

Overview

Scratch is a programming language designed to help introduce computer science principles while minimizing the amount of syntax you need to learn to use the language. Scratch works by letting you drag-and-drop **blocks** together to create a **program**, which in this case is just a sequence of blocks that produce some effect. There are a lot of different blocks that you can experiment with in Scratch, and Scratch is smart enough to only allow you to put blocks together when it makes sense to do so.

Key Terms

- Scratch
- block
- program
- statement
- sprite



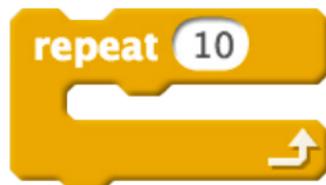
Statements in Scratch

Each block in Scratch represents a **statement**, which is just an instruction that the computer should follow. Programs in Scratch begin with the “When green flag clicked” block, which appears to the left. Underneath that starting block, you can drag other blocks from the “Scripts” tab, which divides the blocks into categories.

There are many different statements that you can make in Scratch, many of which involve actions taken by a **sprite**, which is just an object (like the cat you may see on the Scratch screen) whose actions you can control via blocks. For instance, you can make a sprite speak (via a quote bubble) or move. You can also play sounds, or have the program wait for a certain amount of time before continuing. Many other statements exist that you can experiment with to see how your program responds. Run your program by clicking on the green flag icon.

Condition Blocks

You can use conditional blocks (found in the “Control” category) to add some more complexity to your program. Any blocks inside of an “if ___ then” block, for instance, will only run if whatever’s in the hexagon-shaped space next to the word “if” is true. For instance, you can use the hexagon-shaped “touching” block found in the “Sensing” category to only execute some statements when the current sprite is touching the edge of the screen. To add even more complexity to your logic, you can use blocks like the “and” block (found under “Operations”) to only execute some statements when both of two conditions are true, or when at least one of two conditions is true, respectively.



Loop Blocks

Scratch also has blocks that allow you to repeat blocks of code multiple times. The “repeat” block, found in the “Control” category, can repeat a set of statements as many times as you wish. The “repeat until” block in the “Control” category will repeat all of the statements inside of it until a condition that you set is met. And the “forever” block will repeat a set of statements forever, never stopping until you click on the red stop sign icon on the screen to end your program.



Take some time to play around with blocks in Scratch to get a better idea of how and why different blocks fit together. When you finish writing a program, Scratch also allows you to share a link to your program, so that others can try it out and see how it works.