

# Introduction to HTML5

## Sample Course Materials

Thank you for evaluating this curriculum pack for your school.

Purchasers of the curriculum will download the entire course as a single ZIP file, which then unzips to the following logical directory structure:

- **Handouts** - Materials for students that do not involve grading.
- **Lesson Plans** - Weekly lesson plans, divided by day, for instructors to use as a guide.
- **Presentations** - Sets of slides (PowerPoint format) that represent the heart of the actual course instruction.
- **Projects and Rubrics** - Student instructions and grading rubrics for class projects.
- **Source Code Examples** - Correctly worked code examples for each class project.
- **Tests and Quizzes** - Five weekly quizzes and a final exam.

This sample packet contains one example file from each of the above folders, combined into this single PDF document. To help clarify the transitions, we have added introductory pages between the different materials.

Unlike this preview format, the actual course files are unlocked and fully editable. This is intentional, as we encourage teachers to customize the course to best fit their own classroom environments and teaching styles.

All images included in the materials are legal to use in this classroom environment. For each of these images, either we own the copyright, have permission to use them from the copyright holder, or the images are in the public domain.

We have worked very hard to create these course materials to a high level of quality, and we hope you will find this curriculum pack to be a highly effective way to teach HTML5 in the classroom.

If you have any questions, please call us toll free (USA, Canada) at 1-888-552-1323 or send us an email at [support@highschoolwebdesign.com](mailto:support@highschoolwebdesign.com).

To purchase the curriculum for your school, please visit our website at <http://highschoolwebdesign.com>.

Thank You,

The HighSchoolWebDesign.com Team

**The following 3 pages are:**

**Lesson Plan from Week 1  
(Word Document)**

SAMPLE

# **Introduction to HTML5**

## **Lesson Plan – Week 1**

### **Objectives**

In this week of lessons, students will learn:

- The history of HTML and how HTML5 fits into this history
- The changes in rules and syntax between XHTML and HTML5
- How to convert an existing XHTML document to an HTML5 document
- The importance of semantic elements
- How to use the <header>, <footer>, and <nav> semantic elements
- How to create a new HTML5 web document

### **Required Materials**

- Presentations:
  - 1. Introduction to HTML5
  - 2. HTML5 Syntax
  - 3. New Semantic Elements 1
- Handouts:
  - 1. HTML5 Basics
  - 2. New HML5 Elements
- Projects and Rubrics:
  - 1. Conversion
  - 2. New Page
- Tests and Quizzes:
  - 1. Week 1 Quiz

### **Assessments**

- Grading Rubric for Conversion Project
- Grading Rubric for New Page Project
- Week 1 Quiz

# Teaching Procedure

## DAY 1

1. OPTIONAL: Distribute the course schedule (edit it to insert dates and to accommodate any changes) and explain to students what they will be learning during this course.
2. Present the PowerPoint: 1. Introduction to HTML5.
3. Present the PowerPoint: 2. HTML5 Syntax.
4. With any leftover time today or any other day during the first week, present to the students some well-known websites (Google, Facebook, YouTube, Yahoo, Wikipedia, Twitter, etc.) already using HTML5. To see the trend of HTML5 adoption over the past four quarters, a great resource is: <http://trends.builtwith.com/topsites/HTML-5-Specific-Tags>

## DAY 2

1. Distribute the Handout: 1. HTML5 Basics. This will serve as a reference for students working on the first project and throughout the course.
2. Distribute and review the Project: 1. Conversion. You may or may not provide to students the grading rubric that accompanies each project. This is optional and a matter of individual teacher preference.
3. Provide the students with the project files, including the alberta.html file and the ‘css’ and ‘images’ folders, along with their contents. (Each student should have some personal storage space, either on a central file server or on removable media, such as USB drives.)
4. The goal of the project is to convert a simple XHTML file to be in HTML5. Assist students as necessary with the copying and renaming of the provided ‘alberta.html’ file to ‘alberta2.html’ and the direct editing of the file in Notepad or other basic text editor.
5. Be prepared for very small spacing differences between the XHTML and HTML5 versions of the page when viewed in a browser. This is due to how browser manufacturers can have different margin and padding defaults between XHTML and HTML5.
6. Students should validate their pages online, using the URL provided. If they have the ability to store the validator page as a local bookmark, this can be a timesaver, as validation is a step in nearly all class projects.

