

深入浅出HTML5编程 (影印版)

# Head First HTML5 Programming



Learn the secrets of  
the HTML5 guru

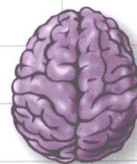


Discover why  
everything your  
friends know  
about video is  
probably wrong

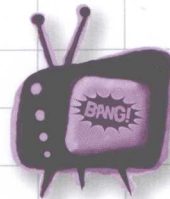
Avoid  
embarrassing  
browser  
support issues



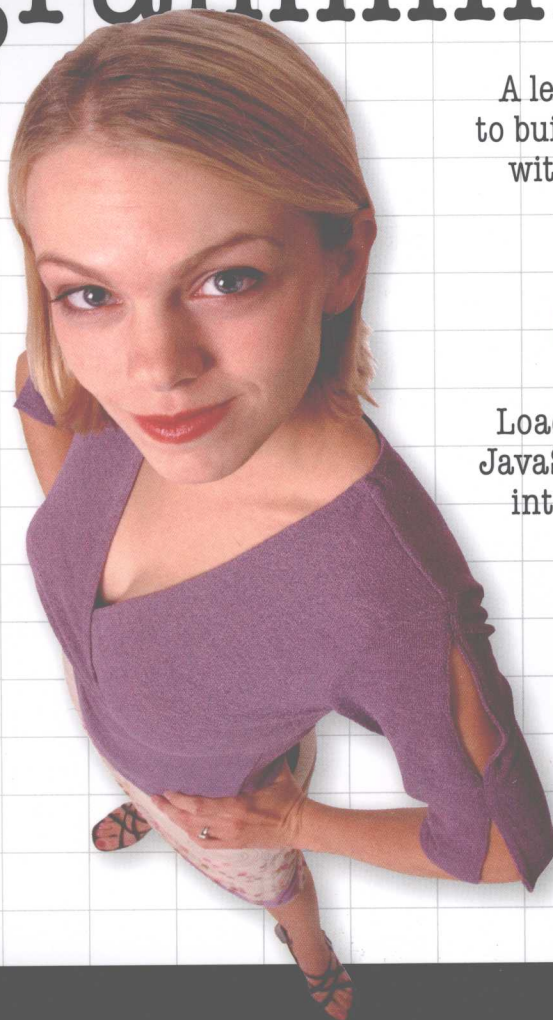
A learner's guide  
to building web apps  
with JavaScript



Load HTML5 and  
JavaScript straight  
into your brain



Watch out for  
common browser  
pitfalls



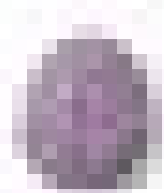
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Eric Freeman & Elisabeth Robson 著

# Head First HTML5 Programming



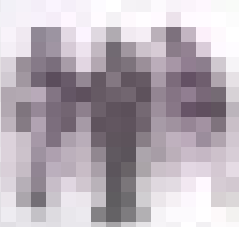
HTML5  
PROGRAMMING



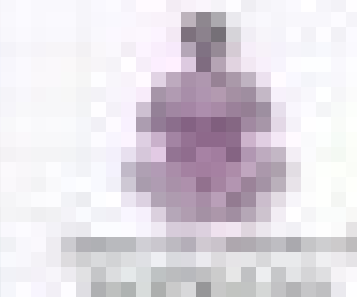
HTML5  
PROGRAMMING



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PROGRAMMING



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HTML5  
PROGRAMMING

# 深入浅出HTML5编程 (影印版)

## Head First HTML5 Programming

Wouldn't it be dreamy if there was an HTML5 book that didn't assume you knew what the DOM, events, and APIs were, all by page three? It's probably just a fantasy...



Eric Freeman  
Elisabeth Robson

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## **Advance Praise for *Head First HTML5 Programming***

“HTML5 is the “future of the web”. How many times have you heard that? If you really want to understand the family of technologies that make up HTML5, read this book! *Head First HTML5 Programming* is the definitive book on HTML5 for everyone from beginners to experienced developers.”

