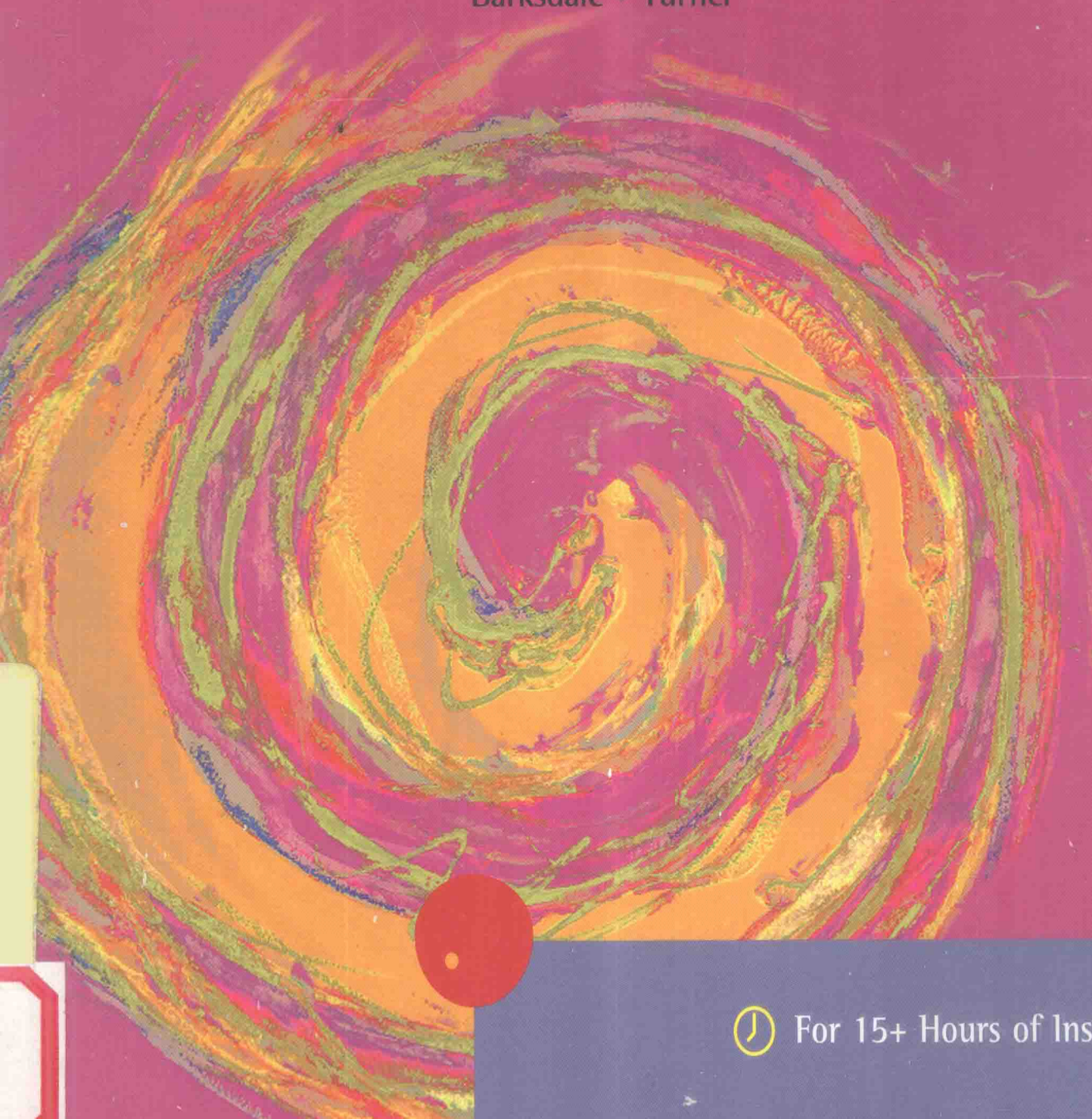


THOMSON

COURSE TECHNOLOGY

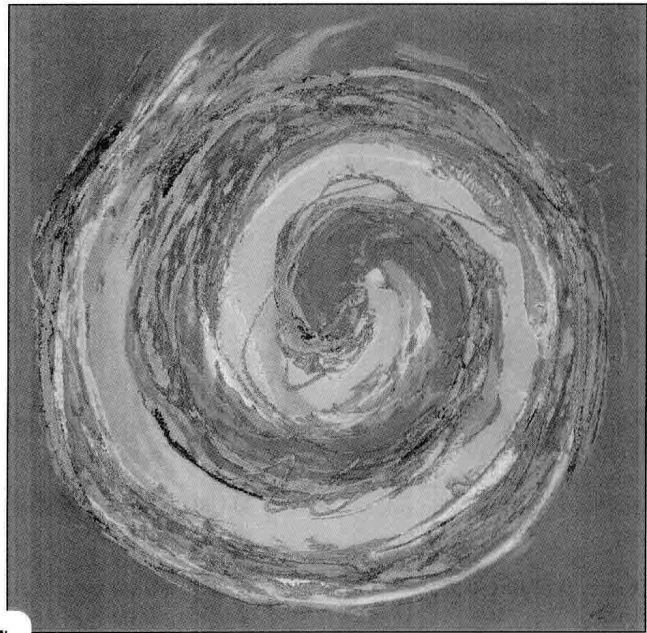
# HTML and JavaScript BASICS

Barksdale • Turner



 For 15+ Hours of Instruction

# HTML AND JAVASCRIPT BASICS



3

Karl Barksdale  
Technology Consultant, Provo, Utah  
E. Shane Turner



**HTML and JavaScript BASICS**  
by Karl Barksdale and E. Shane Turner

**Sr. Vice President, School SMG**  
Chris Elkhill

**Managing Editor**  
Chris Katsaropoulos

**Sr. Product Manager**  
Dave Lafferty

**Marketing Manager**  
Kim Rytzel

**Associate Product Manager**  
Jodi Dreissig

**Director of Production**  
Patty Stephan

**Manufacturing**  
Laura Burns

**Development Editor**  
Anne Chimenti  
Custom Editorial Productions, Inc.

**Production Editor**  
Jean Findley  
Custom Editorial Productions, Inc.

**Compositor**  
GEX Publishing Services

**Printer**  
Banta—Menasha

COPYRIGHT © 2003 Course Technology, a division of Thomson Learning, Inc. Thomson Learning™ is a trademark used herein under license.

Printed in the United States of America

2 3 4 5 6 7 8 9 BM 04 03

For more information, contact  
Course Technology, 25 Thomson  
Place, Boston, Massachusetts, 02210.

Or find us on the World Wide Web  
at: [www.course.com](http://www.course.com)

ALL RIGHTS RESERVED. No part of this work covered by the copyright hereon may be reproduced or used in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, Web distribution, or information storage and retrieval systems—without the written permission of the publisher.

