Introduction to PictoBlox

Lesson Progress

100% Complete

What exactly is coding?

> Coding also referred to as programming, is creating instructions that can be executed on a computer to perform a specific task or achieve a particular result.

Coding is just like solving a math problem. There may be many ways to solve a problem. Similarly, **there could be more than one way to write code for the same task.** Just like solving any other problem, some coding approaches are more efficient than others.

Think you are playing a video on your smartphone. Your phone is like a computer that needs to be instructed on what to be done. The app playing the video provides this instruction. This video-playing app is an example of coding.

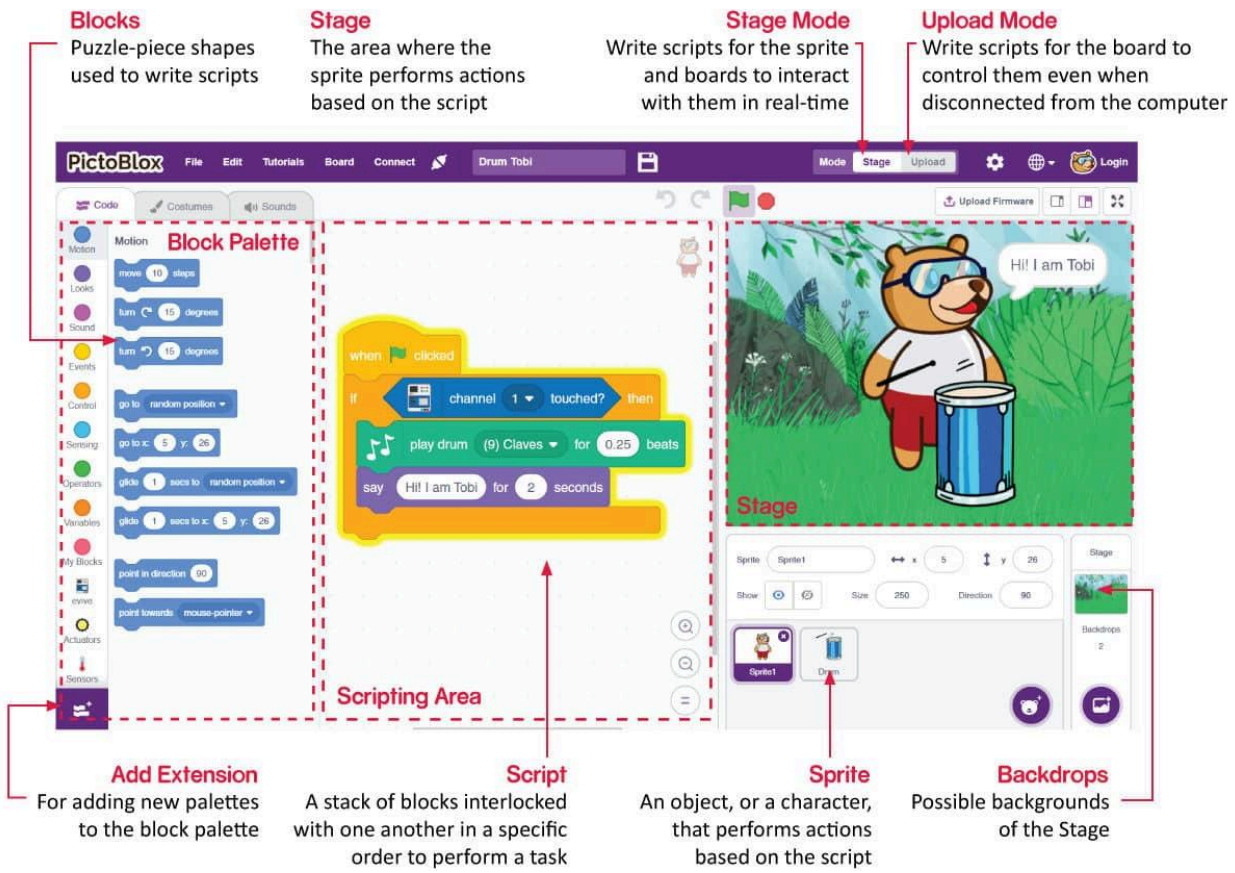
But how does the app communicate the instructions to the phone? It does via a programming language.

PictoBlox

PictoBlox is a graphical programming software based on Scratch blocks and is the ideal companion for setting the first step into the world of programming. Its user-friendly interface and drag-and-drop functionality eliminate the need to memorize syntax and rules that make traditional programming languages difficult.

