

## Unplugged: Introduction to CSS (to be completed following Introduction to HTML)

In the Introduction to HTML activity, students used HTML to markup or identify the different pieces of content, such as headings, paragraphs, and lists in their blog entries. It also helped to describe the layout and hierarchy of their content. For example, every paragraph was marked up with the `<p>` tag, and all paragraphs in the blog post were contained inside the `<body>` tag.

While HTML allows us to specify the content of a web page, it doesn't give us many options to change how the content is displayed in our browsers. CSS (Cascading Style Sheets) is another language of the web that works together with HTML. It allows us to create a set of rules to describe what the content should look like.

In this activity, students are introduced to CSS. They develop an understanding of the relationship between HTML markup and CSS declarations, and how to use CSS to change the appearance of basic HTML content.

### Activity Overview

Estimated Time: 1h

#### Prerequisites:

- Students must have completed Activity : Introduction to HTML.

#### Materials for each student:

- Paper and Pencil
- CSS Property-Value Pair Student Sheet
- HTML Blog Post with HTML Markup from Activity: Introduction to HTML
- Computer or Laptop (Optional)
- Internet Access (Optional)
- Self-Assessment Student Sheet (Optional)

#### Preparation:

- Print out 1 [CSS Property-Value Pair Student Sheet](#) per student.
- If students will be using computers or laptops, ensure they are available for the activity.
- Print out 1 [Self-Assessment Student Sheet](#) per student. (Optional)

### Warm-up: Understanding property-value pairs (10 minutes)

Explain to students that while HTML allows us to specify the content and structure of a web page, CSS allows us to customize its appearance. Every web browser has a built-in set of definitions, or a default appearance, for all HTML elements. For example, all headings and paragraphs have a default font size. The colour of all headings and paragraphs is also initially set to black.

Font size and colour are just two examples of properties in CSS, but there are many more. Using CSS declarations, we can change the value of specific properties, which gives us, as content creators, the opportunity to personalize the appearance of our content. For instance, using CSS, we can change the colour of all paragraphs to blue instead.

Ensure that each student has a copy of the CSS Property-Value Pair Student Sheet. Review the sheet as a class. Facilitate a class discussion or ask students to discuss in small groups using the following prompts:

- What is unique about the way these rules are written?
- How would you write a CSS declaration that makes the text of <h1> elements green?

### Activity: Writing CSS (40 minutes)

Make sure that each student has their blog post complete with HTML markup from the previous activity, and ask them to think about what they'd like to change about its appearance. Now that they know some of the main CSS properties that web designers use to change their web pages, they can use these properties to customize the appearance of their blog posts.

Before students begin, ask students to add the <style> tag inside the <head> element of their blog posts. The <head> should now look like the following:

```
<head>
  <title>My Post</title>
  <style>

  </style>
</head>
```

Students can write their CSS declarations within the `<style>...</style>` tag. Optionally, students who typed their blog posts on computers or laptops using a text editor may continue to type their CSS declarations using the text editor.

### Reflections: Testing CSS (10 minutes)

Similar to the last activity, have each student review their own blog post or exchange their blog post with another student. Facilitate a review session using the following prompts:

- Is there a `<style>` tag inside the `<head>` tag?
- Are all the CSS declarations contained inside the `<style>` tag?
- Are there CSS declarations for `<h1>`, `<p>`, and `<ul>` or `<li>` elements?
- For each CSS declaration, are all the rules contained within curly braces?
- Is there a semicolon at the end of every rule?

Optionally, if students typed their blog posts in a text editor and saved them as HTML files, that is, with the `.html` extension, they can test their HTML files in a web browser. If the browser displays the content of the blog posts according to the specified CSS declarations, then the CSS was added correctly.

After the initial review, ask students to make any necessary changes to their blog posts, and to continue the review process until no more changes are needed. Students saving their blog posts as HTML files will need to reload their pages in the browser to see any new changes. Remind students to pay careful attention to syntax; semicolons matter!

## Assessment

Criteria	Approaching	Meeting	Exceeding
Student participated in the warm-up by making observations of how CSS is written and/or sharing one or more ideas on how to write the CSS declaration.			
Student added at least 3 CSS declarations to his or her blog post, for example, one declaration for each of the following elements: <code>&lt;h1&gt;</code> , <code>&lt;p&gt;</code> , and <code>&lt;ul&gt;</code> or <code>&lt;li&gt;</code> .			
Student included at least 5 different CSS properties from the CSS Property-Value Pair Student Sheet, such: <code>border</code> , <code>color</code> , <code>font-size</code> , <code>padding</code> , and <code>text-align</code> .			
Student reviewed his or her own blog post, or reviewed another student's blog post, and made the necessary changes or provided constructive feedback.			