— **Aaron LaBerge, CEO, Fanzter Inc.**

“This book is a rollicking ride through the wild new territory of HTML5, where we are all bound to be battling scorpions for years. It takes you through basic concepts so you understand the purposes of the HTML5 design, and then into each area so you know your way around. Like all Head First books, it replaces dry recitation with lively, memorable, fact-laden bursts of information. I will always have the formal HTML5 spec web site for reference purposes, but I'd rather \*learn\* it lively.”

— **Ken Arnold, Design/Build Hub, Peak Impact, Inc.**

“A must have book on HTML5 which continues on the Head First tradition of being witty, fun, chocked-full of examples and wickedly smart!”

— **Danny Mavromatis, Sr Software Architect, ABC Television Group**

“*Head First HTML5 Programming* does a great job of making sense of many of the key aspects of HTML5 in a fun, easy-to-digest manner. With its highly-visual style and numerous code samples, complex concepts like canvas and asynchronous programming are simplified and illustrated making them straightforward and engaging.”

— **Michael S. Scherotter, Principal Architect Evangelist, Microsoft Corporation**

“HTML5 is a cake with many layers of technologies. *Head First HTML5 Programming* bakes that cake, and then throws it at your face. You will consume deliciousness and rejoice.”

— **Josh Rhoades, co-founder of BrightHalf**

With *Head First HTML5 Programming*, the multiplicity of HTML5 is approached with a multiplicity in the medium that makes the hard work of learning fun.

— **Ward Cunningham, wiki inventor**

“HTML5 is the hottest new technology for website development. Developers far and wide can't wait to put it to use to build flexible, rich media websites that also work great on tablets and smart phones. *Head First HTML5 Programming* is the best and funnest way to feed this exciting new technology to your brain. I highly recommend it!”

— **Marianne Marck, SVP Technology, Blue Nile Inc.**

## **Advance Praise for *Head First HTML5 Programming***

“Straightforward, informative and entertaining, *Head First HTML5 Programming* is a must for anyone wanting to get started with HTML5 or just to refresh their skills. The Head First series helps me to keep my technical skills up to date allowing me to better support my developers and projects.”

— **Todd Guill, Project Manager, AllRecipes.com**

“This ain’t your grandpa’s DHTML! *Head First HTML5 Programming* paints a hopeful and confident picture of the future of the Web through HTML5, while empowering you to code your own ticket there. If you’re seeking a definitive, accessible, and at times pretty funny guidebook to this standard, look no further.”

— **Manny Otto, Web Producer and Creative**

“The authors have hit the nail on the head—JavaScript skills are the key to HTML5. Even if you’ve never written a JavaScript program before, they’ll quickly get you up and running through a series of fun and practical projects.”

— **David Powers, author of *PHP Solutions: Dynamic Web Design Made Easy***

## Praise for other books from Eric Freeman & Elisabeth Robson

“This book’s admirable clarity, humor and substantial doses of clever make it the sort of book that helps even non-programmers think well about problem-solving.”

— **Cory Doctorow, co-editor of *Boing Boing*  
and author of *Down and Out in the Magic Kingdom*  
and *Someone Comes to Town, Someone Leaves Town***

“I feel like a thousand pounds of books have just been lifted off of my head.”

— **Ward Cunningham, inventor of the Wiki  
and founder of the Hillside Group**

“This book is close to perfect, because of the way it combines expertise and readability. It speaks with authority and it reads beautifully. It’s one of the very few software books I’ve ever read that strikes me as indispensable. (I’d put maybe 10 books in this category, at the outside.)”

— **David Gelernter, Professor of Computer Science, Yale University  
and author of *Mirror Worlds* and *Machine Beauty***

“I literally love this book. In fact, I kissed this book in front of my wife.”

— **Satish Kumar**

“Beware. If you’re someone who reads at night before falling asleep, you’ll have to restrict *Head First HTML with CSS & XHTML* to daytime reading. This book wakes up your brain.”