For permission to use material from this text or product, contact us by

Tel (800) 730-2214  
Fax (800) 730-2215  
[www.thomsonrights.com](http://www.thomsonrights.com)

**Disclaimer**  
Course Technology reserves the right to revise this publication and make changes from time to time in its content without notice.

ISBN 0-619-05991-5



# Get Back to the Basics...

## With these *exciting new products*

Our exciting new series of short, programming and application suite books will provide everything needed to learn this software. Other books include:

**NEW! HTML and JavaScript BASICS, 2<sup>nd</sup> Ed.** by Barksdale and Turner  
*15+ hours of instruction for beginning through intermediate features*

0-619-05991-5 Textbook, Soft Bound Cover  
0-619-05992-3 Instructor Resource Kit  
0-619-05993-1 Review Pack (Data CD)

**NEW! HTML BASICS** by Barksdale and Turner  
*10+ hours of instruction for beginning features*

0-619-05990-7 Textbook, Soft Bound Cover  
0-619-05992-3 Instructor Resource Kit  
0-619-05993-1 Review Pack (Data CD)

**NEW! Programming BASICS, Using Microsoft Visual Basic, C++, HTML, and Java**  
by Knowlton & Barksdale

*35+ hours of instruction for beginning through intermediate features*

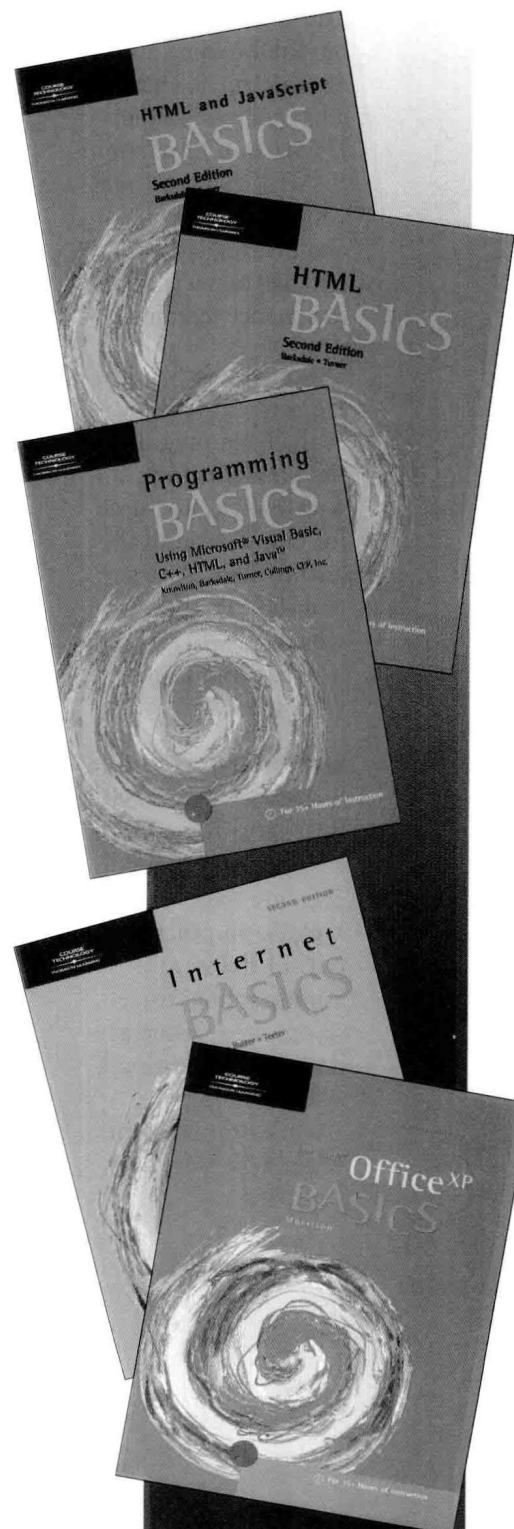
0-619-05803-X Textbook, Hard Bound Cover  
0-619-05801-3 Textbook, Soft Bound Cover  
0-619-05800-3 Instructor Resource Kit  
0-619-05802-1 Activities Workbook  
0-619-05949-4 Review Pack (Data CD)

