

Apple Pro Training Series

Logic Pro X

Professional Audio Production

David Nahmani

Lesson and media files available for download



Apple Pro Training Series

Logic Pro X

David Nahmani



Apple Pro Training Series: Logic Pro X
David Nahmani
Copyright © 2014 by David Nahmani
Updated for Logic Pro X v10.0.6 February 6, 2014

Peachpit Press
www.peachpit.com

To report errors, please send a note to errata@peachpit.com.
Peachpit Press is a division of Pearson Education.

Apple Series Editor: Lisa McClain
Editor: Bob Lindstrom
Production Coordinator: Kim Elmore, Happenstance Type-O-Rama
Technical Editor: Robert Brock
Apple Project Manager: Shane Ross
Apple Reviewer: Shane Ross
Copy Editor: Darren Meiss
Technical Reviewer: John Moores
Proofreader: Darren Meiss
Composer: Cody Gates, Happenstance Type-O-Rama
Indexer: Jack Lewis
Cover Illustration: Paul Mavrides
Cover Production: Cody Gates, Happenstance Type-O-Rama

Notice of Rights

All rights reserved. No part of this book may be reproduced or transmitted in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. For information on getting permission for reprints and excerpts, contact permissions@peachpit.com.

BIG © 2013 composed and produced by Distant Cousins used with permission. For more on Distant Cousins, visit www.soundcloud.com/distant_cousins; [Facebook.com/3Distantcousins](https://www.facebook.com/3Distantcousins); @3Distantcousins. All rights reserved.

Little Lady © 2013 composed and produced by Matt McJunkins and David Nahmani; drums performed by Jeff Friedl, bass guitar performed by Matt McJunkins, guitars performed by David Nahmani. All rights reserved.

Raise It Up © 2012 composed and produced by Distant Cousins used with permission. Available on iTunes. For more on Distant Cousins, visit www.soundcloud.com/distant_cousins; [Facebook.com/3Distantcousins](https://www.facebook.com/3Distantcousins); @3Distantcousins. All rights reserved.

Alliance © 2013 written and produced by Tim Butler and Tom Parry used with permission. For more on Televisor, visit www.televisormusic.com. All rights reserved.

The projects and footage supplied with this book may only be used for educational purposes in association with the lessons included. Any other use, including but not limited to incorporating footage into another project, duplicating or distributing footage, is expressly forbidden and requires explicit permission from the copyright holders listed above.

Notice of Liability

The information in this book is distributed on an “As Is” basis, without warranty. While every precaution has been taken in the preparation of the book, neither the author nor Peachpit Press shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the instructions contained in this book or by the computer software and hardware products described in it.

Trademarks

Many of the designations used by manufacturers and sellers to distinguish their products are claimed as trademarks. Where those designations appear in this book, and Peachpit was aware of a trademark claim, the designations appear as requested by the owner of the trademark. All other product names and services identified throughout this book are used in editorial fashion only and for the benefit of such companies with no intention of infringement of the trademark. No such use, or the use of any trade name, is intended to convey endorsement or other affiliation with this book.

ISBN 13: 978-0-321-96759-6

ISBN 10: 0-321-96759-3

9 8 7 6 5 4 3 2

Printed and bound in the United States of America

Acknowledgments My deepest gratitude to the artists and producers who agreed to provide their Logic sessions for this book: Distant Cousins for their songs “Raise It Up” and “BIG,” Televisor for their song “Alliance,” and Matt McJunkins for helping me write and produce the song “Little Lady.”



Contents at a Glance

Getting Started	xi
Exploring the Interface and Working with Real Instruments	
Lesson 1 Make Music with Logic Now!	3
Lesson 2 Recording Audio	59
Lesson 3 Editing Audio	103
Working with Virtual Instruments	
Lesson 4 Produce a Virtual Drum Track	145
Lesson 5 Recording MIDI and Using Controllers	185
Lesson 6 Creating and Editing MIDI	247
Building a Song	
Lesson 7 Editing Pitch and Time	297
Lesson 8 Editing an Arrangement	343
Mixing and Automating a Song	
Lesson 9 Mixing	385
Lesson 10 Automating the Mix	435
Appendix A Using External MIDI Devices	469
Appendix B Keyboard Shortcuts (Default for U.S. Keyboard)	485
Glossary	491
Index	503

Table of Contents

Getting Started.....	xi
----------------------	----

Exploring the Interface and Working with Real Instruments

Lesson 1	Make Music with Logic Now!	3
	Creating a Logic Pro X Project.....	3
	Exploring the Interface.....	7
	Navigating the Project	15
	Build Up the Arrangement	33
	Mixing the Song	40
	Mixing Down to a Stereo File.....	51
	Lesson Review	54
Lesson 2	Recording Audio	59
	Setting Up Digital Audio Recording	59
	Recording a Single Track.....	63
	Recording Additional Takes	74
	Punching In and Out	80
	Changing Recording Settings	89
	Deleting Unused Audio Files	98
	Lesson Review	100
Lesson 3	Editing Audio	103
	Assigning Mouse Tools	104
	Editing Regions in the Workspace	108
	Comping Takes	111
	Adding Fades and Crossfades.....	118

