

Instructor's Summary for *Murach's JavaScript and jQuery* (3rd Edition)

This summary introduces you to the instructor's materials we've developed for this book and helps you get started using them. At the least, we recommend that you read the topics under "What's included in the instructor's materials" because they not only describe the components but also our underlying instructional philosophy. We also recommend that you read "How to get started" because that provides the installation procedures that you'll need.

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About the structure of the book

To present the JavaScript and jQuery skills that your students need in a manageable progression, this book is divided into three sections that represent the three levels of expertise that your students will develop with this book.

Section 1: JavaScript essentials

This section presents a 7-chapter course in JavaScript that gets your students off to a great start. This section works for programming beginners as well as for students with some programming experience because it lets them set their own pace. If they're beginners, they'll move slowly and do all the exercises. If they have some programming experience, they'll move more quickly and do just the exercises that you assign. When they finish this section, your students will be able to code, test, and debug real-world JavaScript applications of their own.

Section 2: jQuery essentials

This section presents the jQuery skills that every web developer should have. The first chapter in this section presents the core jQuery skills, and the next three chapters focus on effects and animations, forms and data validation, jQuery plugins, and jQuery UI widgets. Then, the last chapter in this section shows your students how to use jQuery for Ajax and JSON so they can get data from a web server and add it to a web page without reloading the entire page.

Section 3: Advanced JavaScript skills

If you have the time and your students are anxious to know more, section 3 presents the advanced JavaScript skills that will take your students to the next level. Here, they'll learn more about using numbers and strings as well as how to use dates. They'll learn how to handle exceptions, how to use regular expressions, and when and how to use browser objects, cookies, web storage, and arrays.

Then, if you still have time, the last two chapters will take your students to the expert level. In chapter 17, they'll learn how to create and use their own objects with object literals, constructors, and factory functions. In chapter 18, they'll learn how to use closures, IIFEs, and the module pattern to make their applications bulletproof. And they'll finish by learning how to use all of these skills as they create their own plugins.

What's especially interesting about section 3 is that all of the examples show how JavaScript and jQuery are used together. Because that's the way applications are coded in the real world, this is clearly the best way to learn advanced JavaScript skills. And yet, we haven't seen another book that combines JavaScript and jQuery in this way.

Our thoughts on using this book

For most courses, *Murach's JavaScript and jQuery* will present more concepts and skills than there is time for. With that in mind, we offer these thoughts on how you can use our book:

- All students need to read the seven chapters in section 1, since that section presents the JavaScript skills that are required for using jQuery effectively.

- After your students read chapter 8 to get going with jQuery (the first chapter in section 2), you can skip to any other chapter in section 2 or go on to section 3. In other words, you don't have to assign all of the chapters in section 2 and you don't have to assign them in sequence.
- The chapters in section 3 move from the simple to the complex, so they are best taught in sequence. If the focus of your course is more on JavaScript than jQuery, you should be sure to complete chapters 13 through 16.
- Chapters 17 and 18 present concepts and skills that are at an expert level, so they may be beyond the scope of most courses. If you have the time for these chapters, though, you'll find that they are a true test of programming aptitude. Regardless, your students who go on to work as web developers will use them for training and reference on the job.

What's included in the student download

To help your students get the most from our book, our website lets them download (1) the book applications, (2) the starting code for the exercises in the book, and (3) *the solutions to the exercises*. Appendix A in the book shows your students how to download and set up these materials on their own systems.

Book applications

All of the applications in this book and some of the extended examples are included in what we refer to as the *book applications*. These are all stored in a folder named *book_apps* when they're downloaded.

Once your students have set up the book applications on their own systems, they can run them to see how they work. They can review all of the code in any application when the book presents only the coding highlights. And they can copy and paste code from the book applications into their own HTML, CSS, and JavaScript files.

Exercise starts

Each chapter in the book ends with exercises to help your students master the skills covered in the chapter. For each exercise, the students start from folders and files that contain some of the routine code that the exercise requires, including the HTML and CSS files. That way, your students get the most JavaScript and jQuery practice in the least time. These exercise starts are stored starting in a top-level folder named *exercises*.

