

JAVASCRIPT: GETTING STARTED

Today we are learning about a brand new programming language! JavaScript is used to program the behavior of your website.

Examples of JavaScript on a website:

- Click a button, and something happens
- A popup, something shows and hides it
- Messaging - showing messages from your friend and receiving yours!

We're going to be practicing button clicks today.

Recap on Previous Sessions:

- What is HTML?
- What is CSS?
- What did the `` tag do? How do you tell it what to show?
- What does the `<iframe></iframe>` tag do?
- What is something you learned during our internet safety lesson?

JAVASCRIPT (called "JS" on CodePen) – tells your website how to behave, including interacting with your website visitors.

STEP 1

Find your CodePen! Remember that we named our CodePens with your **username**. If you forget what username you picked, it's on the back of your nametag.

STEP 2

Find the form that we made last session. It will start and end with `<form></form>` tags.

Remember that `<input />` with `type="text"` means that it's a text input. This is a form field that you can type in and use to collect data.

Add the form field below that has an **id**. We didn't do this last month - an **id** is used when you submit your form. This helps your JavaScript access your form field. An **id** is kind of like an identifying name - a lot like if I pointed at Lindsay/Anna and asked them to jump, but pointed at myself and asked myself to sit. The **id** (our name) helps the JavaScript know to make one of us jump and one of us sit, rather than both of us performing the same tasks.

```
<input type="text" id="MyColor" placeholder="My favorite color is..." />
```

STEP 3

Add an **onclick** action to your button. In JavaScript, we can write a function that DOES something. **onclick** tells the button what function to call when it's **clicked**.

Remember that your button was an `<input />` with `type="button"`.

```
<input type="button" value="SUBMIT" onclick="WelcomeMe()" />
```

Your form code should look like the section below:

```
<html>  
<body>  
  <form>  
    <input type="text" id="MyColor" placeholder="My favorite color is..." />  
    <input type="button" value="SUBMIT" onclick="WelcomeMe()" />  
  </form>  
</body>  
</html>
```

Hints & Reminders:

- Adding the ID attribute allows us to access the form element using JavaScript.
- Adding the onclick attribute tells what JavaScript function to execute when someone clicks the SUBMIT button. You can change the name of this function if you want.

STEP 4

Now we're ready to write the WelcomeMe() function to be called when the SUBMIT button is clicked. **You're writing your first JavaScript!** In the **JS SECTION** on your CodePen website, add this then click the SUBMIT button to test your work:



JS SECTION: ADD A FUNCTION CALLED WelcomeMe()

```
function WelcomeMe() {  
  var Color = document.getElementById('MyColor').value;  
  document.body.style.backgroundColor = Color;  
}
```

What is the code doing?

document.getElementById('MyFavCandy') is finding your text input that has the id 'MyFavCandy'.

document.getElementById('MyFavCandy').value gets the value from that input. Now, the function knows what is typed into the form field. It's then taking that value, and using it to set the background color for your website.

In your form, **fill the color text field with your favorite color word or hex code.**

Possible CSS color names: https://www.w3schools.com/cssref/css_colors.asp

Possible HEX codes: www.htmlcolorcodes.com

If the background color changed to your favorite color, YOU DID IT!

SHEro of the Month: Margaret Hamilton



Rebel Girls Video: <https://www.youtube.com/watch?v=wD7GmF2mzdc>

** Field Trip to the Margaret Hamilton Plaque **

JAVASCRIPT: NEXT STEP

Add the two `<input />` lines shown in purple. Notice that the **id** field is different for every one of our form fields.

STEP 1

```
<html>
<body>
  <form>
    <input type="text" id="MyColor" placeholder="My favorite color is..." />
    <input type="text" id="MyName" placeholder="My name is..." />
    <input type="text" id="MyAnimal" placeholder="The best animal is..." />
    <input type="button" value="SUBMIT" onclick="WelcomeMe()" />
  </form>
  <p id="welcome">I am waiting for you, new friend!</p>
</body>
</html>
```

Hints & Notes:

- Now we're asking for some new information - a name and a favorite animal, in addition to favorite color.
- The "welcome" paragraph (`<p>`) tag is where we will change our HTML based on the user's input.

STEP 2

Now let's add to our `WelcomeMe()` function to be called when the SUBMIT button is clicked. Add this then click the SUBMIT button to test your work:

ADD TO YOUR `WelcomeMe()` FUNCTION -- THREE NEW LINES (in purple)

```
function WelcomeMe() {
  var Color = document.getElementById('MyColor').value;
  document.body.style.backgroundColor = Color;
  var Name = document.getElementById('MyName').value;
  var Animal = document.getElementById('MyAnimal').value;
  document.getElementById('welcome').innerHTML = "Welcome, " + Name + "! I
like " +
  Animal + " too!";
}
```

The new code is just storing the values for name and favorite animal in variables, then building a string of text to display in the "welcome" paragraph tag.

If the background color changed to your favorite color *and* the text "I am waiting for you, new friend!" changed to "Welcome, your name here! I like your animal here too!" then **YOU DID IT! AWESOME JOB!**

JAVASCRIPT – EXTRA CHALLENGES

Challenge #1

Add more form fields to learn more about your website visitors! Examples:

- Their favorite class at school
- Their favorite vacation place
- Their favorite activities
- Their favorite movie or TV show

Can you change the text in the welcome paragraph area to use these new answers? You could share your favorite movie or class with them, too.

Challenge #2

Add form fields that ask for other things you could use to change the appearance of your website, like setting all your text size to your website user's lucky number. Here are some tips:

HTML: ADD TO YOUR FORM CODE -- ONE NEW LINE INSIDE <form> TAGS

<form>

<input type="text" id="MyNumber" placeholder="My lucky number is..." />

</form>

JS SECTION: ADD INSIDE YOUR WelcomeMe() FUNCTION

```
function WelcomeMe() {  
    var Number = document.getElementById('MyNumber').value;  
    document.getElementById('welcome').style.fontSize = Number + "px";  
}
```

Challenge #3

Use CSS to style your "welcome" paragraph tag. Use your favorite colors to start (remember: find every color you can think of on www.htmlcolorcodes.com).

CSS SECTION: You can style a specific p by using its ID ("welcome")

```
p#welcome {  
    color: navy;  
    border: 2px dotted navy;  
}
```

Where is Computer Science?

There are so many different things that you can do with computer science. Nearly every industry involves Computer Science to some extent.

What is something you'd like to be when you grow up? How is Computer Science involved?

1. Artificial Intelligence - teaching a computer how to “think” more like a person
 - a. Searches & Ads - showing you what you might like the most
 - b. Robots
 - c. Texting - predicting what you want to say
2. Computer Security
 - a. Preventing and protecting against hackers
3. Government and Social Services
 - a. Websites - providing information to the public
 - b. Automated voicemails where you click a number to talk to a certain person
 - c. Storing information so we use less paper
4. Health Care
 - a. Read important data to help make decisions
 - b. Programs to help do the small repetitive tasks so that hospital workers have more time to work with patients
 - c. Programs to track vital signs, important scans like an MRI
5. Agriculture
 - a. Databases and analysis
 - b. Weather forecasting to help with growing crops
6. Financial Service Industry - Banking
 - a. Mobile applications - almost everything can be handled on your phone now!
 - b. Websites, submitting checks from your phone
 - c. Banking transfers, ATMs
7. Enterprise - websites!!!
8. Education
 - a. Online educational games, cyber schooling
 - b. Websites, online portals to help you submit homework, show your grades, etc.
9. Video games