## DAY 3

1. Present the PowerPoint: 3. New Semantic Elements (Part 1).
2. Emphasize that the new semantic elements are a major and important component of what is new in HTML5.
3. If time remains, distribute the handout and get started with the project listed for Day 4.

## DAY 4

1. Distribute the Handout: 2. New HTML5 Elements. This will serve as a reference for students working on this project and throughout the course.
2. Distribute and review the Project: 2. New Page. This is a two-day project and will challenge the students. In addition to getting the students familiar with the new HTML5 code and elements, this project will help the students get re-acquainted with using CSS for laying out and styling web documents.
3. Provide the students with the project files. This is the ‘Skeleton Files’ folder and all its contents. Remind the students that they should never make any edits to the content of this skeleton folder or its contents. It is to be used as a template for new websites and web pages. A copy should always be made first and then renamed prior to editing. (Should a student accidentally modify the skeleton files, simply give them a fresh copy.)
4. Once the students have made their copies and have the ‘index.html’ and ‘style.css’ files open and ready for editing, open the provided ‘2. New Page.ppt’ file on the instructor computer and project the second slide on the screen for the students to use as the target website.
5. Assist the students as necessary with getting their pages to look like the target site. Show them slides 3-5 of the PowerPoint to assist them with dimensions, colors, fonts, etc.
6. You can always open and view the ‘index.html’ and ‘style.css’ files in the ‘Source Code Examples’ folder to see a sample of a correctly completed site.

## DAY 5

1. Administer the Week 1 Quiz (15 minutes) from the ‘Tests and Quizzes’ folder.
2. Resume the prior project to completion.

**The following 12 pages are:**

**Presentation from Week 2  
(PowerPoint Document)**

**SAMPLE**



# New Semantic Elements (Part 2)



# Three More New HTML5 Elements

- The `<article>` element represents web content that could stand by itself, even if separated from the surrounding page information.
- The `<aside>` element represents content that is visually set apart from the main content of the page, yet is still somewhat related.
- The `<section>` element is a generic area of a web document that groups related content.

Along with `<header>`, `<footer>`, `<nav>`, and the all-purpose `<div>`, these three elements make up the basic building blocks when designing site layouts. Let's look at each one in turn.

# The <article> Element

- The official specification for <article> states that it is “a self-contained composition in a page that is independently distributable or reusable, e.g. in syndication. This could be a forum post, a magazine or newspaper article, a blog entry, or any independent item of content.”
- The key concept in the above definition is that it is self-contained. The <article> element was designed for content that can be extracted from its containing page and still retain its full value.
- In HTML5, there can be multiple <article> elements on a web page. In fact, this is fairly common. For example, a typical blog has several different blog posts visible on the home page, with the most recent post at the top.

Let's now add an <article> element to our simple web page.

# Using the <article> Element

Here we have added a short article to the main content area of our page:

```
<article>  
  <h2>Why This Website is Cooler  
    Than Yours</h2>  
  <p>While the rest of the world  
    is stuck in the last decade,  
    this site is built using  
    HTML5.</p>  
  ...  
</article>
```



And just a little CSS styling:

```
article {  
  margin: 15px;  
  padding: 10px;  
  background-color: #EEEEEE;  
}
```

# The <aside> Element

- The official specification for <aside> is “a section of a page that consists of content that is tangentially related to the content around it, and which could be considered separate from that content. Such sections are often represented as sidebars in printed typography.”
- It goes on to state that <aside> “can be used for effects like sidebars, for advertising, for groups of nav elements, and for other content that is considered separate from the main content of the page.”
- The most common uses of <aside> are for links to external websites, for advertising, and for "About Us" or "Contact Us" sidebars.
- An <aside> can be nested within an <article> if its content applies specifically to that article.

