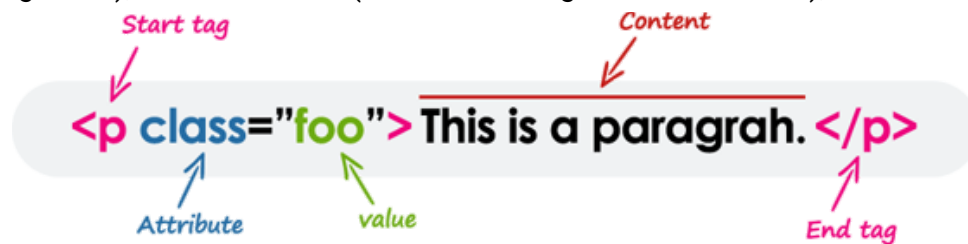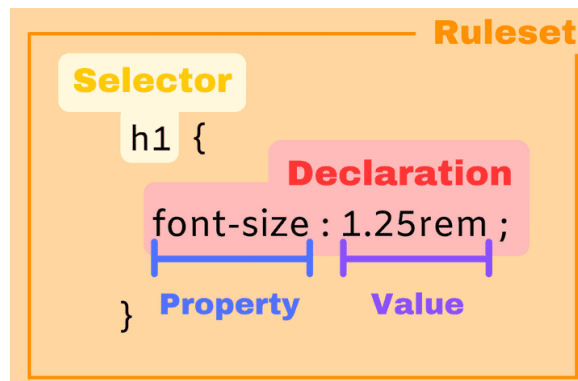# WEB DEVELOPMENT WORKSHEET
DAY 3 (Wednesday)

Part I: Review & Reminders

In days 1 and 2, we learned about HTML and CSS. Let's do a quick review.

HTML defines the structure and content of a web page or application. An HTML document consists of many HTML elements. Each HTML element consists of starting and ending tags (with the tag name), some attributes (most often things like ID and class), and content:

CSS defines the style and layout of the web page or application. A CSS document consists of many CSS rulesets. Each CSS ruleset consists of a selector (usually tag name, class name, or ID), and at least one rule, which is a property and a value:

Today, we're going to learn about JavaScript, and how to use the Console in your browser to write JavaScript code.

As you complete today's worksheet, remember the instructions from Day 1 on how to answer the questions:

- All questions are in **red**
- Copy the question into your journal
- Write the answer to the question underneath where you copied it

Part II: What is JavaScript?

First, watch this video: https://www.youtube.com/watch?v=OSWppEa2Zac

Then, answer these two questions in your journal:

Q: Which of these is/are a programming language: HTML, CSS, JavaScript?

Q: Where does JavaScript code run: On a server, on your computer, or in the internet?

Part III: JavaScript in the console

Now, you're going to read part of an article. The article is here: http://jsforcats.com/

You're only going to read the first few sections, entitled "The Basics", "Strings", "Values and Variables", and "Functions". **Stop when you get to the section called "The standard library."**

As you read, follow along with the exercises in the console of your browser. (The section called "The Basics" explains how to open the console and type in JavaScript code.) You'll be using the console to write and test code in the next section of this worksheet!

Finally, answer these questions in your journal:

Q: What is a String?

Q: What is a Variable?

Q: What is a Function?

Part IV: Time to code!

The questions in this section ask you to write some JavaScript code. You'll provide your answers to the questions in your journal, just like you have with all of the other questions in your worksheets. Here's how I want you to do that:

1. Read the question and understand what it's asking you to do.
2. Copy the question into your journal.
3. Use the console in your browser to write code that does what the question asks you to do. If at first you don't succeed, keep trying until you get code that works!
4. Copy your working code from the console into your journal.

As always, reach out to me if you have questions or are stuck.

Q: Write JavaScript code that adds three numbers (any numbers you want).

Q: Write JavaScript code that stores the result of multiplying two numbers in a variable (again, any two numbers you want).

Just like we can add numbers using the plus sign, we can also combine strings with the plus sign! This is called concatenation.

Addition	Concatenation

`2 + 2`
`> 4`
 	
`27 + -2`
`> 25`
	`"I am " + "Groot"`
	`> "I am Groot"`
	
	`"comp" + "uter"`
	`> "computer"`

Q: Write JavaScript code that concatenates the strings "Hello, " and "World"
* Note the space at the end of the first string! *

In the article, you learned about the replace function. JavaScript also has a function called toUpperCase, which converts a string to all capital letters. To use toUpperCase, you do not need to put anything inside the parentheses.

replace	toUpperCase
`"I am me".replace("me", "Groot")` `> "I am Groot"`	`"I am Groot".toUpperCase()` `> "I AM GROOT"`

Q: Write JavaScript code that turns "hello" into "HELLO"

And now, for our last trick, let's put string concatenation, toUpperCase, and variables all together. Remember that after saving information in a variable, you can refer to that information by the variable name. For example:

```
var x = 2 + 2
> 4
x + 6
> 10
```

Q: Write JavaScript code that stores the result of concatenating the strings "Java" and "Script" in a variable. Then, convert the variable to all capital letters using toUpperCase.
* This will require two lines of code. One line to create the variable, then the next line to make it uppercase. *

Part V: Recap

Today, you learned what JavaScript is and what it does. You also learned how to use the console to write JavaScript code. You learned about mathematical operations and strings in JavaScript, and how to use JavaScript functions. And you wrote your first few lines of JavaScript code!

Tomorrow, we'll use our JavaScript skills to select and modify HTML elements from a website. You'll be able to change things on a page with your programming skills!