If you review the exercises, you'll see that they guide the students through the process of building a variety of web applications. These exercises also force the students to use all of the critical skills that are needed for website development. In fact, if your students can successfully do all of the exercises, they will be well on their way to a professional level of competence.

Exercise solutions

To help students get over any learning obstacles when they're working on their own, the download also provides the solutions to the exercises in a top-level folder named *solutions*. That way, students can check the solutions to see how something is done whenever they're wasting time on what is likely to be a trivial coding mistake. We think that providing the solutions is the right approach didactically because it helps students learn faster and better.

We realize, however, that this makes it more difficult for an instructor to use the book exercises to test their students. That's why the instructor's materials include a second set of chapter exercises as well as short exercises that can be used for testing the skills of your students. The solutions for these extra exercises and short exercises are included in the instructor's materials, and these solutions are only available to instructors and trainers.

What's included in the instructor's materials

The instructor's materials for *Murach's JavaScript and jQuery (3rd Edition)* will help any college instructor or corporate trainer run an effective course. Besides the materials in the student download, these resources include instructional objectives, test banks, PowerPoint slides, a second set of exercises, and short exercises for quizzes or tests in computer lab. A summary of these materials follows.

Book applications, exercise starts, and solutions

These are the same materials that your students can download from our website. We've included them in the instructor's materials so you can demonstrate and review the book applications and exercise solutions in class, without having to download them yourself.

Objectives

Since we believe that instructional objectives should be the start of any educational methodology, we provide a set of objectives for each chapter in the book. We prepared these objectives based on the principles presented by Robert F. Mager in his book, *Preparing Instructional Objectives*. As a result, our objectives describe the skills that your students or trainees should have when they complete a chapter, and you should be able to test whether they have those skills.

If you review the objectives, you'll see that the first objectives for each chapter are what we refer to as *applied objectives*. These ask the students to apply what they've learned as they develop web pages and websites. These of course are the critical objectives of a web development course, and they are best tested by having the students or trainees do exercises like the ones that we provide.

After the applied objectives for each chapter, you'll find what we refer to as *knowledge objectives*. These objectives define skills like describing and explaining the required concepts, terms, and procedures. These objectives determine whether your students are able to talk intelligently about the topics that are presented. And these objectives can be tested by the test banks that we provide.

To help you get the most from the instructional objectives, we include them at the start of the PowerPoint slides for each chapter. As we see it, if you can convince your students that they only need to have the skills that are described by the objectives, their study becomes more focused and efficient.

Test banks

To test comprehension, you can use the test banks that we've created; there's one for each chapter in the book. We developed these test banks in ExamView, and we provide them in multiple formats: ExamView, Rich Text (RTF), the current Blackboard formats (which can be imported into Canvas or D2L), Respondus, and IMS QTI (which can be used by multiple LMS's). If you're using another LMS we haven't covered, let us know, and we'll see how we can deliver the test banks to you.

Each test bank provides questions that are designed to test the skills described by the objectives for that chapter, and each test question is designed to test the skill described by one objective. This keeps the promise to the students that they will only be expected to have the skills that are described by the objectives.

In our test banks, we use only multiple-choice test questions because they have the highest validity and are the easiest to score. To us, that means that the students or trainees who get the best scores are also the ones with the best knowledge and skills. In contrast, matching and true/false questions have low validity and completion questions are more difficult to score, so we don't use them.

Extra exercises and solutions

Because we provide the solutions for the book exercises in the student download for this book, the instructor's materials include a second set of exercises. You'll find these exercises in a PDF document named *Extra exercises*. The instructor's materials also provide the starting folders and files for these exercises so you can distribute them to your students, as well as the folders and files for the solutions so you can demonstrate and review them in class.

Since both the book exercises and the extra exercises force students to use all of the critical JavaScript and jQuery skills, you can assign either set. The differences are (1) the students will have the solutions for the book exercises, and (2) the extra exercises provide less guidance than the book exercises (which you may prefer). The advantages of using the book exercises are (1) they're included in the book, and (2) the folders and files for the exercises are part of the student download so you don't have to distribute anything.