## Extensions

### Exploring more properties

Given the full list of properties at <https://developer.mozilla.org/en-US/docs/Web/CSS/Reference> and the accompanying student sheet, students who are comfortable with changing properties can customize their content further. This is an excellent opportunity to engage students as mentors for other students, sharing knowledge and insight into how the CSS properties work.

## CSS Property-Value Pair Student Sheet

```
div {  
  height: 100px;  
  width: 100px;  
  color: blue;  
}
```

This is a CSS declaration. It is a set of rules, or property-value pairs, that modify the appearance of a particular kind of element on a page, in this case, the `<div>` element. When writing a declaration, you must do the following:

- Use the curly braces, {}, to group rules together.
- For each rule, place the property to the left of the colon.
- For each rule, place the value to the right of the colon.
- End each rule with a semicolon to tell the browser that you're done setting the rule.

The declaration above has three rules to describe how a `<div>` element should appear.

1. The height of the element should be 100 pixels.
2. The width of the element should be 100 pixels.
3. The color of the text inside the element should be blue.

These rules change the default behaviour of the element. The browser has built-in rules that dictate how every possible element appears. Because every aspect of the appearance has already been defined, any changes we make override the built-in rules.

This is a huge benefit because it means that we don't have to define every possible aspect every time we want to add a new element to our page. Here's another example:

```
p {  
  margin: 5px;  
  border: 2px solid black;  
  text-align: center;  
  font-size: 14px;  
}
```

This declaration modifies four properties of all paragraphs on a page. There are over a hundred possible properties that can be changed, giving us infinite control over how elements appear. Here are the ten most commonly used properties for you to try.

<b>background-color</b>	<p>Changes the background color of the element. You can specify colors the same way as in <code>color</code> below.</p> <p>Example: <code>background-color: black;</code></p>
<b>border</b>	<p>Creates a border around the element. This rule has three properties:</p> <ol style="list-style-type: none"><li>1. Width: Express this as a number of pixels, such as <code>1px</code> or <code>4px</code>.</li><li>2. Style: <code>solid</code> is the most common border, but other possibilities include: <code>none</code>, <code>dotted</code>, <code>dashed</code>, <code>double</code>, <code>groove</code>, <code>ridge</code>, <code>inset</code>, and <code>outset</code>.</li><li>3. Color: This follows the same rules as <code>color</code> below.</li></ol> <p>Example: <code>border: 5px dashed red;</code></p>
<b>color</b>	<p>Changes the color of the text inside the element. There are multiple ways to designate the color of an element. Many common words, such as <code>blue</code>, <code>white</code>, and <code>orange</code> will work. Here's a complete list of all available named colors: <a href="http://www.colors.commutercreative.com/grid/">http://www.colors.commutercreative.com/grid/</a></p> <p>Example: <code>color: orange;</code></p>
<b>font-size</b>	<p>Sets the size of the text inside the element using pixels.</p> <p>Example: <code>font-size: 14px;</code></p>
<b>height</b>	<p>Sets the height of the element. This can be expressed as a percentage or in pixels. If you use a percentage, you're telling the browser that you want this element to take up some percentage of the height of the element it's in. Tip: Even if it's the first element on the page, it's still inside the <code>&lt;body&gt;</code> element!</p> <p>Example: <code>height: 500px;</code></p>
<b>margin</b>	<p>Sets the space between the element and all surrounding elements, like the margin on a piece of notebook paper.</p> <p>Example: <code>margin: 20px;</code></p>



<code>padding</code>	<p>Sets the space between the content and its border. It adds extra whitespace inside of the element.</p> <p>Example: <code>padding: 15px;</code></p>
<code>text-align</code>	<p>Aligns the text inside of the element. Possible values include left, center, and right.</p> <p>Example: <code>text-align: center;</code></p>
<code>text-decoration</code>	<p>Sets all of the text in an element to be <code>underline</code>, <code>overline</code>, or <code>line-through</code>.</p> <p>Example: <code>text-decoration: underline;</code></p>
<code>width</code>	<p>Same as height, just horizontal instead of vertical.</p> <p>Example: <code>width: 100%;</code></p>

For a full list of CSS properties, visit the following website:  
<https://developer.mozilla.org/en-US/docs/Web/CSS/Reference>.

## Self-Assessment Student Sheet

Give an example or provide evidence of how you demonstrated or accomplished each of the following statements during this activity. Examples and evidence can include sketches, written descriptions, and references to photos or videos.

Statement	Example or Evidence
At the beginning of the activity, I shared one or more observations on how CSS is written and/or supported other students by listening to their ideas.	
I reviewed and analyzed my own CSS declarations or another student's CSS declarations, and made the necessary changes or offered constructive feedback.	