We'll now add an <aside> to our sample web page.

# Using the <aside> Element

We've added an `<aside>` box inside our article and inserted an image and external links:

```
<aside>


### External Resources:



- HTML5 Specification

...


</aside>
```

And used CSS to float the box to the right:

```
aside {
  width: 200px;
  float: right;
  background-color: #CCFFFF;
...
}
```



The screenshot shows a web browser window titled "My First HTML5 Page". The main content area has a blue header with the title "My Super Cool Website". Below the header is a navigation bar with four links: "Home", "Page 2", "Page 3", and "Page 4". The main content starts with a heading "Why This Website is Cooler Than Yours". Below this heading is a paragraph about the advantages of HTML5. To the right of the main content is a sidebar with a large "HTML 5" logo and a section titled "External Resources" containing three links: "HTML5 Specification", "HTML5 Explained", and "HTML5 Rocks". Arrows point from the code snippets in the yellow boxes to the corresponding parts of the browser screenshot.

Don't confuse a list of external links as a `<nav>` section. The `<nav>` element is for navigating within our own site.

# The <section> Element

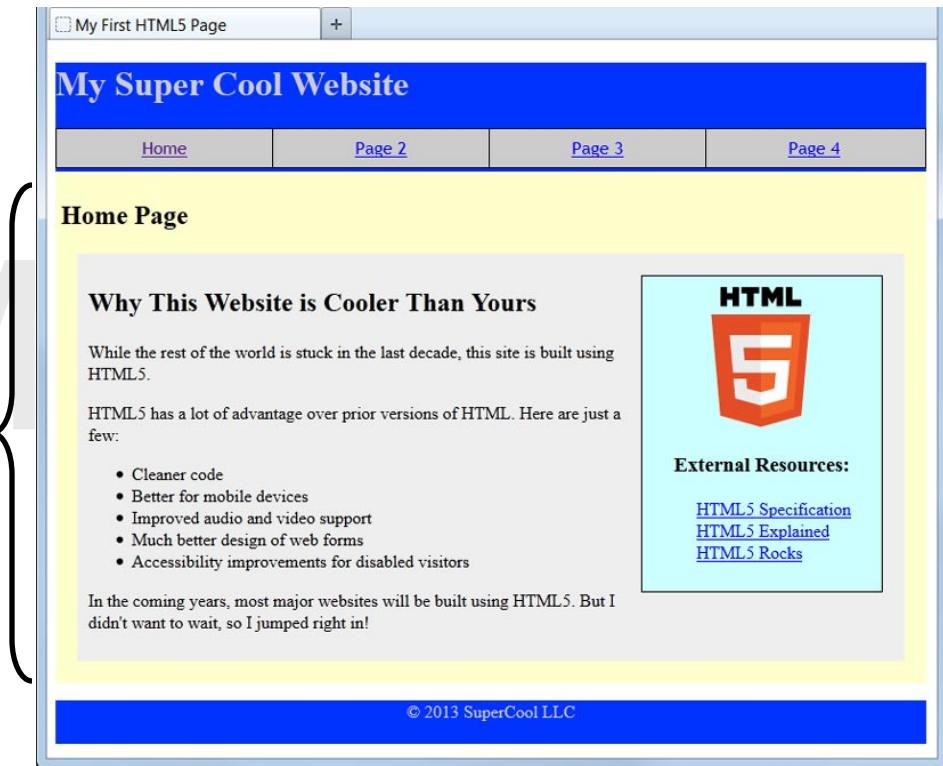
- The official specification for <section> is “generic section of a document. A section, in this context, is a thematic grouping of content, typically with a heading.”
- It continues to say that “a web site's home page could be split into sections for an introduction, news items, and contact information.”
- A common use of <section> is to contain a group of articles.
- The <section> element is an element of last resort, to be used only if the other semantic options (<header>, <footer>, <nav>, <article>, <aside>) are not appropriate.
- If the sole purpose is for styling, it is improper to use the <section> element, as there is no semantic value. Use the generic <div> instead.

