

# National Coding Symposium

## HTML Activity Lesson Plan

Audience:	Designed as an introduction to coding concepts  Prerequisites: <ul style="list-style-type: none"><li>- Basic typing skills</li><li>- Basic file management</li></ul>
Duration:	About 40 minutes per lesson

### Expanded Core areas & components targeted in this lesson:

ECC Area	ECC Component
Compensatory Access	Typing, editing, file management and organization
Assistive Technology	How screenreaders use HTML to navigate web pages

### Learning targets (what do I want the students to learn?)

Objective #1	How to create, save, and open an HTML document
Objective #2	What are headings and how are they coded in HTML
Objective #3	What is alt text and how is it coded in HTML

### Vocabulary terms for this lesson:

*HTML: Hypertext Markup Language is one coding language used to communicate with web browsers. It tells a web browser (ie, firefox, safari) how a website should look, and what should be displayed.*

*Element: HTML Elements are pieces of a website, like body, links, images, headings, and are marked in the HTML code by a start tag and sometimes closed with an end tag.*

*Tag: HTML Tags are a special set of characters that indicates the start and end of an HTML element and that element's type.*

*Syntax: A specific arrangement of characters, words, or phrases.*

*Headings: Headings are the different sized section titles throughout a web page. Headings add structure to your web page by breaking it up so its easier for a user to read.*

*Links: Links are HTML objects that allow you to jump to a new location from your web page.*

*Alt Text: Alt text, or alternative text, is a text which describes an image embedded in code.*

## **Materials needed (What I need to teach the lesson?)**

*Windows or Mac computer*

- *Windows with Notepad*
- *Mac with TextEdit*

*Note: Not compatible with Chromebooks as files need to be saved locally on a hard drive.*

## **ECC High School Readiness Checklist sections referenced for this lesson:**

Grade band:	Grades 5 - 8
ECC area: Assistive Technology	I can type at a minimum of 45 words per minute with 80% accuracy (five words per grade-- 45 by 9th, 50 by 10th, etc.). I can create, edit, save, and share a variety of formats such as Microsoft Word, Google Docs, Google Sheets, Excel, PDF, etc. I can use NVDA, JAWS, or

	<p>Chromevox to complete word processing projects.</p> <p>I can use commonly used keyboard commands for reading, editing, and navigation.</p>
Level: (Required, Novice, Accomplished or Proficient)	Required Skills

# Lesson 1: Building an HTML document

## Introduction to HTML

### 1. What is HTML (10:27 - 10:30)

- a. HTML stands for Hypertext Markup Language
- b. It is one coding language used to communicate with web browsers. It tells a web browser (ie, firefox, safari) how a website should look, and what should be displayed.
- c. An HTML file ends with .htm or a .html extension

### 2. Elements

- a. Imagine you wanted to explain to a person over the phone what kinds of things you could find on a webpage like YouTube. What would you say?
  - i. Some **elements** you might have identified include:
    1. Images
    2. edit /search box
    3. Links
    4. Headings
    5. Titles
    6. Videos
- b. If you use a screenreader, you might already know a lot about HTML! Screenreaders read the code of the website to help you navigate the elements. When you press a hot key, it will take you to that element on the page. For example, if you type e, the screenreader will cycle through the web pages code to find any edit box elements tagged in the code.
- c. Today we are going to focus on the following elements:
  - i. Doc type
  - ii. Doc language
  - iii. Body

# Exercise 1: Create an HTML document

## 1. Create it

- a. Create a new document in Notepad or \_\_\_\_\_
- b. Identify the document as an HTML document by typing `<!doctype html>`
- c. Then, on a new line, identify which language this document will be by typing `<html lang="en">`
- d. Now, on a new line, we are going to carve out a space to type everything we want to be on our website. That will be the body of our web page. So, we can start the body of the website by typing `<body>`
- e. Then, on another new line, we can type any sentence you would like to be on your webpage. For example, you might write what your favorite song is.
- f. Make a new line and close the body of the web page by typing `</body>`
- g. Your text should look like this:

```
<!doctype html>
```

```
<html lang="en">
```

```
<body>
```

```
My favorite song is Never Gonna Give You Up by Rick Astley
```

```
</body>
```

## 2. Save it

- a. Now, save your document. Title it something that you will remember like "My first HTML page".
- b. Identify it as an html document in one of two ways
  - i. At the end of the document name, make sure to type `.html` so the computer knows that this is an html document. Your document title should look like "my first HTML page.html"
  - ii. Change the file type in the drop down menu to html
- c. Now, save it somewhere you can find it easily for the next exercise!

## 3. Open it

- a. Find your document and open it - you should see that it opens in a web browser!  
Congratulations! This is your first HTML document. We will make it more personalized in the next exercises.

# Discussion

1. What text is appearing in both the code and the web page?  
Answer: (website content - the text and images on a website)
2. What text is hidden in web view?  
Answer: (web structure- how the content of a website is organized)

# Lesson 2: Headings

## 1. Review

HTML is a markup language that communicates with our web browsers to display content on a web page. It is the way our web browsers communicate - the language they use. It is the web structure that communicates to the web browser what the content of the page should be.

HTML documents are identified by a .htm or .html file type

HTML documents are opened in a web browser

## 2. Elements

HTML Elements are pieces of a website, marked by a start tag and sometimes closed with an end tag

Can you think of any elements of a web page?