Editing Regions in the Audio Track Editor.....	125
Editing Files in the Audio File Editor	131
Aligning Audio	134
Lesson Review	140

Working with Virtual Instruments

Lesson 4	Produce a Virtual Drum Track	145
	Creating a Drummer Track	146
	Arranging the Drum Track	158
	Customizing the Drum Kit	173
	Lesson Review	182
Lesson 5	Recording MIDI and Using Controllers.....	185
	Using a Patch from the Library.....	186
	Recording MIDI	191
	Correcting the Timing of a MIDI Recording	194
	Joining Recordings into a MIDI Region	197
	Recording MIDI Takes.....	202
	Punching In and Out	205
	Creating a Layered Sound Patch.....	208
	Creating a Split Keyboard Patch.....	212
	Mapping Smart Controls to Patch Parameters.....	215
	Controlling Logic from an iPad Using Logic Remote.....	223
	Using Step Input Recording.....	232
	Processing MIDI Notes with MIDI Plug-Ins	236
	Lesson Review	244
Lesson 6	Creating and Editing MIDI	247
	Creating MIDI Notes in the Piano Roll Editor.....	248
	Creating MIDI Notes in the Score Editor	261
	Importing a MIDI File	271
	Editing MIDI Data in the Event List	273
	Creating and Editing MIDI Continuous Controllers	280
	Lesson Review	292

Building a Song

Lesson 7	Editing Pitch and Time	297
	Setting a Project Tempo by Detecting the Tempo of a Recording	298
	Using and Creating Apple Loops	301
	Creating Tempo Changes and Tempo Curves	308
	Adding a Turntable or Tape Slow-Down Effect	313
	Making One Track Follow the Groove of Another Track	315
	Change the Playback Pitch and Speed with Varispeed	318
	Editing the Timing of an Audio Region	321
	Tuning Vocal Recordings	330
	Lesson Review	339
Lesson 8	Editing an Arrangement	343
	Previewing the Song	343
	Copying Material to Fill in Parts	346
	Rendering Multiple Regions	357
	Adding and Deleting Sections	360
	Cutting Regions to Remove Silence or Noise	370
	Lesson Review	379

Mixing and Automating a Song

Lesson 9	Mixing	385
	Organizing Windows and Tracks	386
	Using the Amp Designer	394
	Adjusting Levels and Pan	401
	Submixing Tracks and Processing the Submix	403
	Using an EQ Plug-In	410
	Using Delay and Reverberation	416
	Using Dynamic Processing Plug-ins	424
	Using a Few Tips and Tricks	431
	Lesson Review	432

Lesson 10	Automating the Mix	435
	Creating and Editing Offline Automation.....	436
	Recording Live Automation	448
	Using MIDI Controllers.....	458
	Bouncing the Mix.....	462
	Lesson Review	465
Appendix A	Using External MIDI Devices	469
	Using the External Instrument Plug-in	470
	Configuring MIDI Hardware	472
Appendix B	Keyboard Shortcuts	
	(Default for U.S. Keyboard)	485
	Panels and Windows	485
	Navigation and Playback	486
	Zooming	487
	Channel Strip, Track, and Region Operations	487
	Project Audio Browser	489
	Piano Roll Editor.....	489
	Finder	489
	Glossary.....	491
	Index	503



Getting Started

Welcome to the official Apple Pro Training Series course for Logic Pro X. This book is a comprehensive introduction to professional music production with Logic Pro X. It uses real-world music and hands-on exercises to teach you how to record, edit, arrange, mix, produce, and polish audio and MIDI files in a professional workflow. So let's get started!

The Methodology

This book takes a hands-on approach to learning the software, so you'll be working through the project files and media you download from www.peach-pit.com. It's divided into lessons that introduce the interface elements and ways of working with them, building progressively until you can comfortably grasp the entire application and its standard workflows.

Each lesson in this book is designed to support the concepts learned in the preceding lesson, and first-time readers should go through the book from start to finish. However each lesson is self-contained, so when you need to review a topic, you can quickly jump to any lesson.

The book is designed to guide you through the music production process as it teaches Logic. The lessons are organized into four sections.

Lessons 1–3: Exploring the Interface and Working with Real Instruments

In this section, you'll explore the fundamentals of Logic Pro X, and learn to record and edit audio.

Lesson 1 starts you out with an overview of the entire process. You'll become familiar with the interface and the various ways to navigate a project; use Apple loops to build a song from scratch; and then arrange, mix, and export the song to an MP3 file.

