



HTML5

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HTML5

Digital Classroom



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Jeremy Osborn and the AGI Creative Team



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HTML5 Digital Classroom

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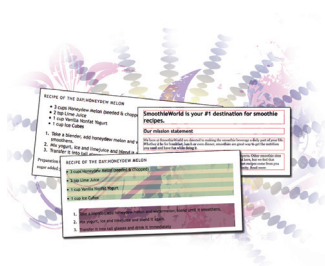
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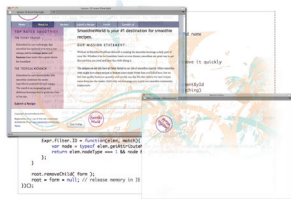
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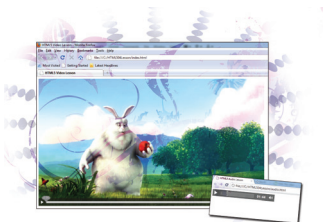
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Using this book

This book will get you up-and-running fast with HTML5 and CSS3. The *HTML5 Digital Classroom* is divided into two sections. The first section covers the fundamentals of HTML5 along with the essentials of styling text and creating page layouts using XHTML/HTML and CSS. If you are new to web page development, or are updating your skills from using HTML tables for layout, or simply want a refresher in CSS and HTML fundamentals, start with section one. Even if you consider yourself a skilled web pro, start with lesson one before jumping ahead to the second section where you'll dive into HTML5. The second section makes up the bulk of this book. Feel free to jump ahead to this. If you are an experienced web designer or developer, and already have a solid grasp of the fundamentals involved with coding HTML and CSS.

Some of the foundational material contained in the first five lessons of this book was originally published in the *Web Design with HTML and CSS Digital Classroom*, and it has been updated for use in this book.

About HTML5 Digital Classroom

The *HTML5 Digital Classroom* provides you with the information you need to explore and understand the rapidly evolving landscape of web technologies. You may already have some experience building web pages and websites and may even be experienced with design tools like Dreamweaver or Expression Web. While HTML5 and related technologies such as CSS3 and JavaScript are still undergoing revision, this book helps you understand the underlying concepts for organizing, creating, and delivering web content effectively using best practices.

The *HTML5 Digital Classroom* helps you to get up-and-running quickly with HTML5. While you can work through the lessons in this book in any sequence, we recommend that you start in at the first lesson and progress through the book in the sequence in which they are presented. If you are an experienced web developer, you may decide to start in lesson one, then glance over lessons two through five and resume your learning with lessons six through 15. Each lesson is designed to be stand-alone, so if you need to focus on a particular part of HTML5, feel free to jump right to that section. Each lesson includes detailed, step-by-step instructions, background information, companion video tutorials that relate directly to the lesson in the book, and lesson files for you to follow along with the concepts being presented.

The *HTML5 Digital Classroom* is like having your own expert instructor guiding you through each lesson while you work at your own pace. This book includes 15 self-paced lessons that let you discover essential skills, explore web design, and learn HTML5, CSS3 and JavaScript techniques that will save you time and allow you to more easily create effective HTML5 websites. You'll become productive right away with real-world exercises and simple explanations. Each lesson includes step-by-step instructions, lesson files, and video tutorials, all of which are available on the included DVD. The *HTML5 Digital Classroom* lessons are developed by the same team of instructors and experts who have created many of the official training titles for companies such as Adobe Systems and Microsoft. Now you can benefit from the clear and detailed instructions provided by the expert instructors that are part of the Digital Classroom team.

Prerequisites

This book relies heavily on adding code by hand, but does not require a specific text editor when working with the HTML and CSS code. The exact text editor you use is not important, but you should choose and install a text editor before you start with the exercises in this book so that you can easily open and work with the lesson files presented in this book. You may currently have your own preferences, but we've listed some options below.

Some Mac OS text editors include BBedit and TextWrangler, both of which are available at <http://www.barebones.com>. Or you can use TextMate which is available for download at <http://macromates.com>. Another Mac OS text editor is Coda which can be found at <http://www.panic.com/coda/>.

