



# UNDERSTANDING BASIC CODING TERMINOLOGY

If you want to help your child learn programming and coding, it's also important for you to understand basic coding terminology. And that's something we can definitely help with!

Helping children grasp basic coding concepts and terminology is a good first step for them to learn coding skills - and you don't need any prior knowledge of electronics and coding to do this.

## WHAT IS CODING?

Coding is basically telling a computer program what to do by entering coded commands and instructions that it can read and execute. It can be as simple as visual drag-and-drop software or as complex as C++.

## BASIC CODING TERMINOLOGY

Here are some [basic coding](#) and programming terms to get you started. Understanding these terms will allow you to grasp some of the basic concepts in computer coding.

- Algorithm – basically the set of instructions, a bit like a recipe, that you use to code. Algorithms are conditional statements that may involve loops, arithmetic operators, arrays, and functions (more on those below!).
- [Arrays](#) – groups of similar types of data. For example, locations in a grid map could be an array as they all share the same type of information.
- Arithmetic operators – the four basic arithmetic operators used in programming are addition (+), subtraction (-), multiplication (\*), and division (/). These are the



foundation for other more complex math operators. Operators are used to specify mathematical processes.

- Autonomous – refers to being independent, such as with autonomous control. For example, a robot can be programmed to autonomously avoid obstacles.
- Binary numbers – these are numbers that are expressed in zeros and ones. They may represent other types of data like letters and image pixels.
- Bit – a bit is a basic computer memory unit. It is a combination of two words: binary and digit.
- Bug – an error in the programming or coding that needs to be fixed.
- C++ – a high-level computer programming language that can be used for a wide range of purposes. It can be used to create software applications or program machine motions.
- Coding languages – interchangeably referred to as programming languages and may also include web development languages like HTML and CSS.
- Computer program – a set of instructions that a computer can execute. It could be a simple or complex set of instructions like a software application.
- Conditional statements – logical statements in the form of “if-then” statements. They may also include other logical operators such as “or” and “and”.
- Constants – mathematical values that never change, such as the value of Pi. They are useful in mathematical calculations.
- Debug – when a computer has bugs, they need to be debugged. To debug means to locate and remove or solve the bugs or errors in programming. A bug can be as simple as a misplaced comma or as complex as an entire string of command.
- Else statements – the options that need to be chosen by a computer in executing a program if the if-statements are not true.
- For loops – these allow a programmer to run a specific block of code repeatedly.
- [\*Functions\*](#) – pieces of codes that run only when they are called or referred to.
- If statements – conditional statements that provide options. They may fork into two or more steps depending on the truthfulness of a given condition.

- Java – one of the flexible general-purpose computer programming languages. It is designed to have as few implementation dependencies as possible, allowing developers to run it on all platforms that support Java without the need for recompilation.
- Linux – an open-source programming language that can run on various devices, including mobile phones and robots. The Android open-source mobile OS, for instance, is written in Linux.
- Loops – instructions that allow a computer to repeatedly run a code block until a specified condition is reached. For example, a loop instruction may repeatedly run video scans until no motion is detected in the field of view of a camera.
- Program – a program is a set of computer instructions. It can be simple or a set of very complex instructions.
- Python – a powerful programming language that has a wide range of uses, including game development.
- Scratch – a graphical, drag-and-drop programming language ideal for kids or anyone who wants to get started with coding. A programmer can create interactive stories and comics.
- Scripts – parts of specific coded instructions or steps that a computer can follow. It may either be a complete instruction or just part of a syntax of an instruction.
- Statement – the exact codes and syntax may vary depending on the programming language. It is basically a sentence that a computer can read and execute.
- Variable – a variable can stand for any type of data like number or word. A programmer can assign any value for a variable.
- Variable types – variables can stand for any value but the basic variables are strings, characters, integers, decimals, and Boolean values (either true or false).
- While loops – these are similar to if statements. A block of code can repeatedly run indefinitely until the condition is false.

Want to start coding at home? Try the Arduino Student Kit, which has been specially designed for remote learning. It includes easy-to-follow, step-by-step instructions for



hands-on coding and electronic projects. You can find out more about specific functions for controlling [Arduino boards](#) here.

*[Find your country's distributor](#), or [buy the Arduino Student Kit online](#).*