Lessons 2 and 3 dive deeper into typical situations you may encounter when recording from microphones or other audio sources. You'll edit recordings to select the best portions of multiple takes, remove clicks, align recordings, and even reverse a recording to create a special effect.

Lessons 4–6: Working with Virtual Instruments

Lesson 4 describes how to produce a virtual drummer performance using the new Drummer and Drum Kit Designer features. You will choose the right drummer for the project, swap a drum kit with the kit of another drummer, edit the patterns, change which kit elements the drummer plays, shape an interpretation, and precisely control where fills are placed.

Lessons 5 and 6 immerse you in using software instruments. After choosing virtual instruments and recording MIDI performances, you'll map Smart Controls to various plug-ins and assign them to your MIDI controller. Using the free Logic Remote app, you'll control Logic from your iPad, and then create virtual performances in MIDI editors using your mouse or your MIDI keyboard.

Lessons 7–8: Building a Song

In Lessons 7 and 8, you'll apply Flex editing to precisely adjust the timing and pitch of notes in an audio recording. Varispeed will allow you to work with your project at different tempos. You'll add tempo changes and tempo curves to a project, match the tempos of multiple tracks, and make a track follow the groove of another track. Also covered are tuning a vocal recording, editing a project's regions in the workspace to complete an arrangement, and adding and removing sections of a project.

Lessons 9–10: Mixing and Automating a Song

Lessons 9 and 10 instruct you in mixing audio and MIDI files into a final project: adding audio effects, adjusting levels, panning, EQing, adding delay and reverb, automating the

mix by creating automation curves on your screen, and altering parameter values in real time with the mouse or a MIDI controller.

Appendix A describes how to use external MIDI devices, and Appendix B lists a wealth of useful keyboard shortcuts.

System Requirements

Before using *Apple Pro Training Series: Logic Pro X*, you should have a working knowledge of your Mac and the Mac OS X operating system. Make sure that you know how to use the mouse and standard menus and commands; and also how to open, save, and close files. If you need to review these techniques, see the printed or online documentation included with your system.

Logic Pro X and the lessons in this book require the following system resources:

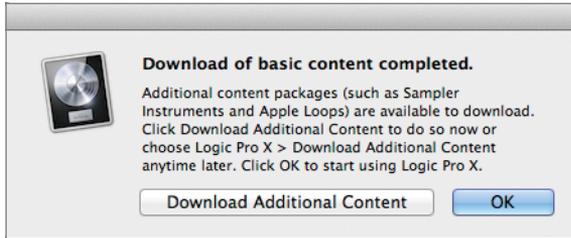
- ▶ Mac computer with an Intel processor, including:
 - 4 GB of RAM
 - Display with 1280 x 768 or higher resolution
 - Mac OS X v10.8.4 or later
 - Minimum 40 GB of disk space to install Logic Pro X and its default media content
 - High-speed Internet connection for installation
- ▶ A USB-connected MIDI keyboard (or compatible MIDI keyboard and interface) to play software instruments
- ▶ A low-latency multi-I/O audio interface (highly recommended for audio recording)
- ▶ An iPad (optional, for controlling Logic using the Logic Remote iPad app)

Preparing Your Logic Workstation

The exercises in this book require that you install Logic Pro X along with its default media content. If you have not yet installed Logic, you may purchase it from the App Store. When your purchase is completed, Logic Pro X will automatically be installed on your hard drive.

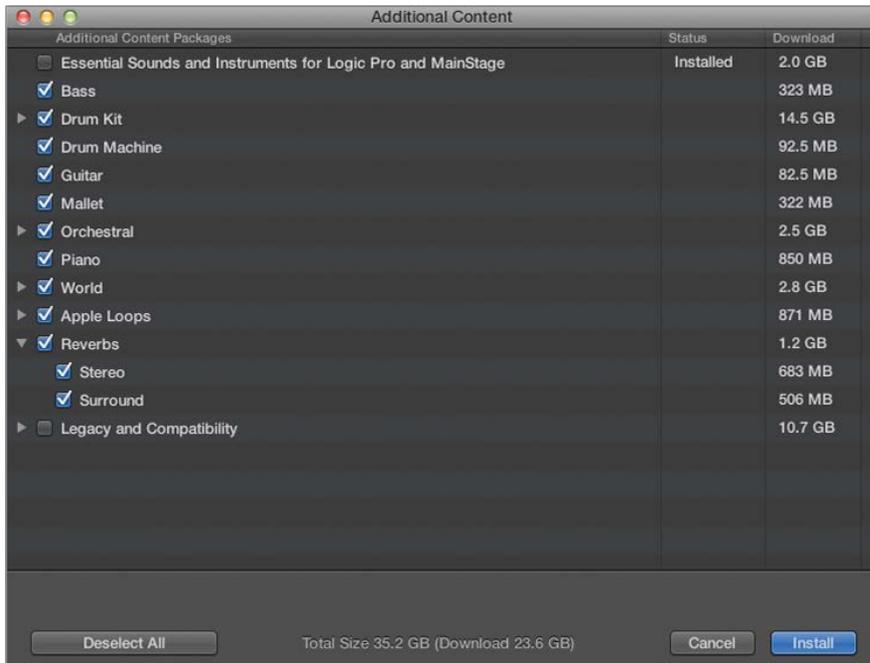
All the instructions and descriptions in this book assume that you installed Logic Pro X on a Mac without any legacy Logic media, and that you downloaded all the additional media except for the Legacy and Compatibility content.