— **Pauline McNamara, Center for New Technologies and Education,  
Fribourg University, Switzerland**

“*Head First HTML with CSS & XHTML* is a thoroughly modern introduction to forward-looking practices in Web page markup and presentation. It correctly anticipates readers’ puzzlements and handles them just in time. The highly graphic and incremental approach precisely mimics the best way to learn this stuff: make a small change and see it in the browser to understand what each new item means.”

— **Danny Goodman, author of *Dynamic HTML: The Definitive Guide***

“The Web would be a much better place if every HTML author started off by reading this book.”

— **L. David Baron, Technical Lead, Layout & CSS, Mozilla Corporation  
<http://dbaron.org/>**

“*Head First HTML with CSS & XHTML* teaches you how to do things right from the beginning without making the whole process seem overwhelming. HTML, when properly explained, is no more complicated than plain English, and they do an excellent job of keeping every concept at eye-level.”

— **Mike Davidson, President & CEO, Newsvine, Inc.**

To Steve Jobs, who hyped HTML5 to the point where this  
book should sell a zillion copies...

And to Steve Jobs, because he's our hero.

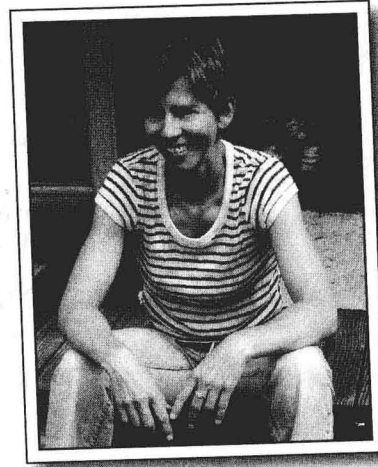


## Authors of Head First HTML5 Programming

✓ Elisabeth Robson



←  
Eric Freeman



**Eric** is described by Head First series co-creator Kathy Sierra as “one of those rare individuals fluent in the language, practice, and culture of multiple domains from hipster hacker, corporate VP, engineer, think tank.”

Professionally, Eric recently ended nearly a decade as a media company executive—having held the position of CTO of Disney Online & Disney.com at The Walt Disney Company. Eric is now devoting his time to WickedlySmart, a startup he co-created with Elisabeth.

By training, Eric is a computer scientist, having studied with industry luminary David Gelernter during his Ph.D. work at Yale University. His dissertation is credited as the seminal work in alternatives to the desktop metaphor, and also as the first implementation of activity streams, a concept he and Dr. Gelernter developed.

In his spare time, Eric is deeply involved with music; you’ll find Eric’s latest project, a collaboration with ambient music pioneer Steve Roach, available on the iPhone app store under the name Immersion Station.

Eric lives with his wife and young daughter on Bainbridge Island. His daughter is a frequent visitor to Eric’s studio, where she loves to turn the knobs of his synths and audio effects. Eric’s also passionate about kids education and nutrition, and looking for ways to improve them.

Write to Eric at [eric@wickedlysmart.com](mailto:eric@wickedlysmart.com) or visit his site at <http://ericfreeman.com>.

**Elisabeth** is a software engineer, writer, and trainer. She has been passionate about technology since her days as a student at Yale University, where she earned a Masters of Science in Computer Science and designed a concurrent, visual programming language and software architecture.

Elisabeth’s been involved with the Internet since the early days; she co-created the award-winning Web site, The Ada Project, one of the first Web sites designed to help women in computer science find career and mentorship information online.

She’s currently co-founder of WickedlySmart, an online education experience centered on web technologies, where she creates books, articles, videos and more. Previously, as Director of Special Projects at O’Reilly Media, Elisabeth produced in-person workshops and online courses on a variety of technical topics and developed her passion for creating learning experiences to help people understand technology. Prior to her work with O’Reilly, Elisabeth spent time spreading fairy dust at The Walt Disney Company, where she led research and development efforts in digital media.