Because the book exercises are so easy to use, we suggest that you start by assigning them to your students. Then, if you want to test your students by having them do other exercises, you can use the extra exercises. Even if you don't assign any of the extra exercises, you might want to demonstrate some of them and present their code in class so your students can see other applications of the skills they're learning. For your convenience, each extra exercise is encapsulated in a single slide at the end of the PowerPoint slides for each chapter.

Short exercises for quizzes or tests

No matter which set of chapter exercises you assign, be sure to review the short exercises that are in the PDF document named *Short exercises*. Each of these exercises is designed to test just one or two web development skills, and each is designed so it can be done in 30 minutes or less. Since the screen shots for these exercises are presented at the end of the PowerPoint slides for each chapter, you can often assign a short exercise in computer lab just by displaying its PowerPoint slide.

You can use the short exercises to provide quick reinforcement for something that you've just presented or for quick tests. For instance, short exercise 6-1 asks the students to enhance the code in one of the book applications by applying one of the skills

presented in the chapter. And short exercise 13-1 asks the students to improve the validation of one of the book applications.

If your students have the required skills, they should be able to do each of the short exercises in less than 30 minutes, and often in less than 15 minutes. If they don't have the skills, this will help them realize what they need to know. Call it reinforcement, call it classroom stimulation, call it a quiz, or call it a test: We think the short exercises will help make any class more effective.

Case studies and solutions

To provide a more extensive way to test the programming skills of your students, the instructor's materials also include three case studies.

The first case study has students develop an application for placing an order at a coffee shop. Students can complete this case study after they read chapters 1 through 8.

The second case study has students develop an application for a memory game. Before completing this case study, students must read chapters 1 through 16. Note that if you're not teaching the chapters of the book in sequence, students don't need to read chapters 10 or 12 to do this case study, since the skills in these chapters aren't required by the case study.

The third case study has students enhance the memory game that they develop in case study 2. To do this case study, students must read chapters 1 through 18. As with case study 2, though, they can skip chapters 10 and 12 if they aren't reading the chapters in sequence.

The instructor's materials provide a write-up as well as a start and solution for each case study. The starts for the first two case studies consist of the required HTML and CSS, so your students only need to add the JavaScript and jQuery that make the applications work. If your students are required to know HTML and CSS, though, you may choose to have them develop these applications from scratch.

In contrast, the third case study builds on the second case study. So the start for that case study is our solution to the second case study, and you'll want to give your students this application so they all start from the same code.

If you want to make the case studies easier or more difficult for your students to do, you can modify the write-ups that you give them. For example, you can provide more information to make a case study easier, or you can provide less information to make it more difficult.

You can also add or remove specific requirements for a case study depending on what chapters your students have read. For example, if you have your students read chapter 9 before assigning case study 1, you can have them add effects or animations to the application. Conversely, if you want to assign case study 2 before your students have read chapter 9, you can remove the effects that are used by the application. If you do that, of course, you will need to provide your own solutions to the case studies.

PowerPoint slides

The PowerPoint slides present all of the critical information that's presented in the figures of the book. That includes all of the screen shots, diagrams, tables, and code that you may want to review in class. As a result, these slides make it easy for you to review any of the skills that your students have difficulty with.

Beyond the book information, the slides for each chapter start with the instructional objectives so you can review them in class. And they end with the screen shots for the

book exercises, the extra exercises, and the short exercises. That makes it easy for you to answer questions and provide additional information about these exercises.

If you want to modify any of the PowerPoint slides, you should know that we prepared them by abridging and editing the Word text for each figure and copying it into PowerPoint slides. As a result, you can't use PowerPoint to modify the text in the normal way. Instead, you need to double-click on the text for a slide to open it in Word, make modifications to the text in Word, and click outside the text to return to PowerPoint. You can also use PowerPoint in the normal way to add slides, delete slides, or add your own presentation notes to our slides.

How to get started

You can get the instructor's materials for our book as a download from our website or on an Instructor's CD. If you download the materials, you'll need to install them on your computer as described below. If you get the CD, you can do a preliminary review of our materials by opening and reviewing the files it contains. But if you decide to adopt the book, you'll want to install the folders and files on your computer. Once the installation is done, you can do a thorough review of all of the materials that are provided.