When you first open Logic Pro X, the app will automatically download and install about 2 GB of essential content. An alert then offers to download additional media content.



Click Download Additional Content to make sure that you install all the Logic Pro X media content. After you click Download Additional Content, the Additional Content window opens. Click the Select All Uninstalled button at the bottom left, and click the “Legacy and Compatibility” checkbox twice to deselect it. Depending on the speed of your Internet connection, the download process may take several hours.

NOTE ► If you have already installed Logic Pro X but did not install the additional content, choose Logic Pro X > Download Additional Content, click Select All Uninstalled (make sure the Legacy and Compatibility content is not selected) and click Install.



NOTE ► If you have previously installed the Legacy and Compatibility content, or if you have earlier versions of Logic installed on your Mac, you may not always see the same results as those shown in the book, especially when viewing the Library, the Loop Browser, or the plug-in settings menus.

Downloading and Using the Logic Lesson Files

The downloadable content for *Apple Pro Training Series: Logic Pro X* includes the project files you will use for each lesson, as well as media files that contain the audio and MIDI content you will need for each exercise. After you save the files to your hard disk, each lesson will instruct you in their use.

To download these files, you must have your guide's access code—provided on a card in the back of the printed editions of this book or on the “Where Are the Lesson Files?” page in electronic editions of this book. When you have the code:

- 1** Go to www.peachpit.com/redeem, and enter your access code.
- 2** Click Redeem Code, and sign in or create a Peachpit.com account.
- 3** Locate the downloadable files on your Account page under the Lesson & Update Files tab.
- 4** Click the lesson file link and download the file to your Mac desktop.

NOTE ► If you purchase or redeem a code for the electronic version of this guide directly from Peachpit, the lesson file link will automatically appear on the Lesson & Update Files tab without the need to redeem an additional code.

- 5** After downloading the file to your Mac desktop, you'll need to unzip the file to access a folder titled Logic Pro X Files, which you will save to your Mac desktop.

Logic Pro X Files contains two subfolders, Lessons and Media, that contain the working files for this course. Make sure you keep these two folders together in the Logic Pro X Files folder on your hard disk. If you do so, your Mac should be able to maintain the original links between the lessons and media files. Each lesson explains which files to open for that lesson's exercises.

Using Default Preferences and Selecting the Advanced Tools

All the instructions and descriptions in this book assume that you are using the default preferences (unless instructed to change them) and the initialized key command preset for a U.S. keyboard. At the beginning of Lesson 1, you will be instructed how to show advanced tools and select all additional options.

If you have changed some of your Logic Pro X preferences, you may not realize the same results as described in the exercises. To make sure that you can follow along with this book, it's best to revert to the initial set of Logic preferences before you start the lessons. Keep in mind, however, that when you initialize preferences, you lose your custom settings, and later you may want to reset your favorite preferences manually.

- 1 Choose Logic Pro X > Preferences > Advanced Tools.
- 2 Under Additional Options, select Audio, Surround, MIDI, Control Surfaces, Score, and Advanced Editing, and then close the preferences window.
- 3 Choose Logic Pro X > Preferences > Initialize All Except Key Commands.

A confirmation message appears.

- 4 Click Initialize.

Your preferences are initialized to their default states.

If you're jumping ahead to a lesson other than Lesson 1, make sure that you select all additional options as detailed in step 2.

Using the U.S. Key Command Preset

This book assumes that you are using the default initialized key command preset for a U.S. keyboard. So, you may find that some of the key commands in your Logic installation do not function as they are described in this book.

If at any point, you find that the key commands don't respond as described (for example, T doesn't open the Toolbox as explained in the first exercise of Lesson 3), then you should perform the following steps to back up your current key command set and replace it with the key command preset included with the lesson files downloaded from www.peachpit.com.

- 1 Choose Logic Pro X > Key Commands > Edit.

First, it is important to back up your current key commands, particularly if you've already created a set of custom key commands and want to restore it after you've finished working with this book.