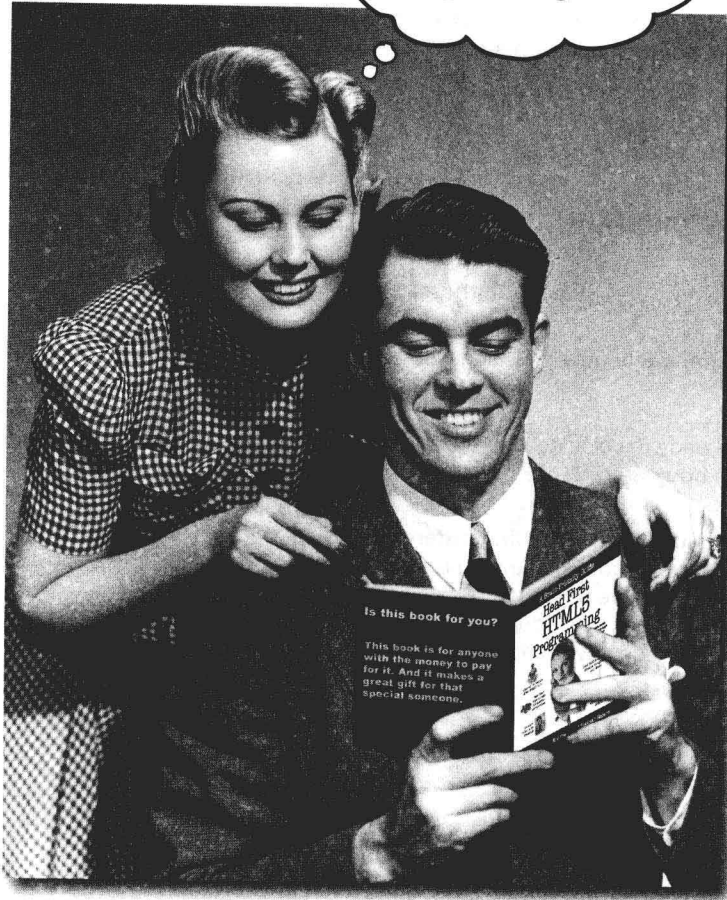
When not in front of her computer, you’ll find Elisabeth hiking, cycling or kayaking in the great outdoors, with her camera nearby, or cooking vegetarian meals.

You can send her email at [beth@wickedlysmart.com](mailto:beth@wickedlysmart.com) or visit her blog at <http://elisabethrobson.com>.

# how to use this book

## Intro

I can't believe they put *that* in an HTML5 programming book!



In this section, we answer the burning question:  
"So why DID they put that in an HTML5 book?"

## Who is this book for?

If you can answer “yes” to all of these:

- ① Do you have a computer with a **web browser** and a **text editor**?
- ② Do you want to **learn, understand, remember, and create** web applications using the best techniques and most recent standards?
- ③ Do you prefer **stimulating dinner party conversation** to **dry, dull, academic lectures**?

this book is for you.

## Who should probably back away from this book?

If you can answer “yes” to any of these:

- ① Are you **completely new** to writing web pages?
- ② Are you already developing web apps and looking for a **reference book** on HTML5?
- ③ Are you **afraid to try something different**? Would you rather have a root canal than mix stripes with plaid? Do you believe that a technical book can't be serious if cheesy 50's educational films and anthropomorphized JavaScript APIs are in it?

Check out Head First HTML with CSS and XHTML for an excellent introduction to web development, and then come back and join us.

this book is not for you.



[Note from marketing: this book is for anyone with a credit card. Cash is nice, too - EdJ]

## We know what you're thinking.

"How can *this* be a serious HTML5 programming book?"

"What's with all the graphics?"

"Can I actually *learn* it this way?"

## And we know what your *brain* is thinking.

Your brain craves novelty. It's always searching, scanning, *waiting* for something unusual. It was built that way, and it helps you stay alive.

So what does your brain do with all the routine, ordinary, normal things you encounter? Everything it *can* to stop them from interfering with the brain's *real* job—recording things that *matter*. It doesn't bother saving the boring things; they never make it past the "this is obviously not important" filter.

