

Programming Languages

A programming language is simply just a language that computers can understand.

All programming languages are basically the same.
They all allow people to write programs that:

Run in a given order

Remember things

Can repeat things

And make choices

So don't be afraid if you don't know one language versus another, they are all easy to learn if you remember those 4 things.

PROVE IT!

**Your teacher is going to write
programs to have the computer
say "Hello World" in as many
languages as
possible in 1 minute.**



**Then you'll use google to verify
how many they got right.**

**But seriously, the things you learn
this year will enable you to
program **anything**.**

If you ever think "I don't know how to make that", just remember that it's some combination of everything of:

Run in a given order

Remember things

Can repeat things

And make choices

Loops In Scratch

Loops are the repetition rule:

Run in a given order

Remember things

Can repeat things

And make choices

Loops will repeat code a certain number of times.

There are 2 kinds of loops:

- 1. Repeat code exactly # times**
- 2. Repeat code *until* something is true.**

Example 1: repeat exactly # times

I am sending 100 birthday invitations:
repeat 100 times:

lick stamp

place on envelope

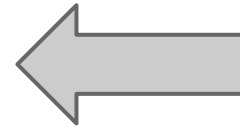


Example 1 in Scratch:



Sets the loop to repeat 100 times.

Example 1 in Scratch:



Anything IN the loop
(between the orange
brackets) gets repeated
100 times.

Example 1 in Scratch:



This part isn't repeated and isn't run until after the loop has finished repeating 100 times.

Example 2: repeat until something is true

I loooove ice cream!

repeat until the ice cream is gone:

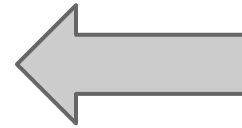
- scoop up ice cream

- place ice cream in mouth

- eat ice cream

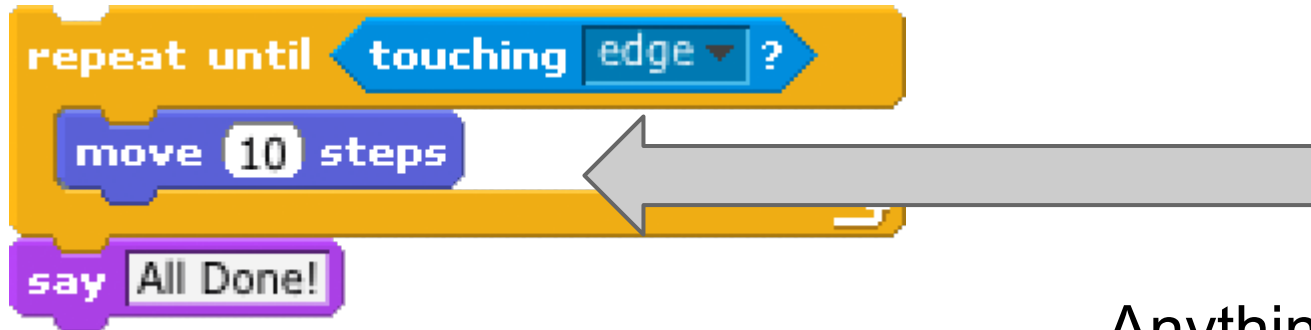


Example 2 in Scratch:



Sets the loop to repeat until the sprite touches an edge

Example 1 in Scratch:



Anything IN the loop (between the orange brackets) gets repeated until the sprite touches the edge.

Example 1 in Scratch:



This part isn't repeated and isn't run until after the loop has finished repeating.

When do I use a loop?

If you find yourself doing the same process over and over again (e.g. repeating) then it might be time to use a loop!

Loops in software:

Photo burst on iPhone

Traffic light



Okay! Let's try it together.