**NEW! Internet BASICS** by Barksdale, Rutter, & Teeter  
*35+ hours of instruction for beginning through intermediate features*

0-619-05905-2 Textbook, Soft Spiral Bound Cover  
0-619-05906-0 Instructor Resource Kit  
0-619-05907-9 Review Pack (Data CD)

**NEW! Microsoft Office<sup>XP</sup> BASICS** by Morrison  
*35+ hours of instruction for beginning through intermediate features*

0-619-05908-7 Textbook, Hard Spiral Bound Cover  
0-619-05906-0 Instructor Resource Kit  
0-619-05909-5 Activities Workbook  
0-619-05907-9 Review Pack (Data CD)



# How to Use This Book

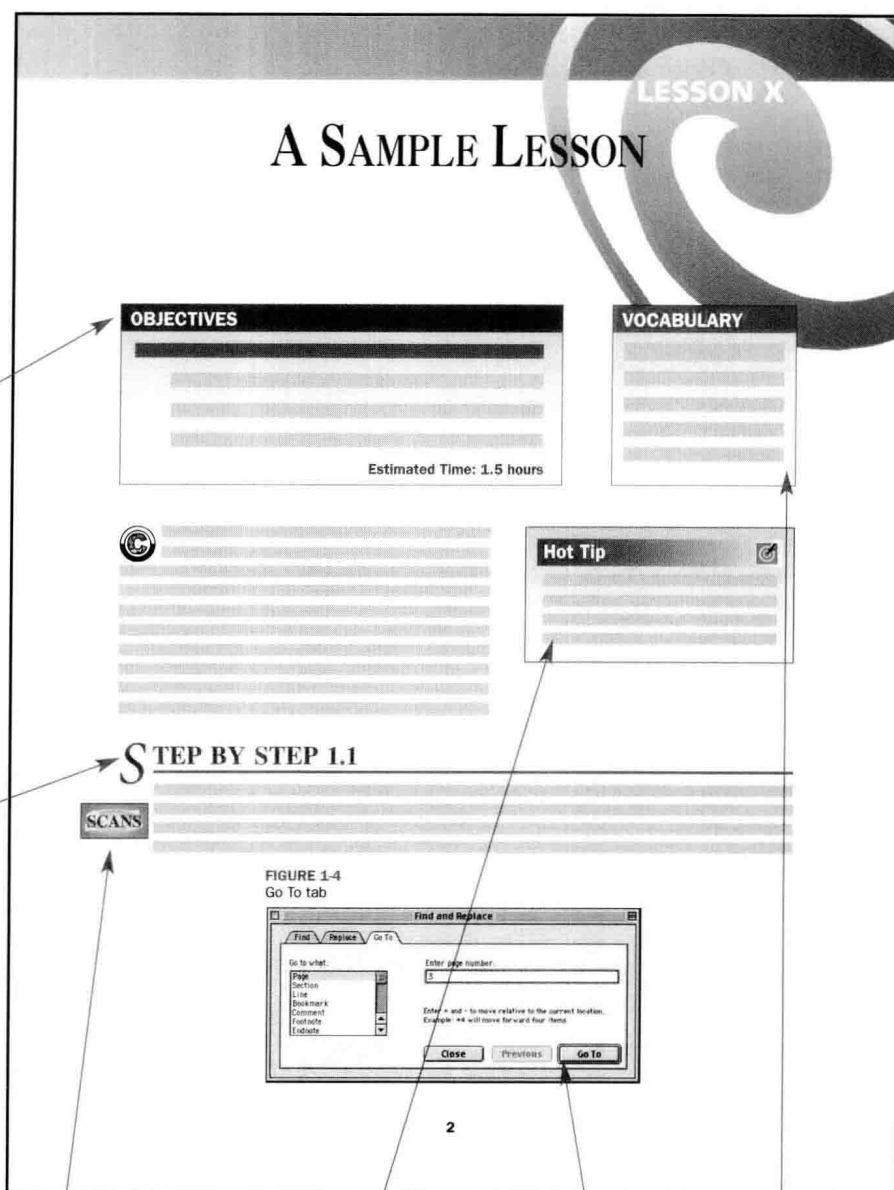
What makes a good text about HTML and JavaScript? Sound instruction and hands-on skill-building and reinforcement. That is what you will find in *HTML and JavaScript BASICS*. Not only will you find a colorful and inviting layout, but also many features to enhance learning.

## Objectives—

Objectives are listed at the beginning of each lesson, along with a suggested time for completion of the lesson. This allows you to look ahead to what you will be learning and to pace your work.