Let's add a <section> element to our existing page.

# Using the <section> Element

We've inserted a <section> element to contain our article:

```
<section>
  <h2>Home Page</h2>
  <article>
    <aside>
      ...
    </aside>
    ...
  </article>
</section>
```



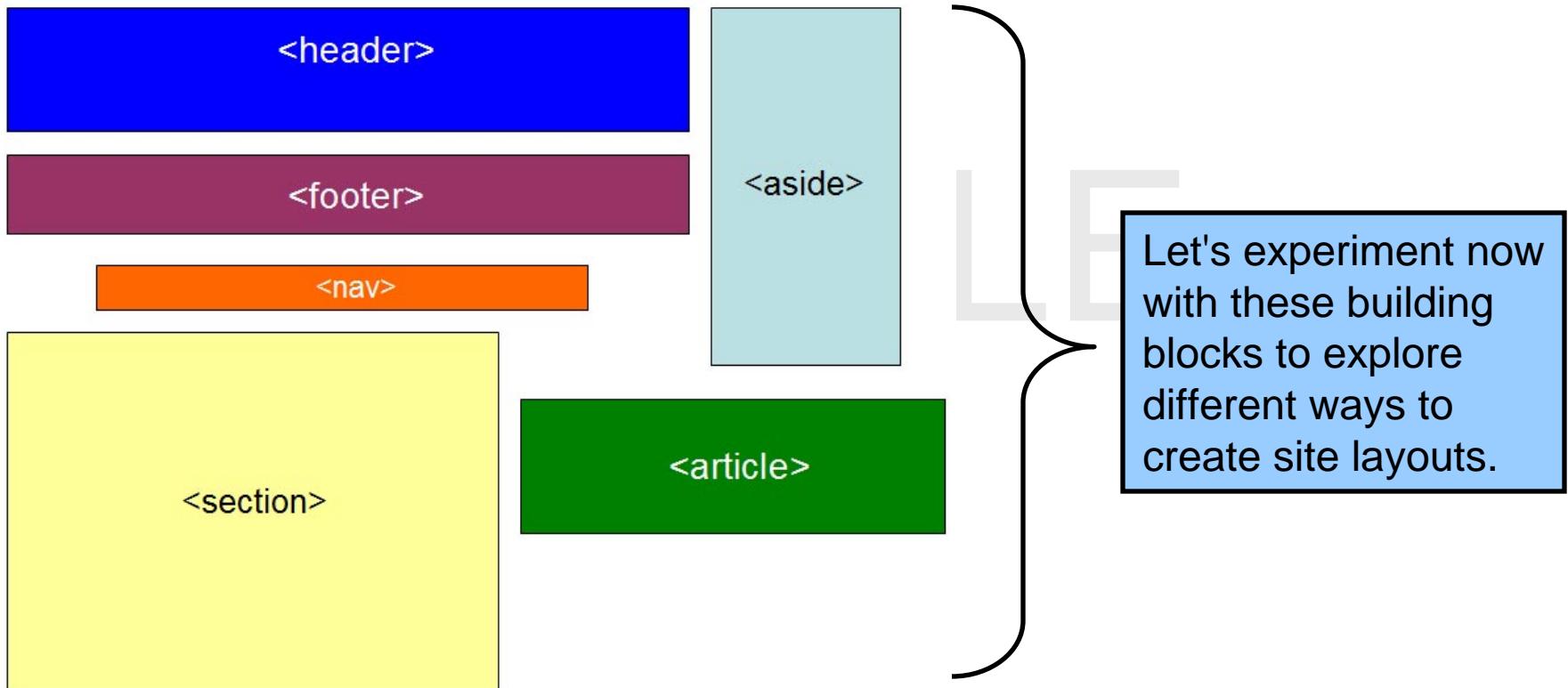
And CSS to change the background color:

```
section {
  background-color: #FFFFCC;
  padding: 5px;
}
```

We could now add more articles to be contained within the main <section>.