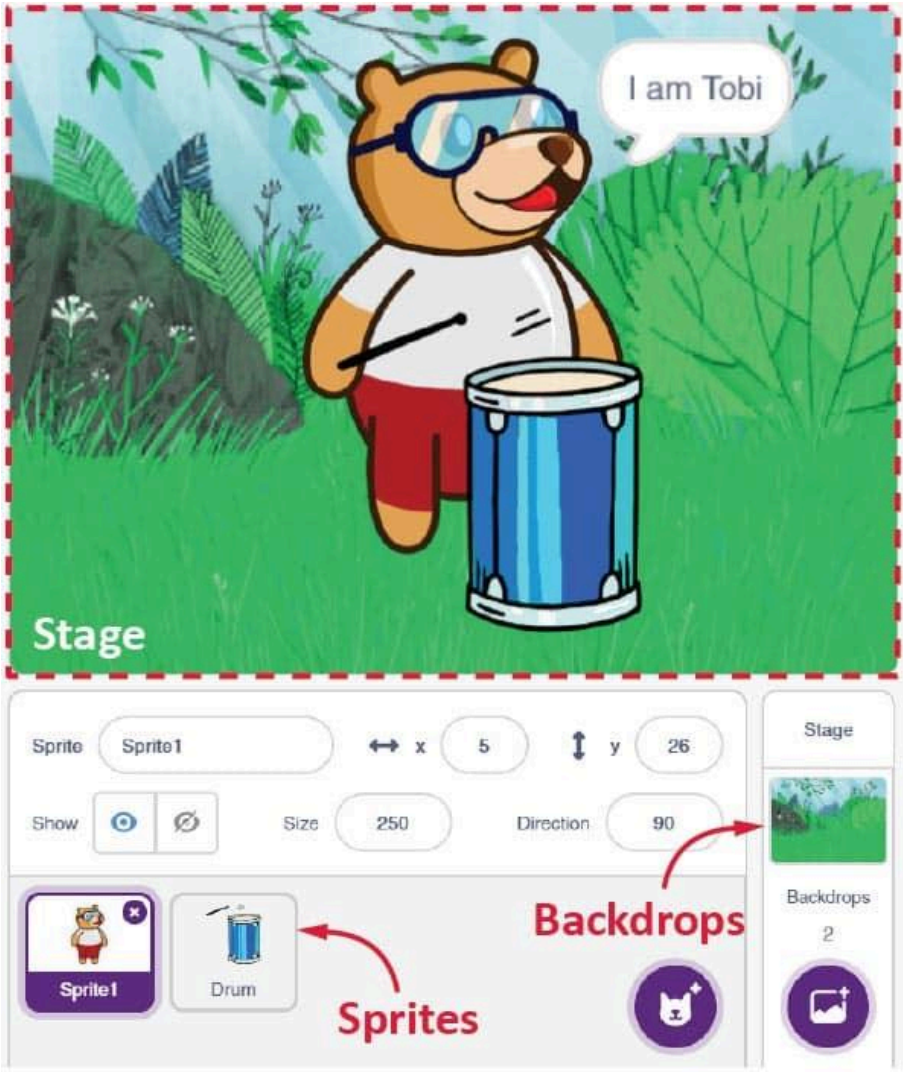
PictoBlox Interface

Let’s take you on a tour around it!



Stage

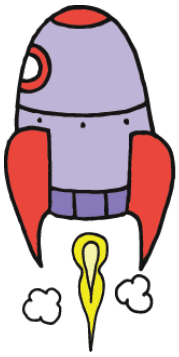
The ***stage*** is a background or a backdrop for your Scratch projects (the programs you'll create). It is a white background in the top left corner; you will see a bear standing there. His name is Tobi and he is what is called a *sprite* (we'll see in a moment what it is). The Stage is where the sprite moves, draws, and interacts with other sprites and/or hardware. It has its own set of scripts, images, and sounds.



Sprite

A ***Sprite*** is an object or a character that performs different actions in the projects. It understands and obeys the instructions that you'll give them in your projects. It can move and can be moved to any place in the stage (you can try by clicking on them and moving

them around).




Blocks

Block is like jigsaw puzzle pieces that fit into each other. They are predefined commands used to create programs by simply dragging and dropping them below one another in the scripting area.

Script

A ***script*** is a program or a code in PictoBlox/Scratch lingo. It is a set of ‘blocks’ that are arranged below one another in a specific order to perform a task or a series of tasks.

The **scripting area** is where you will create your scripts.