## Step-by-Step

**Exercises—**Preceded by a short topic discussion, these exercises are the “hands-on practice” part of the lesson. Simply follow the steps, either using a data file or creating a file from scratch. Each lesson is a series of these step-by-step exercises.



**SCANS** (Secretary's Commission on Achieving Necessary Skills)—The U.S. Department of Labor has identified the school-to-careers competencies.

**Marginal Boxes—**These boxes provide additional information about the topic of the lesson.

**Vocabulary—**Terms identified in boldface throughout the lesson and summarized at the end.

**Enhanced Screen Shots—**Screen shots now come to life on each page with color and depth.

# How to Use This Book

**Special Feature Boxes**—These boxes provide interesting additional information about the Internet.

**Summary**—At the end of each lesson, you will find a summary to prepare you to complete the end-of-lesson activities.

**Vocabulary/Review Questions**—Review material at the end of each lesson and each unit enables you to prepare for assessment of the content presented.

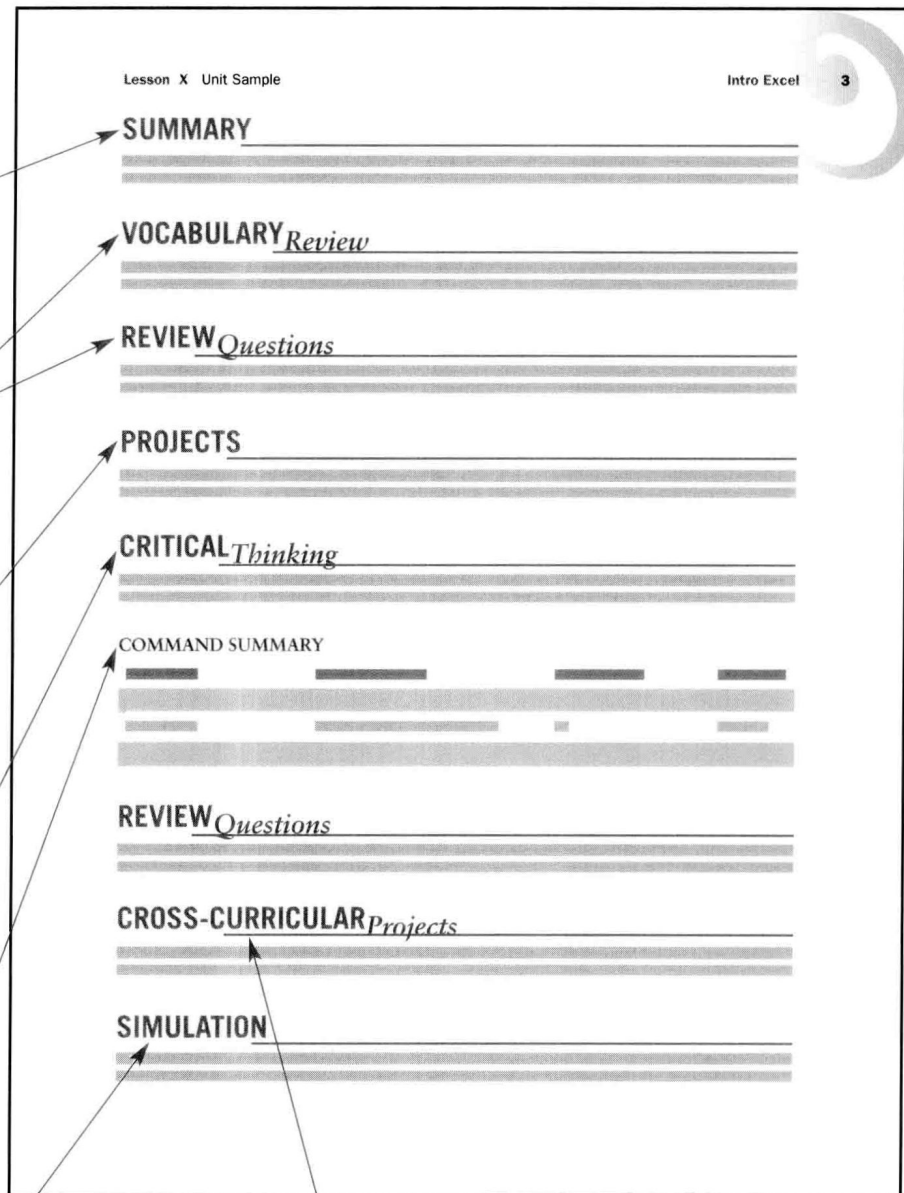
**Lesson Projects**—End-of-lesson hands-on application of what has been learned in the lesson allows you to actually apply the techniques covered.

**Critical Thinking Activities**—Each lesson gives you an opportunity to apply creative analysis and use the Help system to solve problems.

**Command Summary**—At the end of each unit, a command summary is provided for quick reference.

**Simulation**—End-of-unit hands-on jobs provide opportunity for a comprehensive review.

**Cross-Curricular Projects**—End-of-unit projects apply Internet concepts to topics across the curriculum.



# PREFACE

---

Everyone knows how popular the Internet has become, but very few people know why. The technologies that make the Internet work have been in existence for over three decades. So why did the Web suddenly become an overnight success?