- 2 In the Key Commands window, choose Options > Export Key Commands.



A Save As dialog opens.

- 3 In the Save As dialog, keep the default Key Commands location in the Save As field, and name your preset *My shortcuts*.

Your custom shortcuts can now be recalled as any other key command preset.

- 4 In the Key Commands window, choose Options > Preset to open the menu.



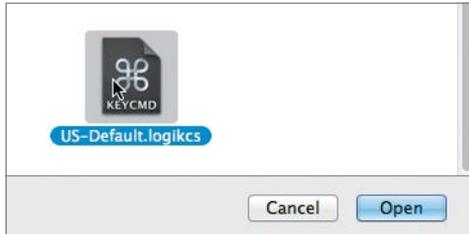
Your new preset appears at the bottom of the Presets sub-menu.

Now let's import the key commands that you downloaded with your lesson files. The next steps assume that you've completed the steps in the Getting Started section, "Downloading and Using the Logic Lesson Files," and that the Logic Pro X folder you downloaded from peachpit.com is on your desktop.

- 5 In the Key Commands window, choose Options > Import Key Commands.

An Open dialog appears.

- 6 In the Open dialog, click the Desktop icon in the sidebar (or press Command-D). Open the Logic Pro X Files folder, and inside the Media folder, open US-Defaults.logikcs.



Logic will now respond to the key commands as described in this book.

Screen Resolution

Depending on your display resolution, some of the project files may appear different on your screen than they do in the book. When you open a project, if you can't see the whole Arrange window, move the window until you can see the three window controls at the left of the title bar, and click the Zoom button (the third button from the left) to fit the window to the screen.

When using a low display resolution, you may also have to zoom or scroll more often than instructed in the book when performing some of the exercise steps. In some cases, you may have to temporarily resize or close an area of the Arrange window to complete an action in another area.

About the Apple Pro Training Series

Apple Pro Training Series: Logic Pro X is both a self-paced learning tool and the official curriculum of the Apple Pro Training and Certification Program. Developed by experts in the field and certified by Apple, the series is used by Apple Authorized Training Centers worldwide and offers complete training in all Apple Pro products. The lessons are designed to let you learn at your own pace. Each lesson concludes with review questions and answers summarizing what you've learned, which can be used to help you prepare for the Apple Pro Certification Exam.

For a complete list of Apple Pro Training Series books, see the ad at the back of this book or visit www.peachpit.com/apts.

Apple Pro Certification Program

The Apple Pro Training and Certification Program is designed to keep you at the forefront of Apple digital media technology while giving you a competitive edge in today's ever-changing job market. Whether you're an editor, graphic designer, sound designer, special-effects artist, or teacher, these training tools are meant to help you expand your skills.

Upon completing the course material in this book, you can become a certified Apple Pro by taking the certification exam at an Apple Authorized Training Center. Successful certification as an Apple Pro gives you official recognition of your knowledge of Apple professional applications while allowing you to market yourself to employers and clients as a skilled, pro-level user of Apple products.

For those who prefer to learn in an instructor-led setting, Apple offers training courses at Apple Authorized Training Centers worldwide. These courses, which use the Apple Pro Training Series books as their curriculum, are taught by Apple Certified Trainers and balance concepts and lectures with hands-on labs and exercises. Apple Authorized Training Centers have been carefully selected and have met Apple's highest standards in all areas, including facilities, instructors, course delivery, and infrastructure. The goal of the program is to offer Apple customers, from beginners to the most seasoned professionals, the highest-quality training experience.

For more information, please see the ad at the back of this book, or to find an Authorized Training Center near you, go to training.apple.com.

Resources

Apple Pro Training Series: Logic Pro X is not intended as a comprehensive reference manual, nor does it replace the documentation that comes with the application. For comprehensive information about program features, refer to these resources:

- ▶ Logic Pro Help, accessed through the Logic Pro X Help menu, contains a description of most features. Other documents available in the Help menu can also be valuable resources.
- ▶ The Apple websites www.apple.com/logic-pro/ and www.apple.com/support/logicpro/.
- ▶ The Logic Pro Help website, an online community of Logic users moderated by the author of this book, David Nahmani: www.logicprohelp.com/forum.

This page intentionally left blank

4

Time Goals

This lesson takes approximately 75 minutes to complete.