How does your brain *know* what's important? Suppose you're out for a day hike and a tiger jumps in front of you. What happens inside your head and body?

Neurons fire. Emotions crank up. *Chemicals surge.*

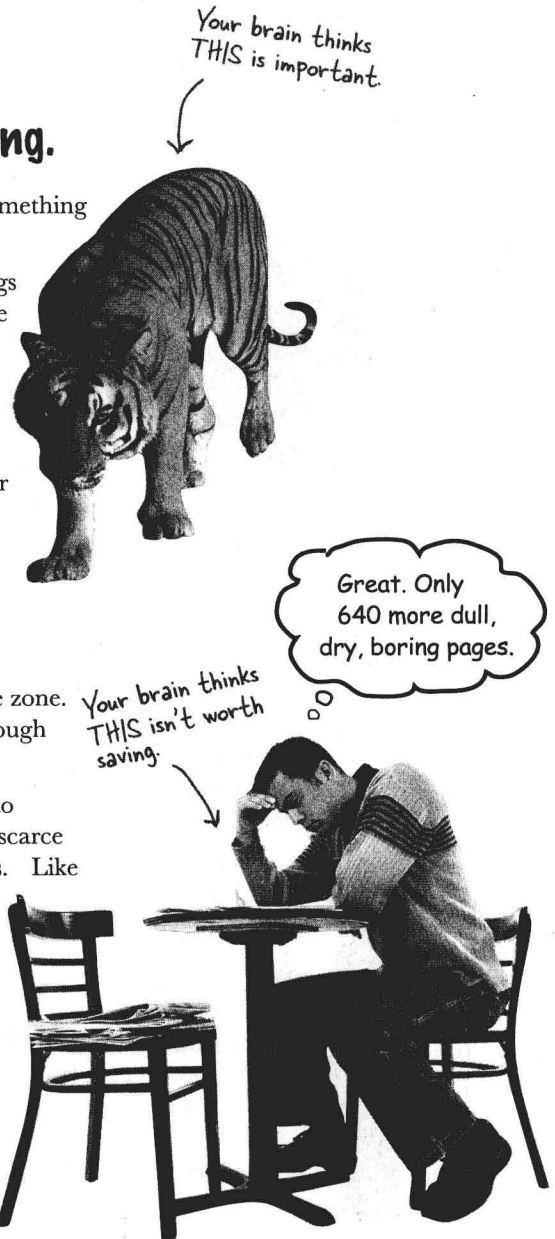
And that's how your brain knows...

### **This must be important! Don't forget it!**

But imagine you're at home, or in a library. It's a safe, warm, tiger-free zone. You're studying. Getting ready for an exam. Or trying to learn some tough technical topic your boss thinks will take a week, ten days at the most.

Just one problem. Your brain's trying to do you a big favor. It's trying to make sure that this *obviously* non-important content doesn't clutter up scarce resources. Resources that are better spent storing the really *big* things. Like tigers. Like the danger of fire. Like how you should never again snowboard in shorts.

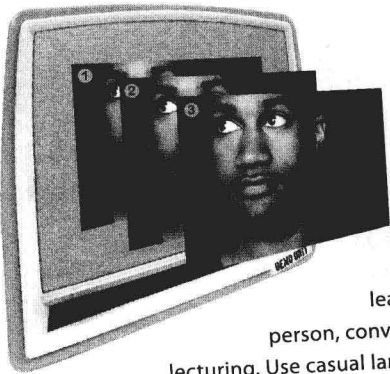
And there's no simple way to tell your brain, "Hey brain, thank you very much, but no matter how dull this book is, and how little I'm registering on the emotional Richter scale right now, I really *do* want you to keep this stuff around."



## We think of a “Head First” reader as a learner.

So what does it take to *learn* something? First, you have to *get* it, then make sure you don't *forget* it. It's not about pushing facts into your head. Based on the latest research in cognitive science, neurobiology, and educational psychology, *learning* takes a lot more than text on a page. We know what turns your brain on.