The Internet owes its tremendous growth to Hypertext Markup Language, or HTML, and the open-platform environment that the Web creates. This open HTML platform enables programs, such as those written in JavaScript, to run on Macintosh, Windows, Linux, or any other computer systems connected to the Web. HTML and JavaScript make an unbeatable combination for Web site developers.

HTML is a relatively simple method of making documents and online content look great! HTML gives the Web eye-catching appeal. In 1995, many powerful businesses took notice and realized they could advertise, promote their products, or even sell their products online — and the rush to develop online Web sites began.

Despite its many wonderful qualities, however, HTML is a limited language. There are many useful tasks that simply cannot be accomplished by HTML alone, so many professional Web pages make use of supplemental technology. Although there are several different technologies available that can expand the base functionality of HTML, there is no better choice than JavaScript. Like HTML, JavaScript can be created without the use of complex or expensive development software. In fact, JavaScript source code is entered directly into the appropriate HTML Web page file by means of a standard text editor or word processor. But perhaps the most valuable characteristic of the JavaScript language is that it is built upon solid, object-oriented programming concepts. This means that not only can you acquire impressive programming skills quickly, but you can also apply the skills to several other popular programming languages, such as Java, C++, Visual Basic, or even Pascal.

HTML and JavaScript work together. HTML is the backbone of the World Wide Web. It is the primary mechanism used to distribute data across the information superhighway. JavaScript adds interactivity and new capacities beyond the HTML language. Without knowledge of the structure of HTML, writing programs with JavaScript can be confusing. Learning the capabilities and structure of HTML is essential for anyone who would like to create colorful and interactive JavaScript-enabled Web pages like those developed by professional Web designers.

Fortunately, HTML and JavaScript are relatively easy to learn. HTML tags and JavaScript code can be created with a standard text editor or word processor without the purchase of expensive software compilers. These are additional reasons why HTML and JavaScript became popular so quickly.

Course Technology is recognized as a leader in Internet-related instruction. Our mission is to change the way people teach and learn technology. In the last ten years, HTML and supplemental tools such as JavaScript have had the same colossal impact on society as Gutenberg's printing press over 500 years ago. They create a communications environment that you should learn. With this book, you will change how you view the Internet and gain a perspective on how you can contribute in a positive way to the Web.

## Organization and Features of the Text

*HTML and JavaScript BASICS* has been written so that HTML and JavaScript skills can be developed quickly and easily. The Step-by-Step sections are fully illustrated and are easy to follow, allowing you to master the basics.

The text is divided into eight interactive hands-on lessons:

*Lesson 1—Quick HTML Know-How* introduces the basic structure of HTML and will allow you to create your first basic Web page.

*Lesson 2—HTML Organization Techniques* teaches you how to format Web pages and gives you the techniques required to create hypertext links.

*Lesson 3—HTML Power Techniques* teaches you how to insert graphics, integrate tables, and manipulate the size, style, and color of fonts.

*Lesson 4—HTML Structural Design Techniques* teaches you how you can have several Web pages and navigation systems working together.

*Lesson 5—What Is JavaScript?* explains the history and purpose of JavaScript and shows how JavaScript is integrated into HTML Web pages. This lesson also defines central JavaScript terms and describes some of the most basic parts of JavaScript syntax, including keywords, operators, objects, and methods.

*Lesson 6—Using Images with JavaScript* shows you how to use graphic images in conjunction with JavaScript events and functions to add some impressive visual effects to a Web page. These effects include image rollovers, hyperlink rollovers, cycling ad banners, random image displays, and electronic slide shows.

*Lesson 7—Creating Forms with JavaScript* builds on the introduction to forms presented in Lesson 3. It demonstrates how JavaScript can be used to enhance the functionality of HTML forms. This lesson will teach you how to lay out an electronic form, validate user input data, and provide the user with appropriate feedback.

*Lesson 8—Using JavaScript with Frames* teaches you how to create a JavaScript function with a parameter list, enable hyperlinks that affect other frames, enable buttons that affect other frames, and create top-level JavaScript functions. This teaches you how you can have several Web page frames interacting together.

These skills will prove very valuable as you progress to additional Web design tutorials, such as *Web Design BASICS*, or advanced programming tutorials.

*HTML and JavaScript BASICS* steps through the basics of HTML and JavaScript literacy. Each lesson includes the following:

- Lesson objectives to specify learning goals.
- Estimated time of completion.
- Vocabulary to introduce new terms used in the lesson.
- Step-by-Step exercises that teach the basics you need to know.
- Screen illustrations that provide visual reinforcement of what you're learning.
- Sidebars with Internet tips related to the lesson topics.



- Special features such as Internet Milestone and Netiquette which provide information about Net history.
- SCANS correlations.

The end-of-lesson exercises focus on the reinforcement of the skills you have learned in the lesson and provide a comprehensive review of ways you can apply your skills. The end-of-lesson features include the following:

- Lesson summary.
- Vocabulary review of the new terms presented in the lesson.
- Review questions to assess your comprehension of what you have studied.
- Projects for applying the concepts learned in the lesson.
- Critical Thinking activities that require you to analyze and express your own ideas on a variety of HTML and JavaScript challenges.