Some answers might include:

1. Images
2. edit /search box
3. Links
4. Headings
5. Titles
6. Videos

## 3. Tags

HTML Tags are a special set of characters that indicates the start and end of an HTML element and that element's type.

Last exercise we introduced 3 elements: doctype, language, and body

`<!doctype html>` signals to the browser that this is an html document

`<html lang="en">` signals to the browser that the html language is english.

`<body></body>` we put any of the content of the web page in between the two tags

`<body>` is an opening tag and `</body>` is a closing tag. This tells the web browser that anything between the opening `<body>` tag and the closing `</body>` tag will be in between.

## 4. Syntax

You'll notice that there is a particular syntax, or way of writing things.

Most tags will have this syntax `<tag>content</tag>`

## 5. New Code

Today we are going to use the following elements. These are the building blocks of web pages:

Heading

Paragraphs

### A. Heading

Headings are the different sized section titles throughout a web page. Headings add structure to your web page by breaking it up so its easier for a user to read. The most common type of heading is `<h>`.

We can create a heading by placing the enclosed text within a starting `<h>` and closing `</h>` tag.

The code for a heading will look like

```
<h>My Heading Text</h>.
```

### B. Paragraph

Paragrah tags are placed around text to indicate that it is part of a paragraph. Placing text between paragraph start and end tags lets the computer know that it should be treated differently, often just spacing it out from other text.

We can create a paragraph by placing the enclosed text within a starting `<p>` and closing `</p>` tag.

The code for a paragraph will look like

```
<p> This is my paragraph </p>
```

## Exercise 2

### 1. Expand on your document

- a. Open the document you created for exercise 1. It should be titled something like "My First HTML Page" and saved somewhere that is easy to find.
- b. We are going to add to your web page. Remember we will need to put anything we would like to add in between the two body tags.
- c. Add a heading, or two! Remember your headings go between the heading tags `<h>` `</h>`
- d. Under your headings, add paragraphs. `<p>` `</p>`
- e. Your code might look like this:

```
<!doctype html>
<html lang="en">
  <body>
    <h> Welcome to my website </h>
    <p> Here you will learn a little bit about me </p>
    <h> My favorite song</h>
    <p> My favorite song is Never Gonna Give You Up by Rick Astley </p>
  </body>
```

### 2. Save the document

- a. Save your document (control + S for windows, command +s for Mac)

- b. Close the document
3. Open the document
    - a. It should open in a web browser.
    - b. What do you notice about it?
    - c. Explore your document: If you are using a screen reader, do your navigation commands work? Can you find the headings with your screen reader commands?

## Lesson 3: Links, Images, and Alt Text

### Links

Links are HTML objects that allow you to jump to a new location from your web page. Sometimes links are also used in code to embed images or videos by telling the web browser where on the internet to find the image or video that you would like on your web page.

1. A **link** typically looks like this

```
<a href="link">text content</a>
```

2. If you link to an **image** on the internet, it looks like this

```

```

3. If you link to a **video**, it might look like this

```
<iframe width="950" height="534" src="https://www.youtube.com/embed/xwJ6twBVTGY" title="YouTube video player" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>
```

### Alt Text

Alt text, or alternative text, is a text which describes an image embedded in code.

When you come across images on the internet, you might not see the coding behind it. When coding an embedded image into your web page, you will need to describe it with alt text. Though this is not visually available information, the alt text can be read by a screen reader to provide the visually impaired user with information about the image.

You might have noticed in the link for an image, it already asks for alt text

```

```

Im going to use the image found at this link as an example

<https://i.insider.com/61135525ad63f30019501966?width=700>

To embed this image on my web page and add alt text, my code might look like this

```

```

## Exercise 3

### 1. Open your document (ie. "My first HTML page")

Your code from last time should look something like this

```
<!doctype html>
<html lang="en">
  <body>
    <h> Welcome to my website </h>
    <p> Here you will learn a little bit about me </p>
    <h> My favorite song</h>
    <p> My favorite song is Never Gonna Give You Up by Rick Astley </p>
  </body>
```

### 2. Add an image

- a. When you find an image online you would like to include on your own website, you can right click or press shift +f10 while your JAWS cursor is on the image to pull up the context menu. Find "copy image link" in the menu and select it.
- b. Create the code for your image, Make sure to add alt text! Remember the code should look like this, but with your own link and your own alt text.

```

```

- c. Now, find a place where you want to add this to your code! I am going to put it between the last paragraph describing my favorite song, and just before the close body tag so that it is the very last thing on my web page
- d. Your code might look something like this now:

```
<!doctype html>
<html lang="en">
  <body>
    <h> Welcome to my website </h>
    <p> Here you will learn a little bit about me </p>
    <h> My favorite song</h>
    <p> My favorite song is Never Gonna Give You Up by Rick Astley </p>
    
  </body>
```

### 3. Save the document

### 4. Open the document

## Discussion

1. Why is Alt text important for screen reader accessibility?
2. Why should companies care about alt text?



3. Would putting alt text on all the images on a companies web page attract more traffic to the page? Why or why not?

## Optional: Add a video:

1. Go to youtube.com, find a video you like, click shift+f10 to open the context menu, arrow until you get to "copy embed code" and press enter. Paste this code where you want it to appear on your page. It should already be coded in html for you to embed.
2. Example: `<iframe width="950" height="534" src="https://www.youtube.com/embed/xwJ6twBVTGY" title="YouTube video player" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>`

Paste this anywhere in your code you would like in between your open body and close body tags to make sure it shows up on your web page!