### Some of the Head First learning principles:



**Make it visual.** Images are far more memorable than words alone, and make learning much more effective (up to 89% improvement in recall and transfer studies). It also makes things more understandable. **Put the words within or near the graphics** they relate to, rather than on the bottom or on another page, and learners will be up to *twice* as likely to solve problems related to the content.

**Use a conversational and personalized style.** In recent studies, students performed up to 40% better on post-learning tests if the content spoke directly to the reader, using a first-person, conversational style rather than taking a formal tone. Tell stories instead of lecturing. Use casual language. Don't take yourself too seriously. Which would you pay more attention to: a stimulating dinner party companion, or a lecture?

**Get the learner to think more deeply.** In other words, unless you actively flex your neurons, nothing much happens in your head. A reader has to be motivated, engaged, curious, and inspired to solve problems, draw conclusions, and generate new knowledge. And for that, you need challenges, exercises, and thought-provoking questions, and activities that involve both sides of the brain and multiple senses.

Time to wake up, there's a click from the user.

I see I have a handler for this, better let him know.

Add Song



**Get—and keep—the reader's attention.** We've all had the “I really want to learn this but I can't stay awake past page one” experience. Your brain pays attention to things that are out of the ordinary, interesting, strange, eye-catching, unexpected. Learning a new, tough, technical topic doesn't have to be boring. Your brain will learn much more quickly if it's not.

**Touch their emotions.** We now know that your ability to remember something is largely dependent on its emotional content. You remember what you care about. You remember when you *feel* something. No, we're not talking heart-wrenching stories about a boy and his dog. We're talking emotions like surprise, curiosity, fun, “what the...?”, and the feeling of “I Rule!” that comes when you solve a puzzle, learn something everybody else thinks is hard, or realize you know something that “I'm more technical than thou” Bob from engineering *doesn't*.

## Metacognition: thinking about thinking

If you really want to learn, and you want to learn more quickly and more deeply, pay attention to how you pay attention. Think about how you think. Learn how you learn.

Most of us did not take courses on metacognition or learning theory when we were growing up. We were *expected* to learn, but rarely *taught* to learn.

But we assume that if you're holding this book, you really want to learn about iPhone development. And you probably don't want to spend a lot of time. And since you're going to build more apps in the future, you need to *remember* what you read. And for that, you've got to *understand* it. To get the most from this book, or *any* book or learning experience, take responsibility for your brain. Your brain on *this* content.

The trick is to get your brain to see the new material you're learning as Really Important. Crucial to your well-being. As important as a tiger. Otherwise, you're in for a constant battle, with your brain doing its best to keep the new content from sticking.

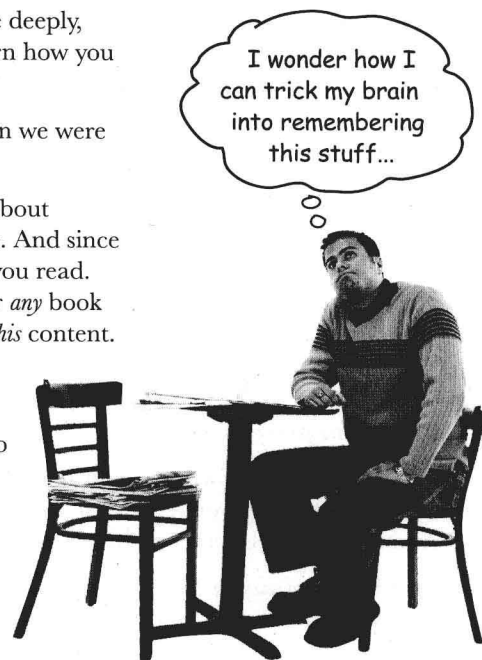
### So just how **DO** you get your brain to think that HTML5 (and JavaScript) is a hungry tiger?

There's the slow, tedious way, or the faster, more effective way. The slow way is about sheer repetition. You obviously know that you *are* able to learn and remember even the dullest of topics if you keep pounding the same thing into your brain. With enough repetition, your brain says, "This doesn't *feel* important to him, but he keeps looking at the same thing *over* and *over* and *over*, so I suppose it must be."