The unit reviews are designed to evaluate your overall comprehension of the lessons. The unit reviews include the following:

- HTML tags and attributes, command summaries, and JavaScript code summaries.
- Review questions.
- Cross-curricular activities that apply HTML skills in the areas of language arts, science, social studies, and math.
- Special SCANS projects to help you master the skills you have learned.
- Career simulation activities that will help you apply your HTML skills to job-related situations.

A glossary is provided at the end of the text to provide you with definitions for those tricky HTML tags and terms we all need to learn.

# GUIDE FOR USING THIS BOOK

---

## *Software*

- ✓ Internet Explorer or Netscape Navigator to view Web pages.
- ✓ Windows Notepad or Macintosh SimpleText to create HTML documents.

Each of these tools currently comes installed on nearly all standard computers. You may substitute Notepad or SimpleText for a word processor capable of saving text files as .htm or .html documents.

## *Instructor Resource Kit CD-ROM*

The *Instructor Resource Kit* CD-ROM contains a wealth of instructional support that will help an instructor teach *HTML and JavaScript BASICS*. Read and access the *Instructor Resource Kit* with Internet Explorer, just as if you were surfing live on the Internet. Simply open the *begin\_html\_teacher.htm* file using Internet Explorer and click your way through the various sections of the *Instructor Resource Kit*.

These files may be copied from the CD directly to a hard drive on a computer or to a network drive. The resources are also available online at *www.course.com*.

A separate Student Guide can also be accessed online or from the CD. Open the student folder and access the student simulation files by choosing *begin\_html\_student.htm* using Internet Explorer.

## SCANS

The Secretary's Commission on Achieving Necessary Skills (SCANS) from the U.S. Department of Labor was asked to examine the demands of the workplace and whether new learners are capable of meeting those demands. Specifically, the Commission was directed to advise the Secretary on the level of skills required to enter employment.

SCANS workplace competencies and foundation skills have been integrated into *HTML and JavaScript BASICS*. The workplace competencies are identified as 1) ability to use resources, 2) interpersonal skills, 3) ability to work with information, 4) understanding of systems, and 5) knowledge and understanding of technology. The foundation skills are identified as 1) basic communication skills, 2) thinking skills, and 3) personal qualities.

Exercises in which learners must use a number of these SCANS competencies and foundation skills are marked in the text with the SCANS icon.

# TABLE OF CONTENTS

---

iv	How to Use This Book
vi	Preface
ix	Guide for Using This Book



## UNIT 1 HTML BASICS

---

<b>3</b>	<b>Lesson 1: Quick HTML Know-How</b>	<b>59</b>	<b>Lesson 3: HTML Power Techniques</b>
3	Communicating on the Web	59	The Exciting Web
9	Enter Your Mystery Tags the Old-Fashioned Way	63	Downloading and Inserting Graphics
11	Save and View Your HTML Page	69	Pictures of All Sizes
16	Using Headings	73	Orderly Tables
19	Numbered and Bulleted Lists	79	Extraordinary Extras
25	Summary	82	Summary
<b>31</b>	<b>Lesson 2: HTML Organization Techniques</b>	<b>87</b>	<b>Lesson 4: HTML Structural Design Techniques</b>
31	Creating Better Web Pages	87	Creating an HTML Frame Set
36	Lines and Background Colors	90	Creating a Navigation Bar
40	Hyperlinks Inside Your Document	92	Creating a Web Site Welcome Page
44	Creating Hypertext Links to the Web	93	Creating a Nested Frame Set
49	Linking to Pages You've Already Created	95	Creating a Title Bar
52	Coloring Text	97	Using Advanced HTML Options
55	Summary	101	Summary
		105	Unit Review



## UNIT 2 THE EXCITING WORLD OF JAVASCRIPT

---

<b>113</b>	<b>Lesson 5: What Is JavaScript?</b>	<b>135</b>	<b>Lesson 6: Using Images with JavaScript</b>
113	Hello World Wide Web	135	Making Graphic Images Come Alive
116	Enhancing Your Web Page	139	Event Handling Logic
118	Conditional Statements in JavaScript	143	Creating a Cycling Banner
123	Using the JavaScript Alert() Method	147	Displaying Random Images
126	Accessing the Browser Status Line	150	Creating a JavaScript Slide Show
129	Summary	154	Summary

**159 Lesson 7: Creating Forms with JavaScript**

159	Making HTML Forms More Functional
160	Creating a Pizza Order Form
163	Making the Submit Order Button Functional
166	Making the Clear Entries Button Functional
170	Validating Text Fields
174	Validating Radio Buttons
178	Summary

**183 Lesson 8: Using JavaScript with Frames**

183	Advanced JavaScript Programming
186	Adding JavaScript Code to Your Frame Set
190	Creating a Frame-Based Slide Show
193	Making Your Slide Show Buttons Functional
199	Creating a Top-Level JavaScript Function
204	Summary
209	Unit Review

