



The Iron Yard Kids Academy Curriculum

Intro:

This is a 6-week curriculum for teaching HTML and CSS to kids with no previous coding experience. It assumes a basic familiarity with computers and reading skills.

Resources:

We recommend one computer per child. These can either be laptops that are brought from home or a computer lab or laptops supplied by the hosting organization. If laptops are brought from home, make sure that each laptop:

- Can connect to wireless internet
- Has a power cord that is brought to class each day
- Has Chrome installed (it's easier to have all student environments as similar as possible for ease of troubleshooting during class).

If you are using a computer lab and are able to install software on the computers prior to class beginning, it may be beneficial to install a simple, free editor like Sublime for students to use. If not, students can use TextEdit or CodePen.io for their work. CodePen.io is a great option since it allows students to see the changes they make instantly and nothing needs to be installed, but if a student doesn't have internet access at home, they will need to be able to save their work for offline access on a thumb drive.

Instructors:

We recommend that you have at least two instructors each week. You can rotate instructors throughout the program, but if you choose to do this, make sure instructors sync between classes to get a sense of where the class left off the previous week.

Instructors do not need to be experienced professional developers. Some familiarity with basic HTML and CSS is all that is necessary. It is important for instructors to go through the entire curriculum themselves before the class begins so they understand what the goal of the class is. Even if they are only teaching one week, it's best to understand the entire curriculum so the instructor has context for what they are teaching.

For children under 12, we recommend that you require a parent to attend class with the student if the class is being held outside of a traditional school program.

If this isn't possible, you may need more teaching assistants on hand to answer questions and help with classroom management.

Curriculum

HTML/CSS

Here is a sample 6-week, curriculum for HTML/CSS.

Resources

- <http://www.atozcss.com/>
- <http://www.htmldog.com/reference/htmltags>
- <http://www.htmldog.com/reference/cssproperties/>

The students will be using Codecademy for homework, working through the web track on HTML and CSS. Feel free to refer to those exercises as well! It would be fine to choose a specific exercise for them to do in class as it relates to the topic for that week.

Week 1

Introduce yourself! Tell them your background, a little bit about what you're doing at The Iron Yard, and something you're excited to build on the internet. (The idea there is to help them start seeing the possibilities of what you can do with programming.)

- Install Google Chrome
- Install Sublime trial/ Atom?

(These two steps will probably take longer than you expect...)

Show them the Chrome Developer tools and use "inspect element" to look at a couple of web pages. Give a very basic intro to the HTML tags: high-level, "this is an HTML tag" kind of thing. (Show a couple of example websites)

- Homework (Week 1):
 - o Find 5 websites you like. What do you like about it? The colors? The layout? The font? Use the developer tools in Chrome (right click + "inspect element") to look at the HTML and figure out which tags are making it look that way.
 - o Create an account on codecademy.com and start working through the HTML & CSS course (listed under the "Languages" section).
 - o Choose 2 photos that you would like to use on your personal webpage and make sure you have digital access to them for the next class. (dropbox, google drive, usb)

Week 2

- HTML structure: `<html>`, `<head>`, `<title>`, `<body>`
- What goes in each of these sections?
- Why is it important?

- Create an HTML file in Codepen. List out some content on the white board and the relevant tags and have them match the style with the tags in their pen. “Hi, my name is Paul. I am 25 years old. I like these websites: This goes to google.com.”
- Tags review (they should have seen a lot of them on Codecademy): `

`, `

` - ``, ``, ` `, ` `, ``, `*`*
- Lists
- Linking to external websites
- Homework (Week 2):
 - o Continue working on the HTML course on codecademy.com. Move on to HTML Basics II to learn about lists and font styling. This will help make your page look much more interesting!
 - o Make a new HTML file and edit it using Sublime Text. This is your “about me” webpage! Create a header, title, and body for your page introducing yourself. Where do you go to school? What do you like to do in your free time? Talk about your favorite books or movies.
 - o Try out some of the tags you liked from the 5 websites you found last week or some of the tags you learned from Codecademy! Use at least one list (ordered or unordered) and two different font styles on your site. Practice viewing your changes in your browser (Google Chrome).

Week 3

- Front end vs. Back end; user interaction
- Take questions on HTML from the homework. Walk around and look at what they have so far.
- Workshop day! Let them catch up on the homework and continue refining the site they started between classes.
- Homework (Week 3):
 - o Finish up the HTML exercises on codecademy.com by working through sections 1-15 of HTML Basics III.
 - o Add at least one image to your site.

Week 4

Introduce CSS

- What does HTML do?
- What does CSS do? (green and black soccer ball analogy)
- How do you link the two together (literally what you type at the top of the file)?
- Check out <http://www.csszengarden.com/> to highlight how big of an impact CSS can have.
- Talk about CSS colors and font basics: color, background-color, font-size, font-weight, font-style, font-family, line-height
- What is front end development? See slide deck provided.

- Homework (Week 4):
 - Start working through CSS: An Overview on codecademy.com. Challenge yourself to finish all 26 exercises!
 - Create a CSS file in Sublime Text and link your previously created HTML file to it. Use the CSS to style at least one type of HTML element that you use on your page (set what an `<h1>` should look like, for example).

Week 5

- Work on CSS: Element Positioning on Codecademy during class. Talk about layout and the grid system (`<divs>`).
- Introduce the Box Model.
- For you to read:
 - <http://css-tricks.com/the-css-box-model/>
 - <http://learn.shayhowe.com/html-css/opening-the-box-model/>
- Video to show in class:
 - <http://www.atzcss.com/the-css-box-model/>
- Take questions; for homework they'll be continuing the work on their websites, so make sure they feel good about things they can add to it or refine.
- Homework (Week 5):
 - Keep working on your website! Next week you will get to display it to the rest of the class. Think about positioning different parts of it using CSS. What elements can you style with CSS instead of with HTML?

Week 6

- Show and Tell! Allow each of the students to show off what they've been working on.
- Switch gears a little! Introduce the concept of a database. Compare to how they've been typing out everything that shows up on their webpage and talk about how an API can provide information to be displayed. What is backend development? Refer to slide deck provided.
- Take questions! The goal in introducing the concept of backend is to help open their eyes to the possibilities. Obviously this will not equip them to go set up a Rails app or anything, but just help them to understand that there are different kinds of web development you can do.
- Hand out certificates!