The faster way is to do **anything that increases brain activity**, especially different *types* of brain activity. The things on the previous page are a big part of the solution, and they're all things that have been proven to help your brain work in your favor. For example, studies show that putting words *within* the pictures they describe (as opposed to somewhere else in the page, like a caption or in the body text) causes your brain to try to make sense of how the words and picture relate, and this causes more neurons to fire. More neurons firing = more chances for your brain to *get* that this is something worth paying attention to, and possibly recording.

A conversational style helps because people tend to pay more attention when they perceive that they're in a conversation, since they're expected to follow along and hold up their end. The amazing thing is, your brain doesn't necessarily *care* that the "conversation" is between you and a book! On the other hand, if the writing style is formal and dry, your brain perceives it the same way you experience being lectured to while sitting in a roomful of passive attendees. No need to stay awake.

But pictures and conversational style are just the beginning.



## Here's what WE did:

We used **pictures**, because your brain is tuned for visuals, not text. As far as your brain's concerned, a picture really *is* worth a thousand words. And when text and pictures work together, we embedded the text *in* the pictures because your brain works more effectively when the text is *within* the thing the text refers to, as opposed to in a caption or buried in the text somewhere.

We used **redundancy**, saying the same thing in *different* ways and with different media types, and *multiple senses*, to increase the chance that the content gets coded into more than one area of your brain.

We used concepts and pictures in **unexpected** ways because your brain is tuned for novelty, and we used pictures and ideas with at least *some emotional content*, because your brain is tuned to pay attention to the biochemistry of emotions. That which causes you to *feel* something is more likely to be remembered, even if that feeling is nothing more than a little **humor, surprise, or interest**.

We used a personalized, **conversational style**, because your brain is tuned to pay more attention when it believes you're in a conversation than if it thinks you're passively listening to a presentation. Your brain does this even when you're *reading*.

We included loads of **activities**, because your brain is tuned to learn and remember more when you **do** things than when you *read* about things. And we made the exercises challenging-yet-do-able, because that's what most people prefer.

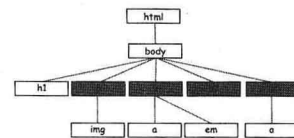
We used **multiple learning styles**, because *you* might prefer step-by-step procedures, while someone else wants to understand the big picture first, and someone else just wants to see an example. But regardless of your own learning preference, *everyone* benefits from seeing the same content represented in multiple ways.

We include content for **both sides of your brain**, because the more of your brain you engage, the more likely you are to learn and remember, and the longer you can stay focused. Since working one side of the brain often means giving the other side a chance to rest, you can be more productive at learning for a longer period of time.

And we included **stories** and exercises that present **more than one point of view**, because your brain is tuned to learn more deeply when it's forced to make evaluations and judgments.

We included **challenges**, with exercises, and by asking **questions** that don't always have a straight answer, because your brain is tuned to learn and remember when it has to *work* at something. Think about it—you can't get your *body* in shape just by *watching* people at the gym. But we did our best to make sure that when you're working hard, it's on the *right* things. That **you're not spending one extra dendrite** processing a hard-to-understand example, or parsing difficult, jargon-laden, or overly terse text.

We used **people**. In stories, examples, pictures, etc., because, well, because *you're* a person. And your brain pays more attention to *people* than it does to *things*.



**BE the Browser**

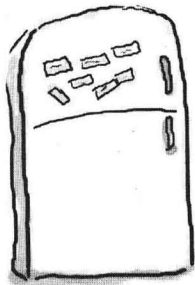


**BULLET POINTS**

**Puzzles**







## Here's what YOU can do to bend your brain into submission

So, we did our part. The rest is up to you. These tips are a starting point; listen to your brain and figure out what works for you and what doesn't. Try new things.

Cut this out and stick it on your refrigerator.

### 1 Slow down. The more you understand, the less you have to memorize.

Don't just *read*. Stop and think. When the book asks you a question, don't just skip to the answer. Imagine that someone really *is* asking the question. The more deeply you force your brain to think, the better chance you have of learning and remembering.