---

**217 Glossary****221 Index**



# HTML BASICS

## **Unit 1**

**Lesson 1** 1.5 hrs.  
**Quick HTML Know-How**

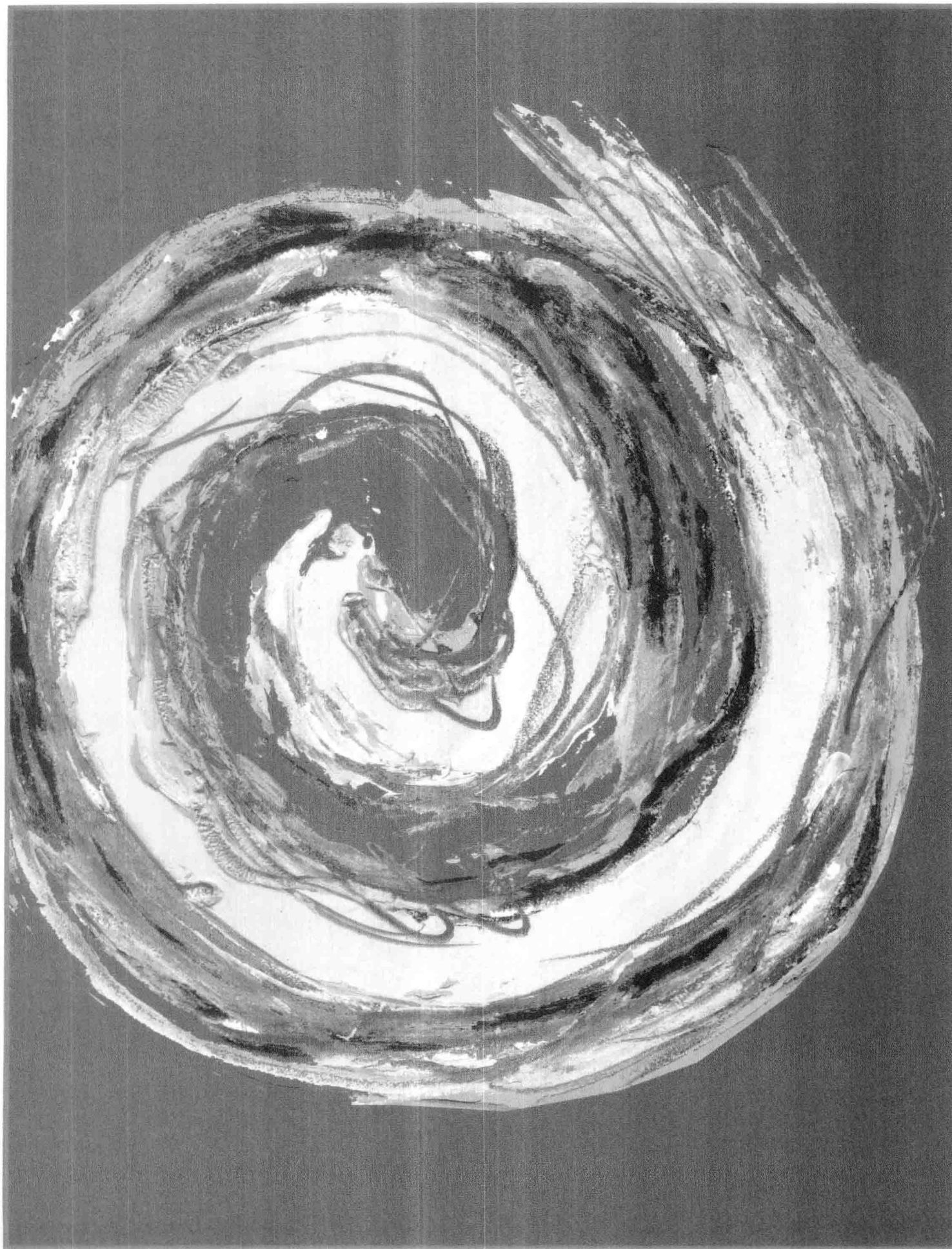
**Lesson 2** 1.5 hrs.  
**HTML Organization Techniques**

**Lesson 3** 1.5 hrs.  
**HTML Power Techniques**

**Lesson 4** 1.5 hrs.  
**HTML Structural Design Techniques**



**Estimated Time for Unit: 6 hours**





# QUICK HTML KNOW-HOW

## OBJECTIVES

Upon completion of this lesson, you should be able to:

- Discover HTML tags.
- Enter starting tags.
- Learn to save correctly.
- Integrate levels of headings into Web pages.
- Create unordered, ordered, and embedded lists.

Estimated Time: 1.5 hrs.

## VOCABULARY

Angle brackets  
Flash  
Home page  
HTML page  
Hypertext Markup Language (HTML)  
Internet Explorer  
Java  
JavaScript  
Mosaic  
Netscape Navigator  
Web browser  
Web page  
Web site  
Welcome page

## Communicating on the Web

Every time you go online and begin clicking links, you'll open up one new **Web page** after another. Web pages can be composed of pictures, text, and multimedia effects. Their purpose is to share information with Web visitors. Web pages are displayed by special software programs called **Web browsers** whose job it is to find and display Web information. The two most popular browsers are *Internet Explorer* and the *Netscape Navigator*.

**Hypertext Markup Language**, or **HTML**, allows you to create Web pages. HTML organizes documents and tells Web browsers how Web pages should look on your computer screen. The colors, pictures, and backgrounds on Web pages are determined by HTML tags.

HTML tags work with any Web browser. If you create a Web page, and do it correctly, your Web browser can read it. In fact, HTML is the official language of the World Wide Web!

