JavaScript

Math & Functions, Margaret Hamilton

01

REVIEW

What are the rubber duckies for?

DEBUGGING

What is debugging?

Looking through code to find the problem, and fixing it.

How did debugging get it's name?

Computers used to get ACTUAL bugs in it! You can thank Grace Hopper for the name.

What is a data type?

A type of data! It describes what our data is.

What kinds of data types have we used?

String, number, boolean

What's a variable and how do I write it?

A variable is a container (like a labeled box) for our data.

var fishType = "tuna"

The array is fruits. What is fruits[0]?

APPLE

The array is fruits. What is fruits[0]?

How do I get the banana?

What is an example of personal info you shouldn't put online?

Full name, address, phone number, social security code, school and school schedule, etc.

Why did we create usernames?

To keep our identities safe!

What is your favorite Thanksgiving food?

Emma's is pumpkin rolls!

02

MATH

Math & Code

- Addition
- Subtraction
- Multiplication
- Division

- Variables
- Functions
- Equations
- Algorithms

What is PEMDAS in math?

P - parenthesis

E - exponents

M - multiplication

D - division

A - addition

S - subtraction

Quick Multiplication Review

For these exercises, we're multiplying by TWO (2).

5 X 2 is the same as saying 2 groups of 5.

10 blocks

Group Exercise: 2 + 10 X 2

22

What's the difference?

We, as humans, can read the equation and understand it in our brains in any order. Following => PEMDAS

Computers ALWAYS read LEFT => RIGHT, so the computer would return **24.**

2 + 10 X 2

12 X 2

24

How do we fix it?

Parenthesis!! Parenthesis tell a computer how to group math. Using the same example from before...

2 + (10 X 2)

2 + 20

22

03

MATH EXERCISES

You must work on these exercises to move on.

Some of you work really fast! Some of you have done this before.

We're working with Google Logos later, which are super fun and let us work with Scratch. You must show you're at least trying these exercises. Use your marker!

04

FUNCTIONS

Functions

A function is a chunk of code that you can use over and over again, instead of writing it out a bunch of times! They also allow coders to break down their problem or logic into smaller groups, that can be easier to understand.

A function accomplishes something. Each function will have **one single goal**. For example, if my function's goal is to find the distance between myself and Lindsay, that function should not also return my favorite flavor of ice cream. Those are two totally different things.

Functions

```
function myFunction() {
    console.log("Hello from function")
}
myFunction()
```

- Starts with “function”
- camelCasing
- Call the function after it’s defined, to trigger the logic

Functions

```
function solveMath(multiplier) {
    return 5 * multiplier
}
var answer = solveMath(3)
console.log(answer)
```

- Parameters
- Returning the value

05

SHERO

SHEro - Margaret Hamilton

https://www.youtube.com/watch?v=wD7GmF2mzdc

06

FUNCTION EXERCISE

You must work on these exercises to move on.

Some of you work really fast! Some of you have done this before.

We're working with Google Logos later, which are super fun and let us work with Scratch. You must show you're at least trying these exercises. We want to see you coding functions!

Exercise (replace the names)

JS

```
var coders = ["Emma", "Lindsay", "Sarah"]
function findCoder(coders){
  var coder = coders[Math.floor(Math.random()*coders.length)];
  console.log(coder)
}
findCoder(coders);
```