Create a new project with a Drummer track

Choose a drummer and drum kit

Edit the drummer performance

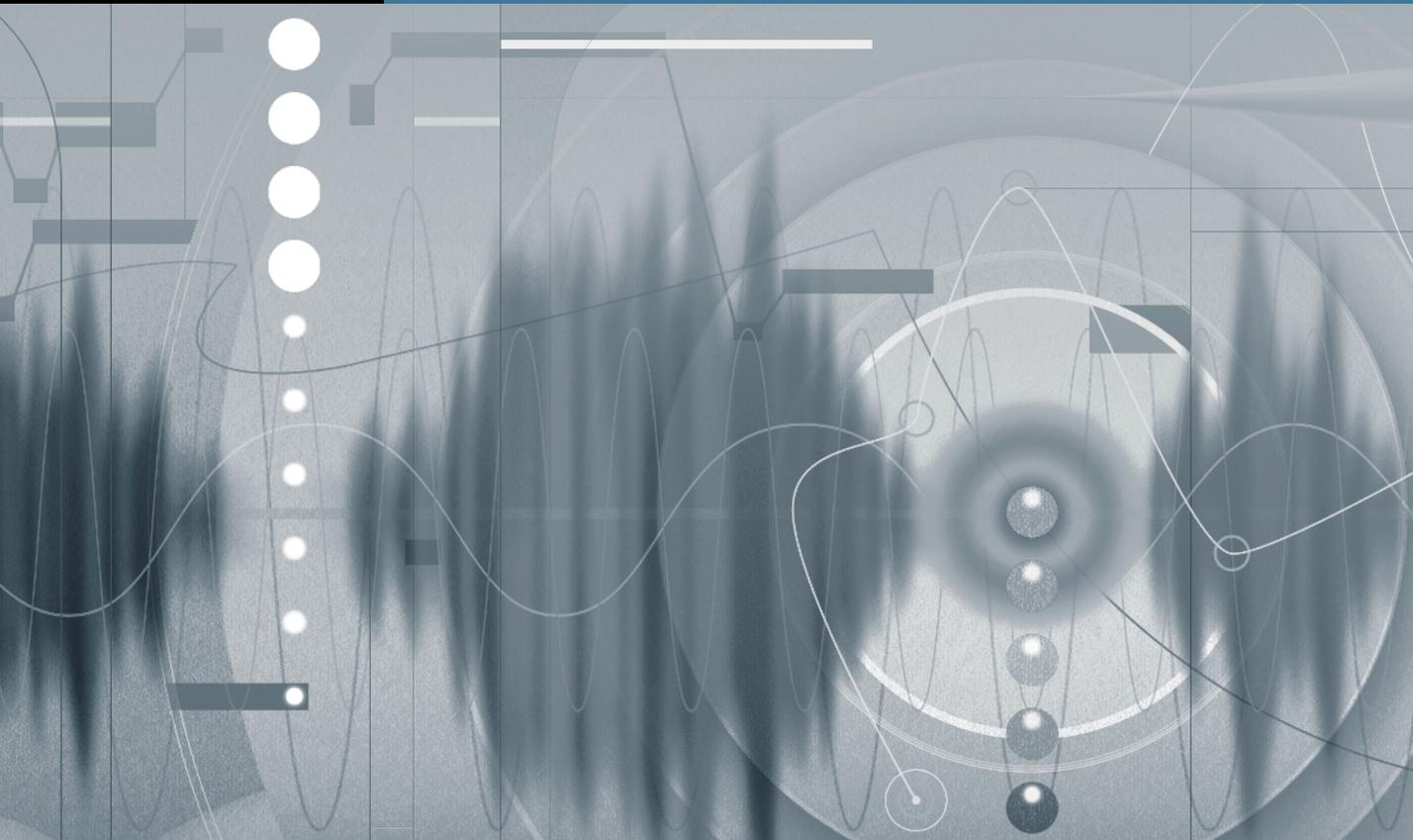
Arrange the song structure

Edit performances in the new sections

Make the drummer play behind or ahead of the beat

Customize the drum kit

Tune and dampen individual kit pieces



Lesson 4

Produce a Virtual Drum Track

In most popular modern music genres, drums are the backbone of the instrumentation. They provide the foundation for the tempo and the groove of the piece. For recording sessions in which the instruments are not tracked at the same time, drums are usually recorded or programmed first, so that the other musicians can record while listening to their rhythmic reference.

To meet today's high production standards, producing drum tracks usually involves using several techniques, including live recording, programming, sampling, audio quantizing, and sound replacement. In Logic Pro X, you can speed up the process by taking advantage of the new Drummer feature along with its companion software instrument, Drum Kit Designer.

In this lesson, you will produce a virtual drum track to start producing a new imaginary indie-rock song. After selecting a genre and choosing the best drummer for your project, you will adjust the drummer's performance, making him play busier patterns or simpler ones, louder or softer, and changing his feel, almost like a producer would communicate with a real drummer in a recording session.

Creating a Drummer Track

Drummer is a new Logic Pro X feature that allows you to produce drum tracks using a virtual drummer with his own playing style. His performance is placed in Drummer regions on a Drummer track. You edit the performance data in the regions using the Drummer Editor. The virtual drummer also has his own drum kit loaded in a software instrument plug-in called Drum Kit Designer.