If you work on a Windows computer, you may wish to use E Text Editor which is available at <http://www.e-texteditor.com> or Microsoft Visual Web Developer Express which can be found at <http://www.microsoft.com/expression/web>.

If you already have a visual web design tool like Adobe Dreamweaver or Microsoft Expression Web installed on your computer, you can use the coding tools integrated with these software packages instead of installing a dedicated text editor. Although both Adobe and Microsoft offer free trial versions of these software tools, if you don't have either one installed, we recommend skipping them for now and instead using any one of the text editors listed above while working with this book. By using a text editor, you can focus on the design and underlying code rather than learning the user interface and functions of a specific software package.

System requirements

Before starting the lessons in the *HTML5 Digital Classroom*, make sure that your computer is equipped for creating and managing static websites. Because you will be using a variety of software tools, there is no formal minimum requirement for your computer, however we suggest that your computer meet or exceed the following guidelines:

Windows OS

- Intel® Pentium® 4, AMD Athlon® 64, or Multicore Intel® processor; Microsoft® Windows® XP with Service Pack 2; Windows Vista® Home Premium, Business, Ultimate, or Enterprise with Service Pack 1; or Windows 7
- 1GB recommended RAM
- 1GB of available hard-disk space for working with files
- 1280 × 800 display with 16-bit video card
- Broadband Internet connection

Macintosh OS

- Multicore Intel® processor
- Mac OS X v10.4 or greater
- 1 GB of RAM 1 GB of available hard-disk space for working with lesson files.
- 1280 × 800 display with 16-bit video card
- Broadband Internet connection

Using web browsers that support HTML5 tags

HTML5 is a new and evolving technology and the browser you use to preview your web pages may provide dramatic differences. We make every possible effort to point out these differences in the exercises used in this book. To ensure the best results you need to use the most current version of your browser. Throughout the book you may see references to “modern browsers.” These are the browsers we used throughout:

Mozilla Firefox 4.0+ (<http://www.getfirefox.com>)

Google Chrome 11.0+ (<http://www.google.com/chrome/>)

Apple Safari 5.0+ (<http://www.apple.com/safari/download/>)

Internet Explorer 9.0+ (<http://windows.microsoft.com/en-US/internet-explorer/products/ie/home>)

Opera 11.0+ (<http://www.opera.com/browser/download/>)

You should consider downloading two or more browsers and have these available on your system. For designers and developers, it is common to have access to multiple browsers and this is important as you test HTML5 pages.

Understanding menus and commands

Menus and commands within the software tools discussed in this book are identified by using the greater-than symbol (>). For example, the command to print a document might appear as File > Print, representing that you click the File menu, then choose the Print command.

Understanding how to read HTML and CSS code changes

Many of the step-by-step instructions in the book involve typing one line (or more) of HTML, CSS or JavaScript code to a previously existing block of code. In these cases, the new code for you to add is highlighted in red to help you quickly identify the text to be added to your lesson file.

For example, this code represents a line already present in your lesson file:

```
<h1> News </h1>
```

The code highlighted here in red is what you would need to add:

```
<h1 class="frontpage"> News </h1>
```

Loading lesson files

The *HTML5 Digital Classroom* DVD includes files that accompany the exercises for each of the lessons. You may copy the entire lessons folder from the supplied DVD to your hard drive, or copy only the lesson folders for the individual lessons you wish to complete.

For each lesson in the book, the files are referenced by the file name of each file. The exact location of each file on your computer is not used, as you may have placed the files in a unique location on your hard drive. We suggest placing the lesson files in the My Documents folder or on the Desktop so you can easily access them.

Downloading and copying the lesson files to your hard drive

- 1** Insert the HTML5 Digital Classroom DVD supplied with this book.
- 2** On your computer, navigate to the DVD and locate the folder named HTML5lessons.
- 3** You can install all the files, or just specific lesson files. Do one of the following:
 - Install all lesson files by dragging the HTML5lessons folder to your hard drive.
 - Install only some of the files by creating a new folder on your hard drive named HTML5lessons. Open the HTML5lessons folder on the supplied DVD, select the lesson you wish to complete, and drag the folder(s) to the HTML5lessons folder you created on your hard drive.