07

GOOGLE LOGOS

Type this URL

https://scratch.mit.edu/projects/177224273/#editor

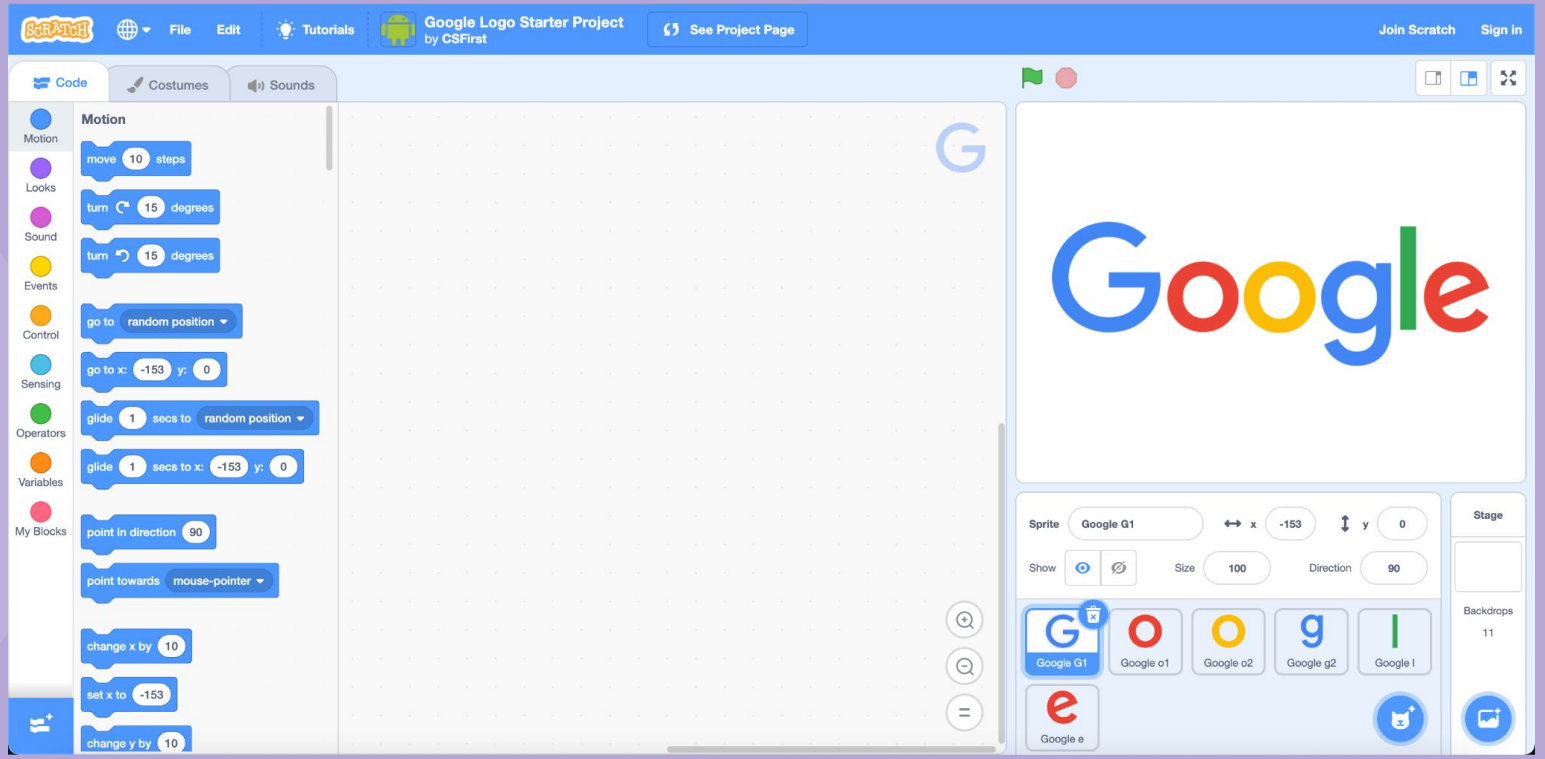
LOGIN

Username: **GirlC0dersRule** (Note: “0” is a ZERO)