First, let's open a new project, add a Drummer track, and examine the display of the drum performance in the Drummer region.

- 1 Choose File > New (or press Command-Shift-N).
A new project opens along with the New Tracks dialog.
- 2 In the New Tracks dialog, select Drummer, and click Create.



A Drummer track is created along with two eight-bar Drummer regions. At the bottom of the main window, the Drummer Editor opens, allowing you to choose a drummer and his drum kit, and to edit the performance in the Drummer region(s) that are selected in the workspace. The track is named SoCal, which is the name of the drum kit used by the default virtual drummer, Kyle.



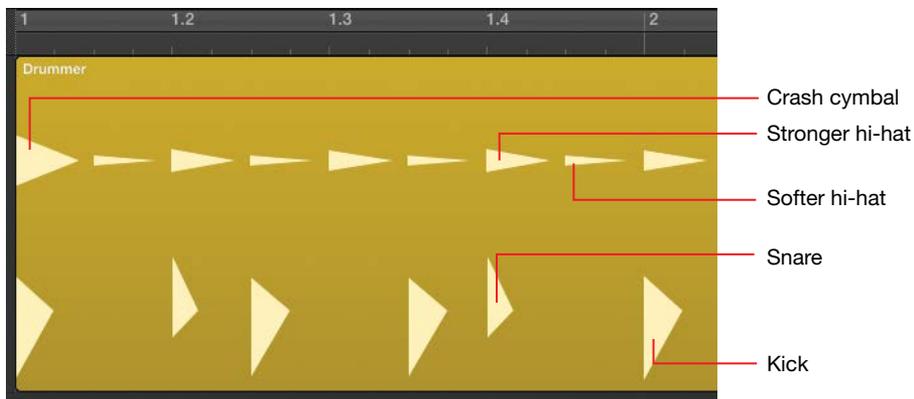
- 3 Press the Spacebar to listen to the two Drummer regions.

In the first region, the drummer starts with a crash cymbal, and plays a straightforward rock pattern. At the end of the first four measures, he plays the simplest of fills (a single tom hit), followed by a crash cymbal that accentuates the first downbeat of bar 5. At the end of the first Drummer region, a drum fill leads into the next section.

In the second region, the drummer switches from the hi-hat to the ride cymbal, and plays a more complex pattern: The kick is busier, and the snare adds ghost notes (very quiet hits) between beats. As in the first region, the drummer plays a fill at the end of the first four measures, followed by a crash. He plays another fill at the end of the region.

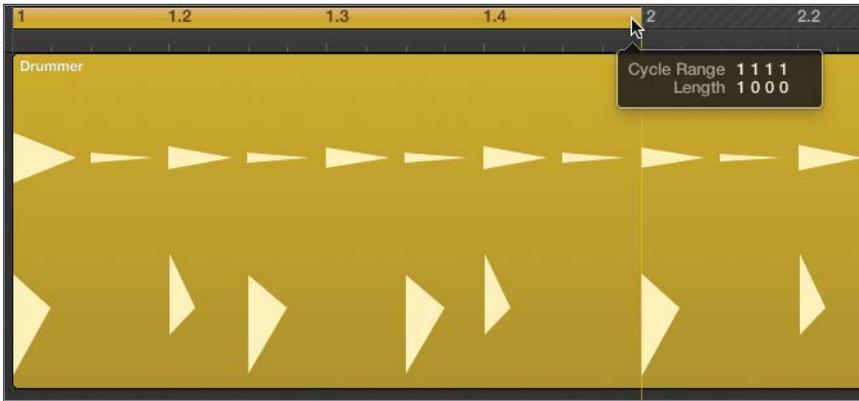
Let's take a closer look at that Drummer region.

- 4 Control-Option-drag over the first bar of the first Drummer region. If necessary, continue zooming vertically by dragging the vertical zoom slider (or pressing Command-Down Arrow) until you can see two lanes in the Drummer region.



The Drummer region displays drum hits as triangles on lanes, roughly emulating the look of drum hits on an audio waveform. Kicks and snares are shown on the bottom lane; cymbals, toms, and hand percussions are on the top lane.

- 5 In the top half of the ruler, drag a one-measure cycle area at bar 1.



- 6 Listen to the first bar a few times while looking at the drum hits in the Drummer region.

Although you cannot edit individual drum hits in the Drummer region, the region display gives you a quick glance at the drummer's performance.

MORE INFO ► At the end of this lesson you will convert Drummer regions to MIDI regions. In Lesson 6, you will learn how to edit MIDI regions.

- 7 Turn off Cycle mode.
- 8 In the workspace, click the background and press Z to zoom out and see both drummer regions.