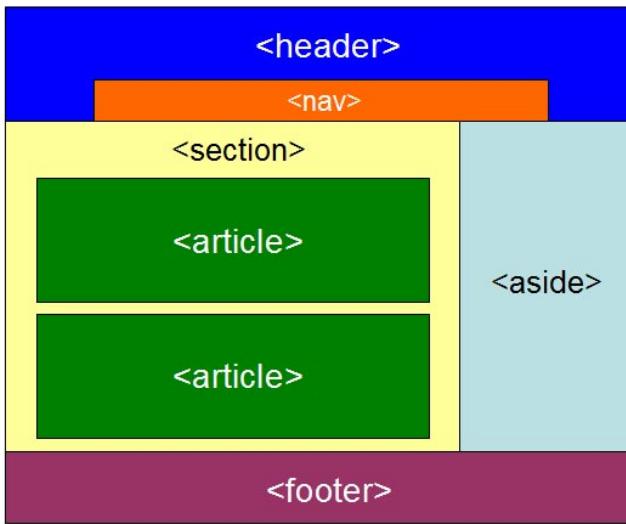
# Site Layouts Using HTML5

We have now covered all the basic building blocks for laying out HTML5-based websites:



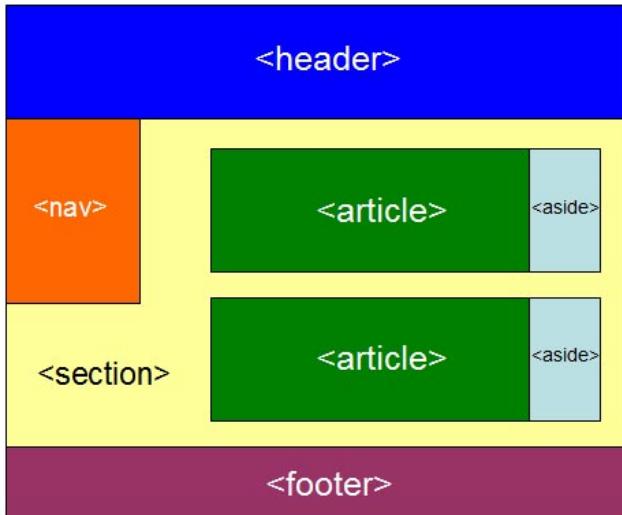
Don't forget that the <div> element is still a common component when designing web page layouts in HTML5. For this lesson, though, we are focusing on the new semantic elements.

# Example Site Layouts



This layout closely resembles the sample page we just created during this lesson.

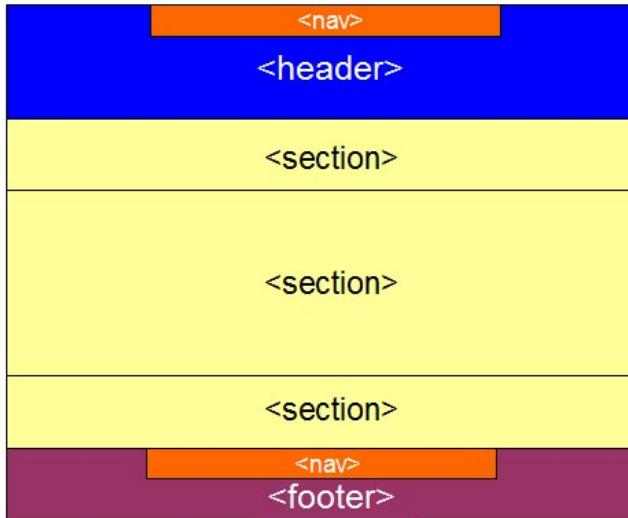
However, there is one difference. Note that the <aside> applies to the entirety of the main content, not to a specific article. This <aside> might contain "About Us" or "Contact Us" content, for example.



