**Lesson 13** Introduction to CSS

**How can we use CSS to style a web page?**

| **Overview** | |
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| In this lesson, students will learn the basics of CSS in order to style web pages. They will edit the **style.css** file to change the color, typography and layout of the HTML content. | |
| **Lesson Objectives** | |
| Students will be able to   * Use basic CSS syntax to style a web page * Distinguish between selectors, properties, and their values * Describe the relationship between HTML, CSS, and JavaScript | |
| **Suggested Duration** | |
| One period (45 minutes) | |
| **Blueprint Foundations Student Outcomes (**https://blueprint.cs4all.nyc/outcomes/) | |
| Networks Analyze | **Explain** what markup languages are and the role they play in creating websites. |
| Networks Prototype | **Explain** how I used at least three different markup tags to build a website. |
| Networks Communicate | **Present** my thoughts, ideas, or interests through a website built using markup. |
| **Vocabulary** | |
| * **CSS -** CSS stands for Cascading Style Sheets. It is used to change the presentation, or style, of a web page. * **Selector -** the element or group of elements that the style should be applied to * **Property** - visual component to be styled * **Value** - the value applied to the property | |
| **Planning Notes** | |
| * It isn’t possible to do a comprehensive overview of all the different types of styles that can be used with CSS, so it’s better to quickly teach the basics and then have students research more CSS rules on their own based on their interests. * Note: Students may want to style one paragraph differently than another paragraph, or one image differently than another image. Explain that they will use more advanced CSS to style individual elements later in the year. | |
| **Resources** | |
| * [Introduction to CSS](https://developer.mozilla.org/en-US/docs/Learn/CSS/Introduction_to_CSS) * Video Tutorial: [The Basics of CSS](https://www.youtube.com/watch?v=zGL8q8iQSQw) * Adding [Google Fonts](https://fonts.google.com) [Tutorial](https://www.freecodecamp.org/news/how-to-use-google-fonts-in-your-next-web-design-project-e1ad48f1adfa/) | |
| **Assessments** | |
| * Assess the **Student Activity**. Check for students’ ability to:   + Use proper CSS syntax including selectors, and property-value pairs   + Change the background color, text color, and margins using CSS   + Research and incorporate new CSS rules to further change the style of their presentation pages * Assess student’s responses in the **Wrap Up**. Check for the ability to:   + Explain the differences between HTML, CSS, and Javascript | |

| **Do Now:** |
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| * Show students [this web page](https://editor.p5js.org/mparker/present/94VDTGXK_) and have them follow the prompt. |
| **Discussion: CSS** |
| * Have students share their responses from the Do Now and list out their ideas. * Tell students that the way they can change the style and presentation of their web pages is by using a new language called CSS. CSS adds visual styles, including color, typography and layout, to the HTML content. * HTML elements have default styles, such as black text color and margins for the basic text content elements like <p>. CSS is used to replace or add to the default styles. |
| **Teacher Demo:** |
| * Open up a new sketch and click on the arrow to show the list of project files. Show that CSS styles are found in the **style.css** file.      * Write a new rule in the stylesheet (as with the image below) to show the breakdown of CSS syntax: A selector, a property, and a value. Properties and values are written inside curly braces, and end with a colon and semicolon, respectively.      * Ask students if they recognize what the selectors in this CSS file refer to. If students remember HTML tags from the last lesson, they may infer that these selectors refer to the HTML elements html, body, and paragraph. A **selector** is the element or group of elements that the style should be applied to. * Ask students to infer what **style** will be applied to the paragraph based on the property-value pair. Then show them that any paragraphs coded in HTML will be blue.   + Add another property value pair to the line of code above like font-size: 36px; and have students predict what will happen to the paragraph. * Point out that p5 includes two **rules** by default, which affect how the canvas is displayed on the screen.   Code Along   * Open up a p5 sketch that uses basic html elements (at minimum, an <h1> tag, a <p> tag and an <a> tag) or use [this example](https://editor.p5js.org/mparker/sketches/XkSdouGHY) that picks up from Lesson 12. * First change the background color of the project to green (or another color) by using body as a selector.      * Now that the background is no longer white, black text is harder to read.   + Ask students to infer what property they could use to make text the color whitebased on the rule you wrote to make the paragraph text blue.      * Add the property-value pair color: white; and point out that you can write any number of rules you like for a given selector. * Run the sketch. All text except links should now be white, **unless** you have kept the rule from above: p { color: blue;} which would stay blue.   + Open up the html file. Point out the body tag, and explain that any elements nested inside the body tag **inherit** its styles, unless a new rule has been declared for those elements. * Students may have noticed that the link is not white, either. Explain that the <a> tag has a default style, which overwrites the <body> color style. Then write a new rule to change its color:      * Now write a new rule to change the margin of <h1> and <p>. Set it to 0 to remove the margin and run the sketch, then set it to a different value so students can see the difference.      * Explain that the margin property affects all four sides of the element, but that margins can also be added to specific sides, like the properties margin-bottom, margin-top, margin-left, and margin-right. |
| **Student Activity: Style Presentation Pages** |
| * Have students duplicate their HTML emoji sketches and rename them to something like “Final Project Name CSS” * Students should **edit the style.css file** by adding the following properties from the demonstration:   + color   + background-color   + margin * Students can watch [this video](https://www.youtube.com/watch?v=3BanVQvCN6U) and refer to [these instructions](https://www.freecodecamp.org/news/how-to-use-google-fonts-in-your-next-web-design-project-e1ad48f1adfa/) to use [Google Fonts](https://fonts.google.com/) on their web pages. * Finally, students should research new properties to add to selectors of their choosing. Suggest the following for students who need more guidance:   + font-family   + font-size   + border (border-color, border-style, border-width)   + width, height   + text-align   Reference pages:  [Typography](https://developer.mozilla.org/en-US/docs/Web/CSS/font)  [Border](https://developer.mozilla.org/en-US/docs/Web/CSS/border)  [Margin](https://developer.mozilla.org/en-US/docs/Web/CSS/margin)  [Padding](https://developer.mozilla.org/en-US/docs/Web/CSS/padding)  [Full Reference](https://developer.mozilla.org/en-US/docs/Web/CSS/Reference) |
| **Wrap Up** |
| * **[Design Journal]** Students should answer the following prompts:   + What is the relationship between HTML, CSS and JavaScript?   + What were some css properties that you used today? Were there any styles you wanted to add but couldn't find? * Have students share their responses with the class. |
| **Extensions** |
| N/A |