In particular, you'll want to run some of the book applications and solutions to the various sets of exercises to see the level of competence that our book develops. You'll also want to click through some of the PowerPoint slides to see how they can help you review and reinforce the information that's presented in the book.

To help you find what you're looking for, the entire file structure for the instructor's materials is shown on the next page.

How to install the folders and files on a Windows system

1. Find the .exe file that you downloaded from our website *or* the file named `Install.exe` that's in the root of the Instructor's CD.
2. Double-click on the .exe file and respond to the dialog boxes that follow. This will install the folders and files onto your C drive in a folder structure that starts with
`murach\javascript_jquery`

How to install the folders and files on a Mac

1. Find the .zip file that you downloaded from our website *or* the file named `MacInstall.zip` that's in the root of the Instructor's CD.
2. Drag the .zip file to wherever you want to store the instructor's files on your Mac.
3. Double-click on the .zip file, and it will unzip the files and folders into a folder structure that starts with
`javascript_jquery`

The student folders and files that get installed

javascript_jquery\ student_download	Contents
book_apps	One folder for each chapter that contains the folders and files for the application or applications that the chapter presents.
exercises	One folder for each chapter that contains the folders and files that are needed for starting each exercise.
solutions	One folder for each chapter that contains the folders and files that provide the solutions for the chapter exercises.

The instructor folders and files that get installed

javascript_jquery\ instructors	Contents
Instructor's summary.pdf	This document in PDF format.
Objectives.pdf	A PDF document that contains the instructional objectives for all chapters.
case_studies\Case studies.pdf case_studies\Case studies.docx	The specifications for three case studies in Word and PDF format, so you can change the specs or hand them out as is.
case_studies\starts	The subfolders and files that the students need for doing the case studies (the start for memory_2 is the solution for memory_1).
case_studies\solutions	The subfolders and files that present the solutions to the case studies.
extra\Extra exercises.pdf	A PDF document that presents a complete set of exercises that are similar to the exercises in the book.
extra\exercises_extra	The subfolders and files that the students need for doing the extra exercises.
extra\solutions_extra	The subfolders and files that present the solutions to the extra exercises.
short\Short exercises.pdf	A PDF document that presents short exercises that take from 5 to 30 minutes each to complete.
short\exercises_short	The subfolders and files that the students need for doing the short exercises.
short\solutions_short	The subfolders and files that present the solutions to the short exercises.
slides	One PowerPoint file for each chapter that starts with the objectives and ends with the screen shots for the book exercises, extra exercises, and short exercises.
test_banks	ExamView, RTF, Blackboard, Respondus, and IMS QTI subfolders that contain one test bank for each chapter.

Technical details that you should be aware of

As we developed the applications and exercises for our JavaScript and jQuery book and its instructor's materials, we discovered three idiosyncrasies that you and your students should be aware of.

Cookie applications stored on a file server won't work in Chrome

If the cookie applications for chapter 15 are stored on a file server, they won't work in Chrome. That's because Chrome disables cookies in websites that are run from the file system (that is, websites with a URL that begins with *file:///*). However, the cookie applications will run in Firefox. This is explained in the book, but it might be overlooked by students.

The bxSlider plugin doesn't work when run from Aptana

Chapter 11 shows how to use the bxSlider plugin to create a carousel. Unfortunately, the carousel doesn't display or work properly when run from Aptana. This is just something to keep in mind because it's easy to forget when all of the other applications run just fine from Aptana.

Web applications stored on a file server may not work properly when run in IE

As we developed the applications for this book, we found that some applications stored on our file server (not our web server) don't work properly when they're run in IE. However, they do work correctly when we run them from our own computers. Since your students should be working in Chrome most of the time and with files on their own computers, this shouldn't be an issue for them. But this is something to be aware of.

Any comments?

If you have any comments about our book or its instructional materials, we would be delighted to hear from you. If you discover any errors in our applications or exercise solutions, we would appreciate hearing about them. And if you want to let us know that you're going to adopt our book for your course, that would make our day.

Just e-mail us at the addresses below. But whether or not we hear from you, we want to thank you for your interest in our JavaScript and jQuery book.

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