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Web Development

Day 6: JavaScript

Variables, Strings & Numbers

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Improv!

Welcome Back!

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Today's Schedule

Morning:

- Introduction to JavaScript
- JavaScript Syntax
- The Console
- Variables
- Data Types

Afternoon:

- Harley Davidson Field Trip

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Introduction to JavaScript

JavaScript is <u>the</u> programming language for the web. It's used by an estimated 95% of websites.

JavaScript is used to:

- Add interactivity to web pages
- Create web & mobile apps
- Build web servers and backend infrastructure

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JavaScript Syntax

JavaScript is made up of expressions and statements.

Expressions are bits of code that can be reduced to a value.
Example:

```
var x = 1;
```

Statements are code that will be executed to perform a function.
Example:

```
document.getElementById('test').innerHTML = 'Hello world';
```

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JavaScript Syntax

In JavaScript, you must **declare** a variable using the keyword **var** before you can do anything with it, like this:

```
var x = 1;

var y = 2;

x + y;
```

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JavaScript Syntax

In JavaScript, expressions and statements end with a semicolon (;). What are these expressions doing?

```
var x = 1;

var y = 2;

x + y;
```
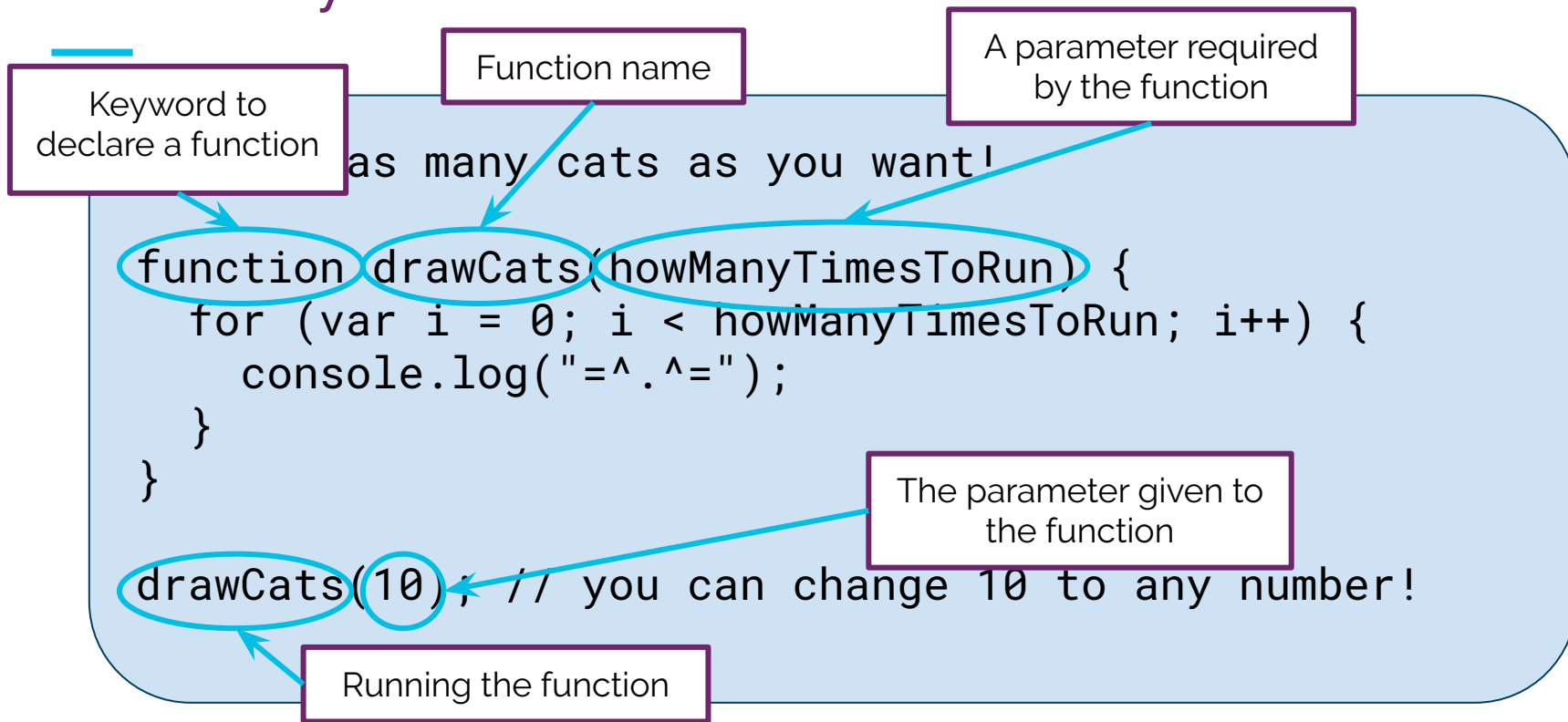
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The Browser Console

Chrome has a tool for looking at JavaScript!

Open a new tab then open the Developer Tools using **CNTL + SHIFT + J** (Windows) or **ALT + CMD + J** (Mac). This will open the DevTools Console.

A **console** is a text-only computer interface. In JS, the console is useful for debugging code.

Let's try some code on the console! Go to Day 6 on GitHub and copy the function at the top.

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Anatomy of a JS Function

Keyword to declare a function

Function name

A parameter required by the function

as many cats as you want!

```javascript
function drawCats(howManyTimesToRun) {
  for (var i = 0; i < howManyTimesToRun; i++) {
    console.log("=^.^=");
  }
}

drawCats(10); // you can change 10 to any number!
```

The parameter given to the function

Running the function

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The Browser Console

Let's try the previous code in the browser console. Type each line in the console and hit return after each.

```
var x = 1;

var y = 2;

x + y;
```

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Data Types

Variables can be any of the data types in JavaScript. There are many data types in JS but we will be focusing on three to start:

- Numbers
    - Whole numbers
    - Decimal point numbers
- Strings
    - Text wrapped in quotation marks
    - Quotation marks can be single <u>or</u> double, but <u>must</u> match
- Booleans
    - True or False

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What are strings?

A string is a collection of letters, numbers, or characters that are wrapped in quotation marks. A string can even be a single character!

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Commenting Code

Comments in code help explain what's going on. They are ignored by the computer. There are two kinds in JS: single line and multi-line.

```
// This is a single line comment.

/*
   This is a multi-line comment. It can go over
   multiple lines.
*/
```

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Practice with Variables

Work through the Day 6 "Variables" exercises on JS Bin.

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Booleans

Booleans are a logic-based datatype. They can be either true or false.

```
var pageLoaded = true;

var errorOnPage = false;
```

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Operating on Variables

Just like in Algebra, you can operate on variables! Try these on your console.

```
var firstName = 'Jane';

var lastName = 'Doe';

firstName + lastName;
```

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Operating on Variables

Just like in Algebra, you can operate on variables! Try these on your console.

```
var x = 10;

var y = x + 20;

(x + y) * 5;
```

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Practice with Variables

Work through the Day 6 "Operating on Variables" exercises on JS Bin.

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Reflection

Write in your journal about how you feel or what you learned today.

Prompts:

- HTML & CSS not considered programming languages. What do you think about this?
- Do you have any concerns about learning JavaScript? What are they?
- If you have used block coding before, what do you think about the differences using a coding language?

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