Unlocking lesson files on Mac OS computers

Macintosh users may need to unlock the files after they are copied from the accompanying disc. This only applies to Mac OS computers and is because the Mac OS may view files that are copied from a DVD or CD as being locked for writing.

If you are a Mac OS user and have difficulty saving over the existing files in this book, you can use these instructions so that you can update the lesson files as you work on them and also add new files to the lessons folder

Note that you only need to follow these instructions if you are unable to save over the existing lesson files, or if you are unable to save files into the lesson folder.

- 1** After copying the files to your computer, click once to select the HTML5lessons folder, then choose File > Get Info from within the Finder.
- 2** In the HTML5lessons info window, click the triangle to the left of Sharing and Permissions to reveal the details of this section.
- 3** In the Sharing and Permissions section, click the lock icon, if necessary, in the lower right corner so that you can make changes to the permissions.
- 4** Click to select a specific user or select everyone, then change the Privileges section to Read & Write.
- 5** Click the lock icon to prevent further changes, and then close the window.

Working with the video tutorials

Your *HTML5 Digital Classroom* DVD includes video tutorials developed by the authors to help you understand the concepts explored in each lesson. Each tutorial is approximately five minutes long and demonstrates and explains the concepts covered in the lesson.

The videos are designed to supplement your understanding of the material in the chapter. We have selected exercises and examples that we feel will be most useful to you. You may want to view the entire video for each lesson before you begin that lesson in the book. Additionally, at certain points in a lesson, you will encounter the DVD icon. The icon, with appropriate lesson number, indicates that an overview of the exercise being described can be found in the accompanying video.



DVD video icon.

Setting up for viewing the video tutorials

The DVD included with this book includes video tutorials for each lesson. Although you can view the lessons on your computer directly from the DVD, we recommend copying the folder labeled *Videos* from the *HTML5 Digital Classroom* DVD to your hard drive.

Copying the video tutorials to your hard drive

- 1 Insert the *HTML5 Digital Classroom* DVD supplied with this book.
- 2 On your computer desktop, navigate to the DVD and locate the folder named *Videos*.
- 3 Drag the *Videos* folder to a location onto your hard drive.

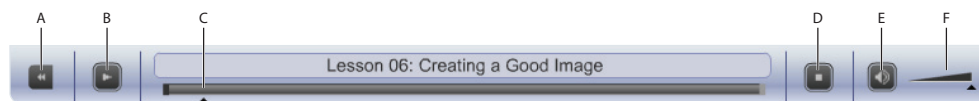
Viewing the video tutorials

The videos on the *HTML5 Digital Classroom* DVD are saved in the Flash projector format. A Flash projector file wraps the Digital Classroom video player and the Adobe Flash Player in an executable file (.exe for Windows or .app for Mac OS). The file extension may not always be visible depending upon settings on your computer. Projector files allow the Flash content to be deployed on your system without the need for a browser or prior standalone player installation.

Playing the video tutorials

- 1 On your computer, navigate to the Videos folder you copied to your hard drive from the DVD. Playing the videos directly from the DVD may result in poor quality playback.
- 2 Open the Videos folder and double-click the HTML5videos_PC.exe (Windows) or HTML5videos_Mac.app (Mac OS) to view the video tutorial.
- 3 Press the Play button to view the videos.

The Flash Player has a simple user interface that allows you to control the viewing experience, including stopping, pausing, playing, and restarting the video. You can also rewind or fast-forward, and adjust the playback volume.



A. Go to beginning. B. Play/Pause. C. Fast-forward/rewind. D. Stop. E. Volume Off/On. F. Volume control.

Playback volume is also affected by the settings in your operating system. Be certain to adjust the sound volume for your computer, in addition to the sound controls in the Player window.

Additional resources

The Digital Classroom series of books can be read in print or using an e-reader. You can also continue your learning online with the training videos, or at seminars, conferences, and in-person training events led by the authors.

