1755 1482 1854"> <pre>count = 0 while count < 10:</pre> </div>
Parameter	A list of names declared in a function definition that receive values when the function is called and act like local variables in the function

Random number	When using randrange, a range of numbers is given (start, stop). The random number will include start but will be less than stop.
Function	A named chunk of code you can run anytime just by calling its name; reuse code without retyping it
Mission 5 - Fence Patrol	
Line sensors	Photo reflective sensors that detect lines and boundaries beneath your 'bot
API	Application Programming Interface – the details of how your program interacts with different services it needs
Analog	Infinite variation, like from dark to light or cold to hot
ADC	Analog to digital converter
REPL	Read Evaluate Print Loop – the command line that lets you type Python statements directly and observe what happens
DRY	Don't Repeat Yourself – never write the same code twice
Return statement	Exits the function and sends a value back to the code where the function was called
Mission 6 – Line Follower	
list	A sequence of items you can access with an index
tuple	Read-only form of list
Or (Logical operator)	Multiple conditions to compare, testing if either one or the other or both is true
Hard coded values	Specific numbers used in code that can be replaced with a variable or constant
globals	Variables defined outside of a function; they are available during the entire program and can be accessed throughout the entire program
locals	Variables defined inside a function; they only exist while the function is running and can only be accessed in the function
Int (integer)	A value that is an integer; designated by int in Python; can be positive or negative
Float (decimal)	A value that is a decimal, also known as a floating point; can be positive or negative
auto-calibrate	Use CodeBot sensors to automatically adapt to its environment by detecting lines and objects and setting parameters like is_reflective and thresh.
Mission 7 – Hot Pursuit	
Proximity sensors	Infrared (IR) sensors that can detect nearby objects based on the reflected IR light
Detection sensitivity	How much light is needed for the proximity sensor to detect an object (from 1 to 100)
Emitter power level	The brightness of CodeBot's IR flashlight, with settings from 1 to 8 (high power)
Not (logical operator)	A special kind of logical operator that needs only one Boolean operand, and inverts it; it can be used to toggle a Boolean variable
