

Glossary for [Color](#) tutorial

HSB: An alternative color mode standing for hue, saturation, and brightness. Hue is the color type, saturation is its vibrancy, and brightness is how light or dark it is. All three range from 0 to 255 by default.

Hue: The type or identity of a color (e.g. red, blue, green) in HSB mode.

Saturation: The vibrancy of a color in HSB mode; how muted or intense a color is.

Brightness: How light or dark a color is in HSB mode.

Grayscale: A range of values from 0 (black) to 255 (white), used to express color when no hue is needed. Every number in between is a shade of gray.

RGB Color: A color model that constructs colors by mixing red, green, and blue light. Each component ranges from 0 (none) to 255 (maximum). Unlike paint, mixing all three at full value produces white; mixing none produces black.

Alpha: An optional fourth color component that controls transparency. Ranges from 0 (fully transparent) to 255 (fully opaque). Transparency is an illusion created by blending color values, not see-through pixels.

Alpha Channel: The full set of alpha values for an image, collectively describing its transparency information.

Bit: A single on/off switch in a computer's memory, represented as a 0 or 1.

Byte: A group of eight bits. Eight bits together can produce 256 possible outcomes (2^8), giving a range of 0 to 255. This is why the range of values for colors is 0-255.

background(): A function that sets the background color of the window.

stroke(): A function that sets the color of a shape or text's outline.

fill(): A function that sets the color of a shape or text's interior.

noStroke()/noFill(): Functions that eliminate a shape's outline or interior color. Using both at once means nothing will appear.

colorMode(): A function that lets you redefine the range of color values Processing uses. By default, colors use RGB with a 0–255 range, but this can be changed to any range.

Glossary for [Objects](#) tutorial

Object: A thing that has properties (data) and the ability to do stuff (functions).

Class: A template that describes the idea behind an object (not the object itself). One class can produce many objects, just as one cookie cutter can produce many cookies.

Instance: A real-world example of a class. Every object you create is an instance of some class.

Instance Variables: The collection of variables that make up a class's data. Each instance of an object contains this set of variables.

Constructor: A special function inside a class that creates an instance of the object and sets it up. It always has the same name as the class and is called using the new operator.

Methods: Functions defined inside a class that give an object its functionality.

Dot Syntax: The way you call a method on an object: `variableName.methodName()`.

The new Operator: Used to initialize a new object from a class.

Constructor Arguments: Values passed into a constructor to initialize an object's variables. They are temporary and exist solely to pass values from where the object is made into the object itself.

Null: The value Processing assigns to an object that has been declared but not initialized. It means complete nothingness, not zero.

NullPointerException: A common error caused by forgetting to initialize an object, leaving it set to null.

Primitive Data Type: A singular piece of information such as an integer, float, or character. Primitives store only data, and a copy is made when they are passed into a function.

Complex Data Type: What objects are considered, storing both data and functionality. When passed into a function, a reference to the object is passed rather than a copy.

Pass by Reference: When an object is passed into a function, any changes made to it inside that function will affect the object throughout the rest of the sketch.