

# Unit 1 CodeBot Vocabulary By Mission

<b>Lesson – Getting Started</b>	
Browser	Software that displays web pages
Cloud	A place to save files and data through the Internet
<b>Mission 1 – Welcome to CodeSpace</b>	
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
Debugging	Fixing your code
<b>Mission 2 Lesson 1 – Introducing CodeBot</b>	
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
<b>Mission 2 Lesson 2 – Introducing CodeBot</b>	
Comment	Code that doesn't get run (more information in Mission 3)
Import	Provides access to a module (or library) of pre-defined Python objects and functions to use in your code
Boolean	A data type that has two possible values: True or False
<b>Mission 3 Lesson 1 – Time and Motion (Objectives 1-5)</b>	
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

Argument	A value that is passed to a function
Literal	An actual value, like 1 or “hello” or True
Variable	A name to which you assign some data, like a number; must be defined before it is used
<b>Mission 3 Lesson 2 – Time and Motion (Objective 6)</b>	
Binary	A number system, or computer language, that uses only 0s and 1s
Bit	A single binary digit (on/off or 1/0)
Byte	A set of 8-bits of binary data
Bit banging	Controlling hardware with binary digits
<b>Mission 3 Lesson 3 – Time and Motion (Objectives 7-8)</b>	
Wildcard	The * character; shorthand for “everything”
<b>Mission 3 Lesson 4 – Time and Motion (Objectives 9-11)</b>	
Algorithm	A list of instructions, in order, that the computer can follow to complete a task. (A precise sequence of instructions that the computer can follow exactly, one step at a time, to complete a task or solve a problem.)
Comments	Notes in the code about what you are doing; ignored by the computer
Whitespace	Adding blank lines and space around symbols to make the code more readable
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 (:)

## Unit 2 CodeBot Vocabulary By Mission

<b>Mission 4 Lesson 1 – Animatronics (Objectives 1-3)</b>	
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.
Single equal (=)	Assignment – used to assign a value to a variable
Double equal (==)	Comparison operator to determine if two variables or values are the same

<b>Mission 4 Lesson 2 – Animatronics (Objectives 4-7)</b>	
Break	Exit the nearest enclosing loop
Increment	Increase by one
Debounce	Reset the internal status of a button so the press isn't counted twice
<b>Mission 4 Lesson 3 – Animatronics (Objectives 8-11)</b>	
While loop	<p>A loop that iterates, or repeats, while a condition is true.</p> <pre>count = 0 while count &lt; 10:</pre> <p>In this example, the loop will iterate 10 times, with count having the values 0 through 9. When count becomes 10, the condition is no longer true and the loop ends.</p>
Random number	An integer generated by using a function from the Python random module; a range of integers is given with the parameters (start, stop). The random number will include start but will be one less than stop.
Function	A named chunk of code you can run anytime just by calling its name; lets you reuse code without retyping it or copy/paste.
Parameter	A variable that gets its value when the function is called.
<b>Mission 4 Lesson 4 – Animatronics (Objective 12)</b>	
Constant	A variable that holds a value that doesn't change during program execution. A constant is often designated by typing the name in ALL CAPS to visually tell it apart from variables.

## Unit 3 CodeBot Vocabulary By Mission

<b>Mission 5 Lesson 1 - Fence Patrol</b>	
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
Digital	Incremental variation, within a specific range
ADC	Analog to digital converter
<b>Mission 5 Lesson 2 - Fence Patrol</b>	
DRY	Don't Repeat Yourself – never write the same code twice
Function	(Review) A named chunk of code you can run anytime just by calling its name; lets you reuse code without retyping it or copy/paste.
Parameter	(Review) A variable that gets its value when the function is called; part of the function definition.
Argument	(Review) A value that is passed to a function during a function call.

<b>Mission 5 Lesson 3 - Fence Patrol</b>	
Return statement	Exits the function and sends a value back to the code where the function was called.
Runtime error	A coding error that happens when the program is actively running.
<b>Mission 5 Lesson 4 - Fence Patrol</b>	
Algorithm	(Review) A list of step-by-step instructions the computer can follow to complete a task.
<b>Mission 6 Lesson 1 - Line Follower</b>	
List	A sequence of items you can access with an index.
Index	The position of an item in the list; used to access a specific item.
REPL	Read Evaluate Print Loop – the command line that lets you type Python statements directly and observe what happens
<b>Mission 6 Lesson 2 - Line Follower</b>	
int data type	A value that is an integer; designated by <b>int</b> in Python; can be positive or negative.
float data type	A value that is a decimal, also known as a floating point; can be positive or negative.
Tuple	Read-only form of list.
Immutable	Unable to be changed.
Logical operators	And, or and not; operators that allow for multiple conditions in a comparison. Logical operators handle combinations of Boolean results.
Or	Allows for multiple conditions where only one must be true for the entire comparison to be true.
<b>Mission 6 Lesson 3 - Line Follower</b>	
Calibrate	Using sensor readings to determine the values of variables; adapting code to the environment using data.
Locals	Variables defined inside a function; they only exist while the function is running and can only be accessed in the function.
Globals	Variables defined outside of a function; they are available during the entire program and can be accessed throughout the entire program.

## Unit 4 CodeBot Vocabulary by Mission

<b>Mission 7 Lesson 1 – Hot Pursuit (Objectives 1-3)</b>	
Proximity sensors	Infrared (IR) sensors that can detect nearby objects based on the reflected IR light.
Detection threshold	How much light is needed for a True detection. For proximity sensors, the range is 0%--100%.
Emitter power level	The brightness of CodeBot's IR flashlight, with settings from 1 (low) to 8 (high power).

<b>Mission 7 Lesson 2 – Hot Pursuit (Objectives 4-7)</b>	
Calibrate	Using sensor readings to determine values of variables; adapting code to the environment using data.
Automate	Use technology, like a computer, to do a task automatically.
Default	A pre-selected option.
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.
<b>Mission 7 Lesson 3 – Hot Pursuit (Objectives 8-11)</b>	
Toggle	Flip from True to False, or False to True; on to off or off to on.
Not	A logical operator that is used to toggle a Boolean variable.
Abstraction	The process of taking away or removing characteristics from something in order to reduce it to a set of essential characteristics.
<b>Mission 9 Lesson 1 - All Systems Go!</b>	
System sensors	Sensors that read internal settings, like power and temperature.
Under load	Batteries are being used to power something, like turning on LEDs or running motors.
Float (review)	A decimal number, either positive or negative.
$y = mx + b$	The equation of a straight line.
User interface (UI)	A way for a person and a machine to communicate, which includes screen, keyboards and LEDs.
<b>Mission 9 Lesson 2 - All Systems Go!</b>	
Milliseconds	A millisecond is a thousandth of a second.
Ambient	Surroundings.
Append	Adding a new item to the end of a list.
Traverse	Accessing each item in a list in order.
Baseline data	Starting point used for comparison; original data.
Deadband	In a control system, the range or band of input values where the output doesn't change.
<b>Mission 9 Lesson 3 - All Systems Go!</b>	
Orientation	The relative position of something.
Accelerometer	A tiny chip that measures the force of acceleration in 3 directions: x, y and z.
Navigation	Knowing where you are and planning and following a route for where you want to be.
Oscillate	Move or swing back and forth at a steady speed.

Proportional	Change at the same rate.
Incline	Sloping upward.