Vocabulary By Mission

Mission 1 – Welcome to Lift-Off! Peripherals	
Peripheral	A device that interacts with the CPU (common peripherals are LED lights, display screen, buttons, mouse, keyboard, and printer)
Function	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	Passing data to functions (information a function uses to complete its task)
Variable	A name you assign to some data used in code instead of the literal, or actual, values
Constant	A name for a value that doesn't change during program execution
Mission 2 – Lift Off	
Abstraction	The process of taking away or removing characteristics from something in order to reduce it to a set of essential characteristics
Algorithm	A sequence of steps for completing a task (step by step process)
Branching	Decision points in code; a condition
Mission 3 – Conserve Energy	
Analog	A peripheral with a range of integer values – from 0 (off) to 2^16 - 1 (full power)
Digital	A binary peripheral with two states – True or False
ADC	Analog to digital converter – converts an analog measurement to a finite digital value. For CodeX, which is a 16-bit microcontroller, the digital values range from 0 to 2^16-1 (65,535)
Pulse-Width Modulation	Analog measurement where on/off pulses are sent at a constant rate, determined by the duty cycle and frequency (or analog period)
Mission 4 – Hatch Lock	
RGB	Red, Green, Blue; the colors that make up a single pixel on the screen
Pixel	Picture element; tiny dots used to compose images and text on a digital screen
Tuple	An *immutable* sequence of items that you can access with an *index*, or a list with values that don't change. A read-only version of a list.
Index	A common method for referencing the elements in a list, tuple or string using a number
Mission 5 - Alert System	
Duty Cycle	The percentage of time power is ON during pulse-width modulation.
Frequency	The analog period, or how rapidly the device pulses during pulse-width modulation.
REPL	"Read, evaluate, print loop" command line that enables print statement output.
Simulation	Code that builds a *model* of something; lets you play with that model to explore "virtual" situations.

Threshold	A specific limit or point that must be met or exceeded in order for something to occur.
Mission 6 - Life Support	
Servo	A DC motor with a controller circuit, internal feedback mechanism and gearbox. The 360 continuous servo goes in both directions at different speeds. The 180 positional servo turns in either direction to a specific angle and holds that position.
Finite-State Machine (state machine)	The status of a system with transitions. With this system, your program can only be in one of a known set of "states" at any given time. Usually "state" is based on variables in your code.
State	A phase of a program. Keeping track of states helps you understand and manage your code. Each state might have its own set of conditions it is tracking.
Transition	Moving between states; the program transitions from one state to another when certain conditions are met.
Mission 7 – Solar Tracking	
Photoresistor	A sensor that changes its resistance when light shines on it. A high intensity of light causes less resistance, and less light causes more resistance.
Bouncing	When a digital input registers multiple times instead of once, like a button press.
Mission 8 – Prepare Lander	
Pull	A property that can be changed when setting up an input peripheral that determines the default value of a pin when nothing is connected. The pull can be set to "up" to move a weak pull toward 3 volts.
Mission 9 – Automatic Gardner	
NC / NO	Terminals on the relay used for connecting peripherals. NO = normally open; this terminal is the most common one used.
Priming	The process of removing air from pump lines.
Conductivity	The ability of a material to conduct electricity. In this mission, it is water. More water in the soil means more conductivity.
Mission 10 – Exploring the Surface	
Breadboard	A plastic board with tiny holes for inserting electronic components to build a circuit.
Sonar	Short for "sound navigation and ranging"; it is a method of detecting and locating objects by using reflected sound waves.
Ultrasonic Sensor	A peripheral that uses sonar to detect an object and the distance to the object.
Terminal Strip	A column of tiny holes on a breadboard that are electrically connected together.
Jumper Wires	Wires with connector pins at each end; used for connecting items on a breadboard.
Resistors	Electronic components that limit the amount of current that passes through them. They are used with other peripherals to keep them from being damaged.