This layout is similar to the first, but moves the navigation menu to the left column.

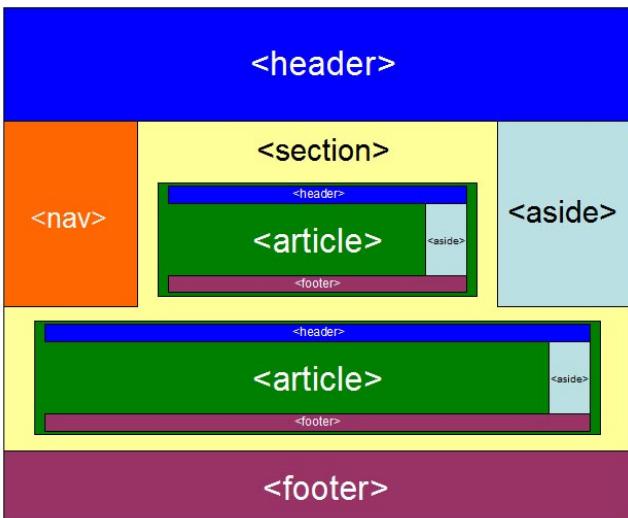
Also, each article has its own aside, which might contain links, advertisements, or a quote pulled from the main article.

# More Site Layouts



This layout has two navigation menus, one at the very top of the page, and one in the footer section. This is not at all unusual, as many sites give visitors more than one way to click to other areas of the site.

Also, notice that this page contains no articles or asides. Instead, there are three <section> elements. These might be an introduction, a main content area, and a conclusion.



Some layouts can be much more complex and use multiple instances of elements.

Notice on this layout that each article has its own header, footer, and aside. This is a fairly common practice, as articles are designed to be syndicated to other sites, and the original creators of the article want to include such things as company logos, contact info, and copyright details.

# Semantic Elements in Site Layout

- There is no "right way" to create a website layout in HTML5. The best approach is to use the semantic elements, within their intended purposes, in the way that presents our page content most effectively to our audience.
- Any of the semantic elements - <header>, <footer>, <nav>, <article>, <aside>, and <section> - can be used multiple times within the same page. They can also be nested one within another.
- We can still use <div> elements in HTML5 but only when they are being used solely for styling purposes or when there is no better choice among the semantic elements.

**The following 2 pages are:**

**Class Handout from Week 1  
(Word Document)**

SAMPLE

# New HTML5 Elements

Element	Description	Important Attributes
<article>	Self-contained content that could be separated from other page content and still retain its completeness.	
<aside>	Section of a page, such as a sidebar, that consists of content tangentially related to the main content.	
<audio>	Sound content.	src preload (none, metadata, auto) autoplay loop controls
<canvas>	Area that can be used to draw screen graphics via JavaScript.	id height width
<datalist>	Specifies a list of pre-defined options (dropdown list) for <input> elements.	id
<figure>	Self-contained media content, such as a photo, diagram, or illustration, which could be moved away from the main part of the document without affecting the document's meaning.	
<figcaption>	Caption or legend associated with a <figure> element.	
<footer>	Footer of a section of content, often containing author information, navigation links, and copyright notices.	
<header>	Header of a section of content, often containing headings, subheadings, and navigation links.	
<hgroup>	Groups a set of <h1> to <h6> elements when a heading has more than one level.	
<mark>	Marked or highlighted text where the meaning or context has changed from the original intent.	
<nav>	Section of a page containing navigation links to other pages on the same website or to other sections of the same page.	
<progress>	The completion progress of a task.	max value
<section>	A generic section of a document that groups related content.	
<source>	Defines multiple media resources for <video> and <audio> elements.	src type
<svg>	Draws on the page using Scalable Vector Graphics.	
<time>	A date and/or time.	datetime