DigitalClassroomBooks.com

You can contact the authors, discover any errors, omissions, or clarifications that have been identified since the time of printing, and read excerpts from the other Digital Classroom books in the Digital Classroom series at digitalclassroombooks.com.

Seminars, conferences, and training

The authors of the Digital Classroom seminar series frequently conduct in-person seminars and speak at conferences, including the annual CRE8 Conference. Learn more about their upcoming speaking engagements and training classes at agittraining.com.

Resources for educators

If you are an educator, contact your Wiley education representative to access resources for this book designed just for you, including instructors' guides for incorporating the HTML5 Digital Classroom into your curriculum. If you don't know who your educational representative is, you may contact the Digital Classroom books team using the form at DigitalClassroomBooks.com.

Section One: Essentials of HTML, HTML5, and CSS

This book is divided into two sections. The first section covers the fundamentals of HTML5 along with the essentials of styling text and creating page layouts using XHTML/HTML and CSS.

Even if you consider yourself a skilled web professional, start with Lesson 1 in this section before jumping ahead to the second section, which starts with Lesson 6, where you'll dive into HTML5. New web designers and developers, and those updating their skills from table-based HTML development, will want to complete Lessons 1 through 5 before moving on to Section Two in this book.

Lesson 1

What you'll learn in this lesson:

- Needs fulfilled by HTML5
- The scope of HTML5
- An overview of HTML5 Syntax
- An overview of HTML5 APIs and supporting technologies



Defining HTML5

In this lesson, you will discover the features and capabilities that are part of the HTML5 specification and related web technologies. You will also understand the benefits HTML5 provides to web designers, developers and end-users.

Starting up

You will not need any files for this lesson.

This lesson provides a general overview of HTML5. The additional lessons include step-by-step exercises, while this lesson provides an overview and road map of what you will be discovering in the future lessons.



See Lesson 1 in action!

Use the accompanying video to gain a better understanding of how to use some of the capabilities shown in this lesson. The video tutorial for this lesson can be found on the included DVD.

Defining HTML5

HTML5 is a combination of new HTML markup tags, CSS3 properties, JavaScript, and several supporting technologies related to, but technically separate from, the HTML5 specification. For this reason, we make a distinction between the HTML5 specification and the HTML5 family.

You can define the HTML5 specification as new markup elements, or syntax, used by designers to build web pages in conjunction with the tags that are currently used. Many of these new elements are familiar to designers who work with traditional HTML tags, such as `<p>`, ``, and `<div>`. These new tags provide better tools for developers and designers, and translate to better experiences for users.

The HTML5 family includes the new tags and technologies such as CSS3, Geolocation, Web storage, Web Workers, and Web Sockets. These technologies provide a more powerful upgrade to the toolset, and result in more useful and sophisticated web pages.

New browsers add features based on consumer expectation and as part of the natural evolution of technology. As web applications become more responsive, speedy, and able to work with complex tasks such as image editing, mapping, spreadsheets, and video, users expect this level of performance from all web applications. There are limitations with the capabilities of current languages and the ease of implementing and adding these features. HTML5 provides new tools and features to help make websites more useful and exciting.

The history of HTML5

HTML4, which was nearing completion in 1998, is the markup language that forms the basis for much of the underlying framework of web pages today. Web designers and developers have been using the specification HTML 4.01 for years quite successfully, in combination with CSS to define style and JavaScript to add interactivity.

After HTML 4.0.1 was finalized, the W3C continued the evolution of the Web by ending the development of HTML 4.0.1 and starting a language called XHTML 1.0. There is little difference between HTML 4.0.1 and XHTML 1.0 (XHTML is a more strict language; for example, all tags need to be lowercase). One of the goals of XHTML 1.0 was to create a markup language that would expand and meet the demands of future technology, such as mobile devices. Many websites have been built using XHTML 1.0 as a framework, and many designers and developers appreciated the more strict rules of syntax.