There are many other languages used in cyberspace, such as **Java**, a programming language used widely with Internet applications; **Flash**, a high impact multimedia creation tool; and **JavaScript**, a Java-like scripting language used to create miniapplications and multimedia effects. HTML is the most widely used of any of these Web page development tools. HTML creates the foundation upon which these other programs can build.

## How HTML Works

HTML tags work everywhere on the Web. HTML tags display Web pages on Macintosh or Windows computers. They work on Linux and UNIX computers. They even work on Web-enabled cell phones, palm-sized devices, and televisions with a Web device.

HTML tags are so simple that anyone can learn a few essential tags quickly. They usually appear in pairs enclosed in *angle brackets*. These brackets can be found on the comma and period keys on your keyboard. Hold the Shift key and press either of these keys to create an angle bracket.

To more clearly understand how HTML tags work, analyze the following example. If you want to center the title of this book on a Web page, all you need to do is key:

```
<CENTER>HTML and JavaScript BASICS</CENTER>
```

Notice that there is a starting tag, `<CENTER>`, and a closing tag, `</CENTER>`. The only difference between the two tags is a slash ( / ) following the first angle bracket in the closing tag. `<CENTER></CENTER>` form a pair of tags, and if you haven't guessed already, these tags are called center tags. Anything between these tags will be centered on the page. Anything outside of these tags will not be affected by the command. It can't get any simpler!

## Uncover the Page Beneath the Page

The Web is full of Web pages. Some are very interesting, some are very exciting, some are too busy, and some are dull and boring.

It doesn't matter if a page is interesting or dull; all pages have the same characteristics. Let's see what that means.

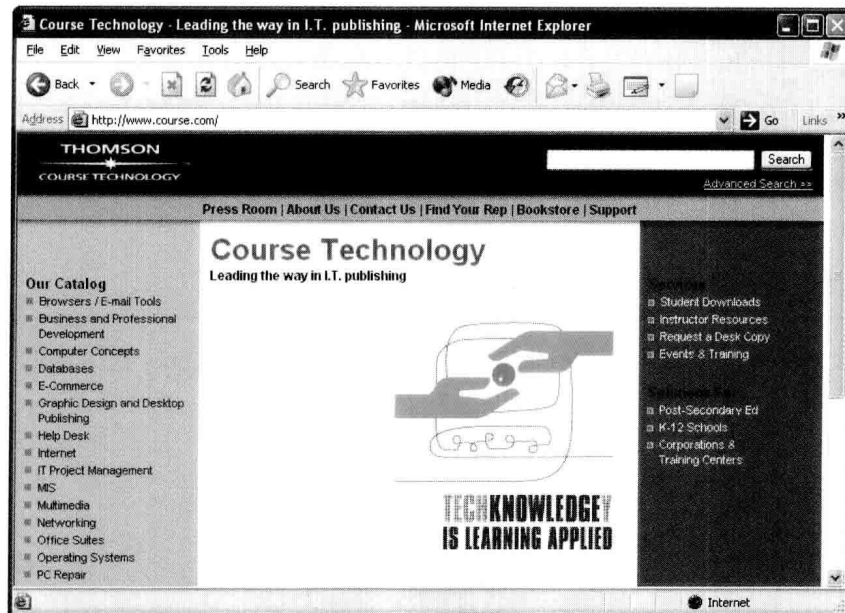


For example, all of the words, pictures, and colors that you see in Figure 1-1A are organized and created by the HTML tags you see in Figure 1-1B.

Figures 1-1A and 1-1B are actually the same page viewed in different ways.

**FIGURE 1-1A**

Course Technology home page at www.course.com



**FIGURE 1-1B**

HTML tags for the home page shown in Figure 1-1A

```

www course[1] - Notepad
File Edit Search Help

<html>
<head>
    <title>Course Technology - Leading the way in I.T. publishing</title>

<link rel="stylesheet" type="text/css" href="/apps/styles/default.css">

<style type="text/css">
    body {

        background-image : url(/images/common/solidbackground.gif);

        background-repeat : no-repeat;
        background-color : #fff;

    }
</style>

<script language="javascript">
    <!--
    var imgCache;
    baseLoc = "/images/common/";
    holding = new Image(); // the image buffer
    imgCache = new Object(); // the "on" state cache, with Image objects as it
properties

    // the list of images names and paths; leave the ";" off the end of the list!
    imgList = "mainNavseries," + baseLoc + "series_over.gif;mainNavsdownload," + baseLoc
+ "studentdownloads_over.gif;mainNaviresource," + baseLoc +
"instructorresources_over.gif;mainNavbookstore," + baseLoc +
"bookstore_over.gif;mainNavsupport," + baseLoc + "support_over.gif;mainNavhome," + baseLoc +
"home_over.gif;mainNavaboutus," + baseLoc + "aboutus_over.gif;mainNavcontact," + baseLoc +
"contact_over.gif;mainNavrepfind," + baseLoc + "findyourrep_over.gif";

    //the rollover function
    function rollImage(which, over) {
        if (document.images) {
            if (over) {
                holding.src = document.images[which].src;
                document.images[which].src = imgCache[which].src;
            } else {

```