# New HTML5 Elements

Element	Description	Important Attributes
<video>	Video content.	src preload (none, metadata, auto) autoplay loop controls height width poster

SAMPLE

**The following 5 pages are:**

**Class Project / Grading Rubric from Week 3 (2  
pages)**

**(Word Document)**

**Project Slides for Students to View (3 pages)**

**(PowerPoint Document)**

**NOTE: The Source Code Example for this project  
is in the course materials but omitted from this  
preview document.**

# Project 3: Add HTML5 Elements

## Objectives:

At the end of this lesson, you will be able to:

- Use the new <article>, <section>, and <aside> semantic elements.
- Improve your CSS skills to design and organize a web page.

## Instructions:

1. Go to your personal file storage space, make a copy of the “2. New Page” folder, and rename the copy to “3. Elements”.
2. Open “index.html” and “style.css” in a text editor.
3. Edit these two files to modify your existing HTML5 web page to match the image placed on the screen by your instructor. Save both files periodically and view in a web browser to monitor your progress toward matching the target page. Your teacher will provide you with the image file and the page content as unformatted text.
4. In the <nav> section, define the five links, respectively, as “index.html”, “destination.html”, “special.html”, “blog.html”, and “contact.html”.
5. Hint #1: Use one instance each of <article>, <section>, and <aside> and in the appropriate locations on the page.
6. Hint #2: Use a CSS class to style the right sidebar.
7. Once complete, go to <http://validator.w3.org/> and verify that your HTML5 file validates with no errors.

# Rubric 3: Add HTML5 Elements

Name: \_\_\_\_\_

Component	Possible Points	Score
<section> element has been used for the appropriate section of the page.	2	
<article> element has been used for the appropriate section of the page.	2	
<aside> element has been used for the appropriate section of the page.	2	
The height and width of the sidebar have been set correctly.	2	
The sidebar border has been created correctly.	2	
The image displays in the proper location.	2	
The main section content has the proper spacing from the sidebar section.	2	
The overall page closely resembles the target page.	3	
The HTML5 page validates with no errors.	3	
The project was submitted on time (20% off for each day late)		
<b>Total Score</b>	<b>20</b>	

SAMPLE



# Project 3: Add HTML5 Elements



# Project 3: Add HTML5 Elements

## Let's Travel the World!

[Home](#)

[Destination](#)

[Special](#)

[Travel Blog](#)

[Contact Us](#)

### Welcome to Let's Travel The World!

By traveling - both within the USA and abroad - we expand our horizons and gain a greater appreciation of the world we live in.

Experiencing other cultures, including new food, languages, and customs, challenges us and makes us better understand our own culture.

We are a full service travel agency. As seasoned travelers ourselves, we know what we're talking about and can draw upon our own experiences when putting together a great adventure for you and your family.

Once you've enjoyed a couple of great trips, you might just "catch the bug" like we did and start planning two or three trips ahead! Maybe you'll even put a big world map up on your wall at home and get out the color pushpins...

So contact us today and let's start planning your next amazing trip!



**What's Your Next Destination?**

# Project 3: Add HTML5 Elements

## Let's Travel the World!

[Home](#)

[Destination](#)

[Special](#)

[Travel Blog](#)

[Contact Us](#)

### Welcome to Let's Travel The World!

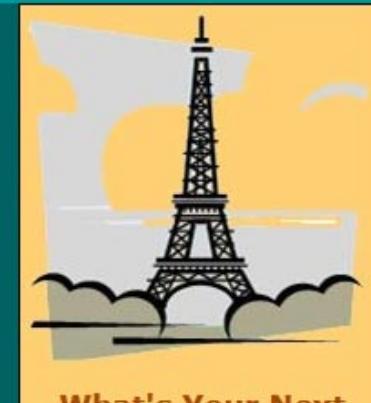
By traveling - both within the USA and abroad - we expand our horizons and gain a greater appreciation of the world we live in.