### 2 Do the exercises. Write your own notes.

We put them in, but if we did them for you, that would be like having someone else do your workouts for you. And don't just *look* at the exercises. **Use a pencil.** There's plenty of evidence that physical activity *while* learning can increase the learning.

### 3 Read the "There are No Dumb Questions"

That means all of them. They're not optional sidebars—***they're part of the core content!*** Don't skip them.

### 4 Make this the last thing you read before bed. Or at least the last challenging thing.

Part of the learning (especially the transfer to long-term memory) happens *after* you put the book down. Your brain needs time on its own, to do more processing. If you put in something new during that processing time, some of what you just learned will be lost.

### 5 Drink water. Lots of it.

Your brain works best in a nice bath of fluid. Dehydration (which can happen before you ever feel thirsty) decreases cognitive function.

### 6 Talk about it. Out loud.

Speaking activates a different part of the brain. If you're trying to understand something, or increase your chance of remembering it later, say it out loud. Better still, try to explain it out loud to someone else. You'll learn more quickly, and you might uncover ideas you hadn't known were there when you were reading about it.

### 7 Listen to your brain.

Pay attention to whether your brain is getting overloaded. If you find yourself starting to skim the surface or forget what you just read, it's time for a break. Once you go past a certain point, you won't learn faster by trying to shove more in, and you might even hurt the process.

### 8 Feel something!

Your brain needs to know that this *matters*. Get involved with the stories. Make up your own captions for the photos. Groaning over a bad joke is *still* better than feeling nothing at all.

### 9 Create something!

Apply this to your daily work; use what you are learning to make decisions on your projects. Just do something to get some experience beyond the exercises and activities in this book. All you need is a pencil and a problem to solve... a problem that might benefit from using the tools and techniques you're studying for the exam.



## Read me

This is a learning experience, not a reference book. We deliberately stripped out everything that might get in the way of learning whatever it is we're working on at that point in the book. And the first time through, you need to begin at the beginning, because the book makes assumptions about what you've already seen and learned.

### **We expect you to know HTML and CSS.**

If you don't know HTML markup (that is, all about HTML documents including elements, attributes, property structure, structure versus presentation), then pick up a copy of *Head First HTML with CSS & XHTML* before starting this book. Otherwise, you should be good to go.

### **Some experience helps, but we don't expect you to know JavaScript.**

If you've got any programming or scripting in your background (even if it isn't JavaScript), it's going to help you. But, we don't expect you to know JavaScript going into this book; in fact, this book is designed to follow *Head First HTML with CSS & XHTML*, which has no scripting in it.

### **We encourage you to use more than one browser with this book.**

We encourage you to test the pages and web applications in this book with several browsers. This will give you experience in seeing the differences among browsers and in creating pages that work well in a variety of browsers. We most highly recommend Google Chrome and Apple Safari for use with this book as they are, in general, the most up-to-date with the current standards. But we do recommend you also try the most recent versions of the other major browsers including Internet Explorer, Firefox and Opera, as well as mobile browsers on devices with iOS and Android.

### **The activities are NOT optional.**

The exercises and activities are not add-ons; they're part of the core content of the book. Some of them are to help with memory, some are for understanding, and some will help you apply what you've learned. ***Don't skip the exercises.*** Even crossword puzzles are important—they'll help get concepts into your brain. But more importantly, they're good for giving your brain a chance to think about the words and terms you've been learning in a different context.

### **The redundancy is intentional and important.**

One distinct difference in a Head First book is that we want you to *really* get it. And we want you to finish the book remembering what you've learned. Most reference books don't have retention and recall as a goal, but this book is about *learning*, so you'll see some of the same concepts come up more than once.

### **The Brain Power exercises don't have answers.**

For some of them, there is no right answer, and for others, part of the learning experience of the Brain Power activities is for you to decide if and when your answers are right. In some of the Brain Power exercises, you will find hints to point you in the right direction.