Password: **LSF012208**

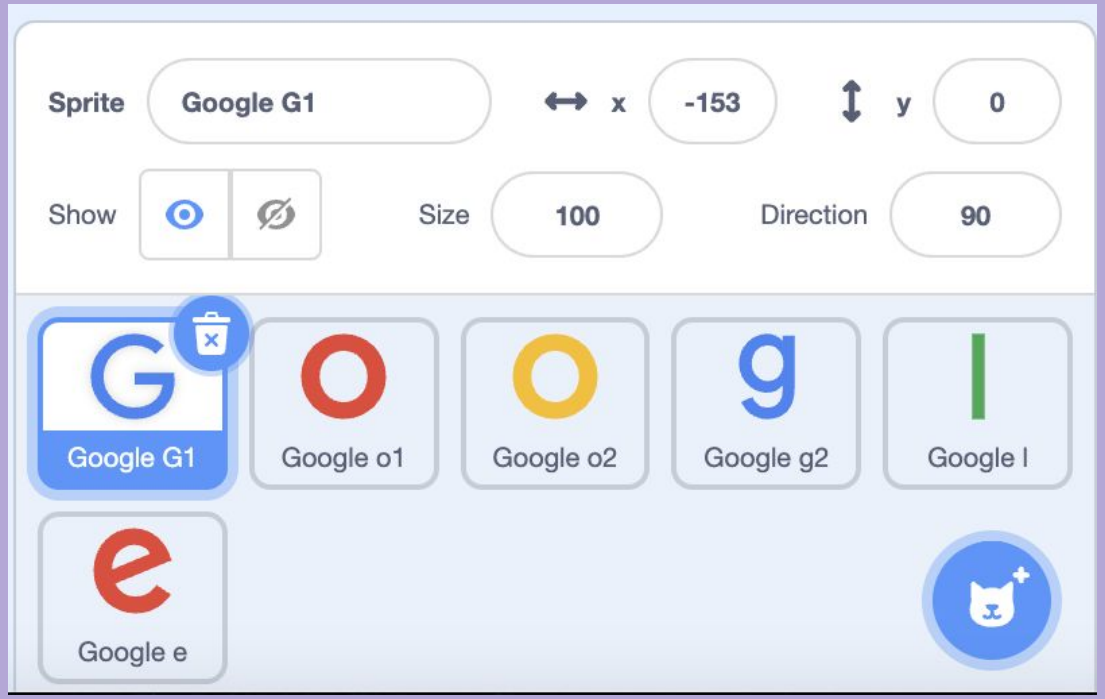
Google Logo Editor

The Scratch code is in the pane on the left.



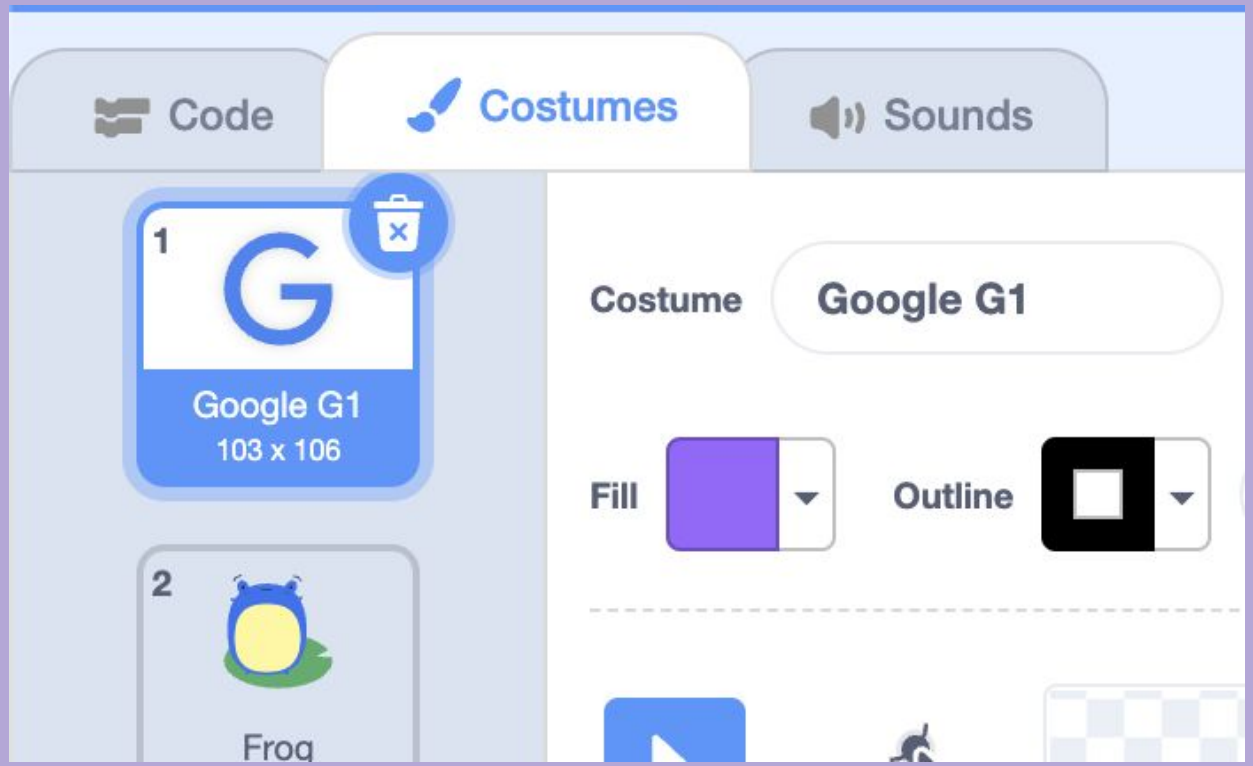
Google Logo Editor

In order to switch the letter you're working with, click on the sprite in the bottom right-hand window.



Google Logo Editor

To change a sprite's costume, click the "Costumes" tab.



Exercise #1: Change the Colors

Video Tutorial=>
https://csfirst.withgoogle.com/c/cs-first/en/create-your-own-google-logo/create-your-own-google-logo/extensions/change-color.html

Exercise #2: Make your Own CUSTOM Logo!

THANKS!

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