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So contact us today and let's start planning your next amazing trip!



**What's Your Next Destination?**

**The following 4 pages are:**

**Quiz and Answer Key from Week 4  
(Word Document)**

**SAMPLE**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Introduction to HTML5

### Week 4 Quiz

1. Some new field types in HTML5 forms have added an automatic validation process. When is this validation performed?
  - a. As soon as the form loads on the page.
  - b. Once the user leaves the current field and clicks or tabs to the next field.
  - c. Once the user clicks on the button to submit the form.
  - d. At each of the above steps.
  
2. What is the benefit of adding a placeholder attribute and value to a form field?
  - a. It gives the user a helpful hint on how to enter data into the field.
  - b. It provides a default value the user can accept by leaving the field as is.
  - c. It shows the user a list of values previously entered for the field name.
  - d. It shows the user which value has been entered most often by other users.
  
3. If we add the **required** attribute to several fields in our web form, and a user views the form in a non-supporting browser, such as Internet Explorer 9.0, what will happen?
  - a. If no data is supplied in the required fields, the form can still be submitted without error.
  - b. If no data is supplied in the required fields, the form can still be submitted but will use the specified placeholder or default values instead.
  - c. If no data is supplied in the required fields, the browser will display an error message and prevent the form from being submitted.
  - d. The browser will require that all fields be completed, rather than just those with the **required** attribute.
  
4. Why do so few web designers use the new "color" input type in their HTML5 web forms?
  - a. Limited number of colors available in the color picker.
  - b. Internet Explorer generates a page error.
  - c. Non-supporting browsers require users to enter hexadecimal color code.
  - d. HTML5 is considering dropping this input type.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

5. Which value will be permitted with the following form input field?

**Temperature:** <input type="number" min="95" max="106" step="0.2" value="98.6" name="temp">

- a. 105.9
- b. 99.4
- c. 98.5
- d. 94.8

6. If you were designing a web form and wanted the user to begin typing directly into a specific field (without first having to press [Tab] or click on the field), which attribute would you add to that field?

- a. autocomplete
- b. placeholder
- c. autofocus
- d. cursor

7. What might be an important reason to add the `autocomplete="false"` attribute to a form <input> field?

- a. To speed up the browser by freeing up resources.
- b. To prevent sensitive data, such as credit card numbers, from displaying on the screen.
- c. To save the user time by not having to retype the same information as before.
- d. None of the above.

8. Which of the following is a benefit of using the new "number" type in HTML5 forms?

- a. Providing optional minimum and maximum values for the browser to enforce.
- b. Disallowing non-numeric values being entered.
- c. Automatically bringing up numeric keyboard entry for mobile devices.
- d. All of the above.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

9. In a modern browser that supports the <datalist> element, how would this “Favorite Color” input box look to the user?

```
Favorite Color: <input type="text" name="favcolor" list="colors">
<datalist id="favorites">
  <option value="Red">
  <option value="Blue">
  <option value="Green">
  <option value="Purple">
  <option value="Pink">
  <option value="Orange">
</datalist>
```

- a. A blank text box, never showing the list of suggestions, since the input type should have been set to “color”.
- b. A blank text box, with the list of suggestions showing once the user clicked in the box.
- c. A text box with the list of suggestions automatically showing.
- d. A blank text box, not showing the list of suggestions, since the list attribute and id attribute do not match.

10. Which of the following should only be used once per web page?

- a. placeholder
- b. autofocus
- c. autocomplete
- d. datalist

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Introduction to HTML5**  
**Week 4 Quiz Answer Key**  
**(NOTE: Obscured for This Preview Document)**

1. X
2. X
3. X
4. X
5. X
6. X
7. X
8. X
9. X
10. X

SAMPLE