Traffic Lights

Lesson Progress

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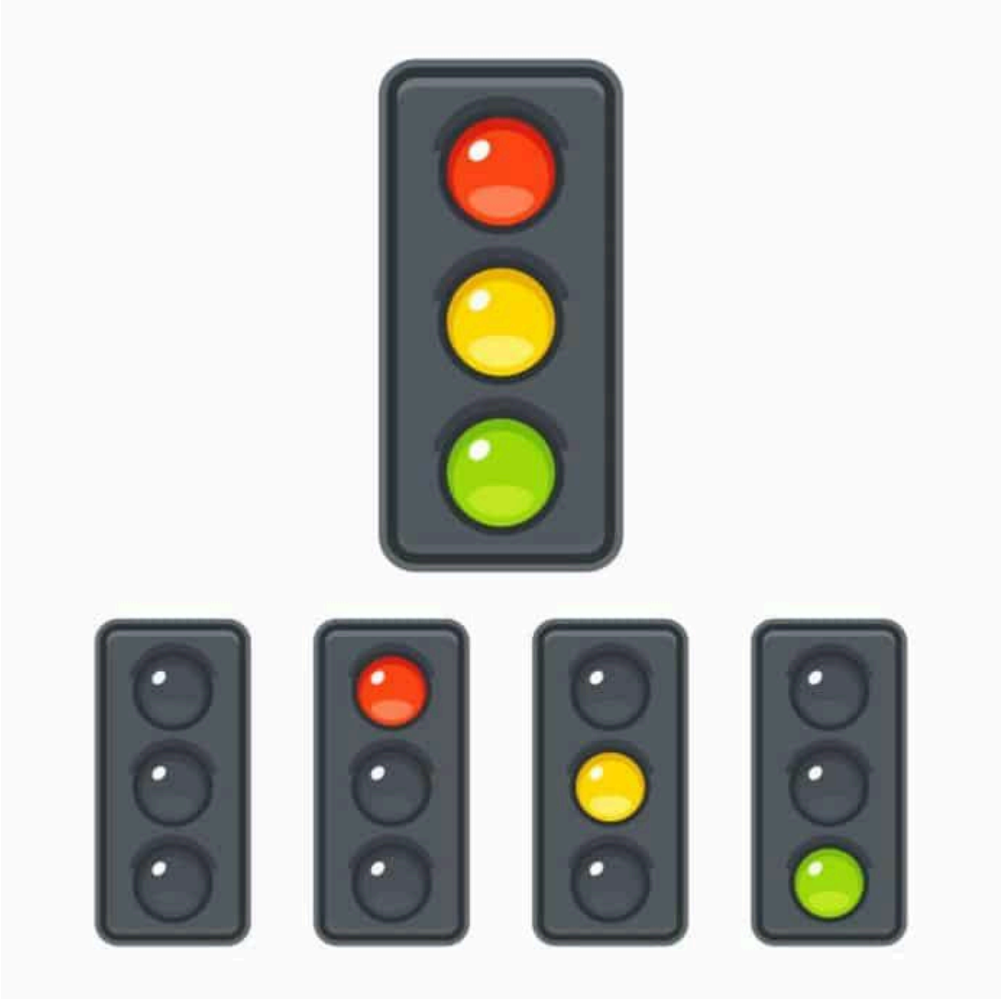
How does Traffic Signal Works?