As XHTML 1.0 was adopted and used, the development of another language, XHTML 2.0, began. XHTML 2.0 added several new powerful features to web pages and borrowed heavily from XML. However, there were several technical issues with the new language, and it didn't reflect the actual needs of web developers.

In 2004, a group of representatives from browser manufacturers, such as Opera, Mozilla and Apple, and a group of working web developers formed an independent group called the WHATWG (Web Hypertext Application Technology Working Group). Their mission was to create a better HTML markup specification, designed to build the new type of web application without breaking backwards compatibility with existing browsers.

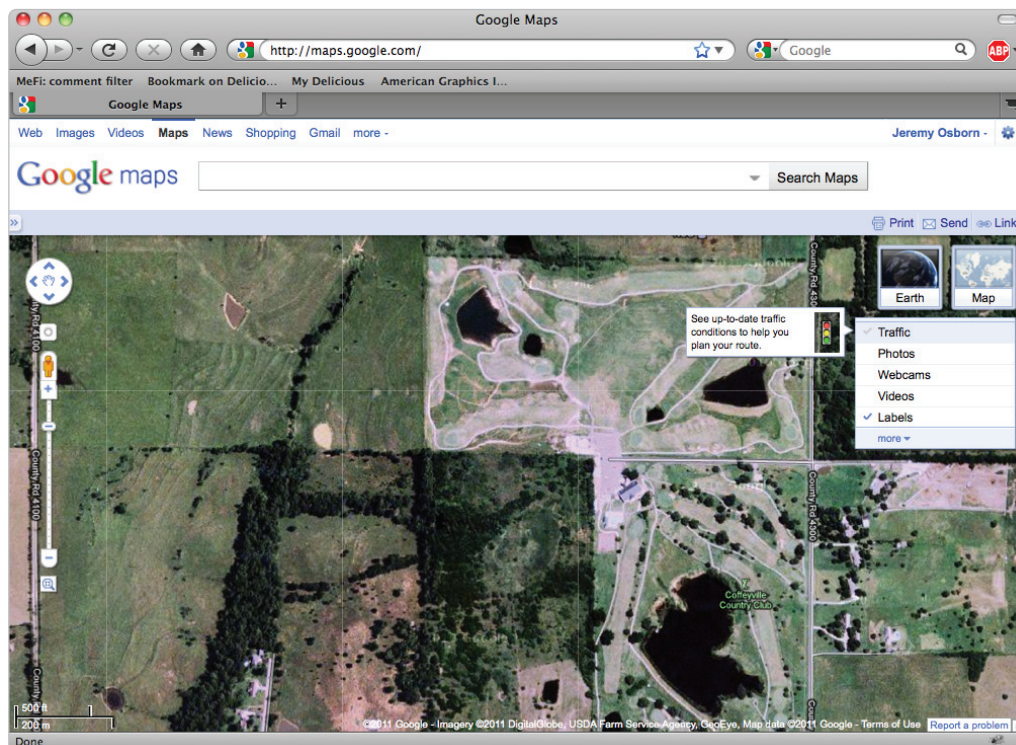
The result was the Web Applications 1.0 specification, which identified the features that existing browsers shared, and proposed new features, such as the APIs that form the web family. As a result, the development of XHTML 2.0 ceased and HTML 4.0 was recreated as HTML5. However, remembering that HTML5 started as Web Applications 1.0 helps to understand what HTML5 is designed to do.



For more information about the WHATWG, visit www.whatwg.org.

HTML5 expands the definition of what a web page can do

Currently, HTML cannot play multimedia such as audio and video without a browser plugin like Flash or QuickTime. HTML also has no capability to store data on a user's computer; this is currently done with a scripting language or another technology. There is no native drawing format in HTML: graphics and animations are currently supplied as image files or through browser plugins such as Flash, Java, or Silverlight. In general, as more and more people rely on the Web and web applications, the expectations of what a web page can efficiently do is constantly growing. This user demand for higher performance and more fully featured websites is limited by the current HTML language.



A site such as Google Maps is a high-performance web application that could benefit from the upcoming features in HTML5.

The following sections provide a brief explanation of some of the most important aspects of HTML5.