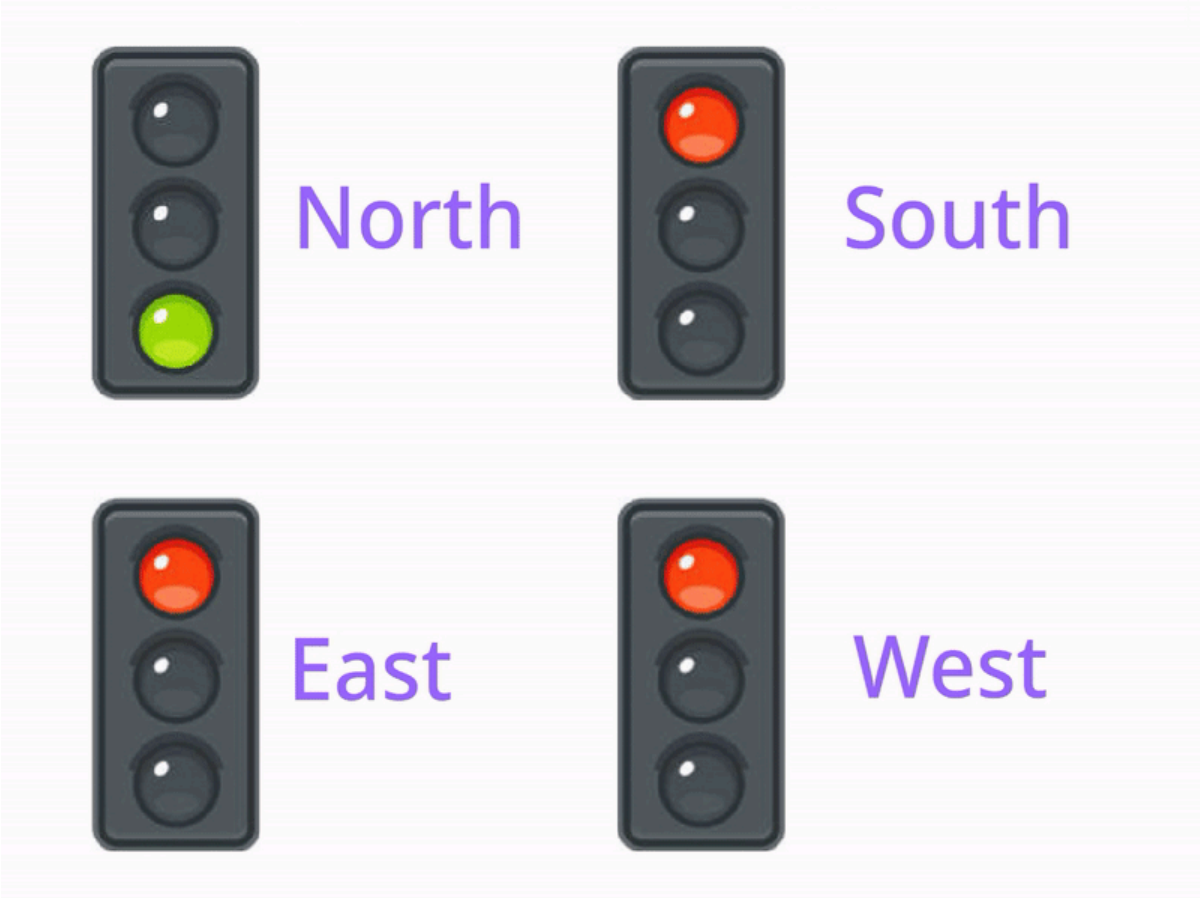
Have you ever wondered how traffic signals function? The traffic signals have 4 states:

- No Lights
- Red Light – STOP
- Yellow Light – LOOK
- Green Light – GO



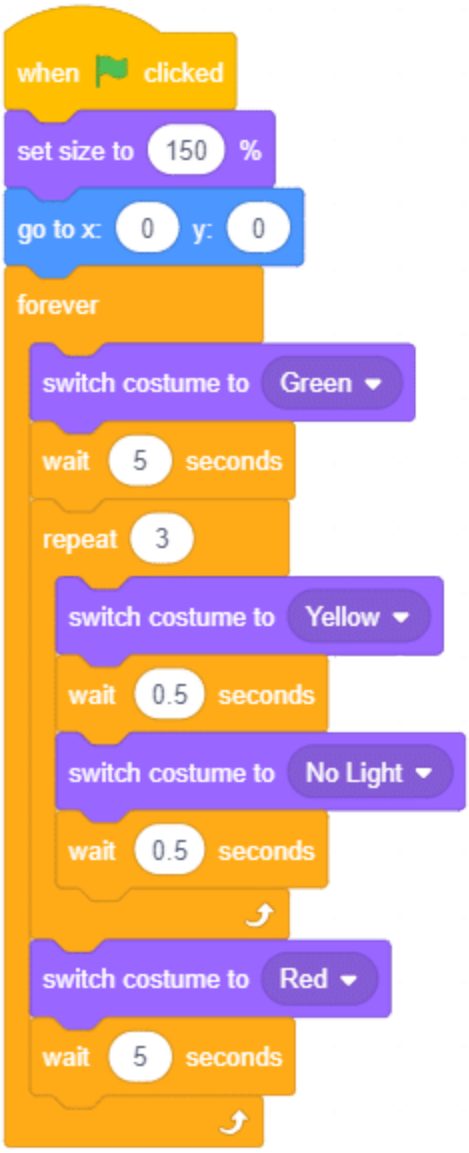
The lights cycle through green, yellow, and red at regular intervals to control road intersections' traffic flow.

The traffic signals work in sync to prevent accidents and help to avoid congestion on the roads.



Behind the Scenes

Few lines of code running in the background drive the traffic lights. The code changes the traffic signals to show different colors at regular intervals.



Sometimes it is even smarter, where the code detects congestion based on sensors and maximizes efficiency by only functioning when traffic is present.

Application of Coding

Most of us knowingly or unknowingly engage with programming, be it inside our homes or outside. Coding, in the modern world, can be seen on the streets, at the schools, at the local grocery stores, etc. Some of the practical examples of coding in the real world are:

- Interaction with bar-code scanners at shopping store
- Automatic control of traffic using traffic lights
- Booking movie, bus, train, flight tickets online
- Printers
- Computer software we use like web browser, Word, etc.
- Video games and animations for entertainment