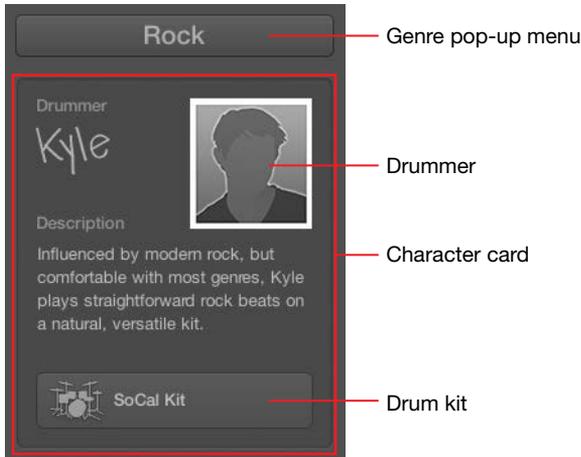
Now you can read the Drummer regions. In the next exercise, you will listen to multiple drummers and several performance presets. Later, you will zoom in again to see the Drummer regions update as you adjust their settings in the Drummer Editor.

Choosing a Drummer and a Style

Each drummer has his own playing style and drum kit, and those combine to create a unique drum sound. Before you start fine-tuning the drummer's performance, you need to choose the right drummer for the song.

In the Drummer Editor, drummers are categorized by music genres. By default, choosing a new drummer means loading a new virtual drum kit, and updating Drummer region

settings; but sometimes you may want to keep the same drum kit while changing the drummer, which you will do in this exercise.



- 1 In the character card, click the drummer.

All the drummers from the Rock category are displayed.

- 2 Place the mouse pointer over Anders (the first drummer in the second row).



A help tag describes that drummer's playing style and the sound of his drum kit. It mentions straightforward rock beats, which would work for this song; but for now, let's get to know the other drummers.

- 3 Continue by placing the pointer over other rock drummers to read their descriptions. When you're through, click the drummer named Jesse.

A dialog explains how to retain region settings when changing the drummer.

- 4 In the dialog, select “Do not show this message again,” and click Change Drummer.



In the workspace, the two Drummer regions update to display Jesse's performance.

- 5 In the workspace, click the first Drummer region (at bar 1) to select it.

The Drummer Editor shows you the settings for the selected Drummer region. A yellow ruler allows you to position the playhead anywhere within the region, and you can click the Play button to the left of the ruler to preview the Drummer region. As in the Tracks area, you can also double-click the ruler to start and stop playback.

- 6 In the Drummer Editor, click the Play button.



The selected region plays in Cycle mode, and the cycle area automatically matches the region position and length. The selected region is soloed—indicated by a thin yellow frame—and the other region is dimmed. Soloing the region helps you focus on the drums when you have other tracks in the project.

Although you will later fine-tune the drummer's performance, Jesse's busy, syncopated drum patterns are not a good fit for this indie rock song. You are looking for a drummer with a simple, straightforward style that more appropriately serves the song.

7 Stop playback.

In the Tracks area, Cycle mode is automatically turned off, the dimmed cycle area returns to its original position and length, and the selected region is no longer soloed.

8 In the Drummer Editor, click the Genre menu at the top of the character card, and choose Alternative.



Drummers from the Alternative category are shown.

9 Click the first drummer, Aidan.

10 In the Drummer Editor, click the Play button.

While the region is playing back in Cycle mode, you can try selecting other region settings presets to explore Aidan's full range of playing style.

11 In the Presets column, click a few different presets while the region plays back.



When you click a preset, the region settings update and you can hear another performance from the same drummer.

12 Without stopping playback, from the Genre menu, choose Rock.

13 Click the fourth drummer, Max, and listen to a few of his presets.

Although Max's hyperactive performance is not what you're looking for, his drum kit sounds punchy. Let's assign the first drummer, Kyle, to play on Max's drum set, East Bay Kit.

14 In the character card, click the drummer to display the drummers.

You can Option-click a new drummer to select that drummer while keeping the current drum kit.

15 Option-click Kyle.



Kyle is now playing Max's East Bay Kit. Let's make him play a bit faster.

16 In the control bar, set the tempo to 142 bpm.



17 Stop playback.

You have found a drummer that plays the straightforward style you're seeking for this project, paired him with a punchy sounding drum kit, and set a tempo that will drive your indie rock song. You are now ready to customize the performance.

Editing the Drum Performance

In a recording session with a live drummer, the artist, the producer, or the musical director must communicate their vision of the completed song. They may ask the drummer to play behind or ahead of the beat to change the feel of the groove, or to switch from the hi-hat to the ride cymbal during the chorus, or to play a drum fill in a specific location.

In Logic Pro X, editing a drummer performance is almost like giving instructions to a real drummer. In this exercise, you will play a drum region in Cycle mode as you adjust the drummer settings.

- 1 In the workspace, make sure the first Drummer region is still selected, and in the Drummer Editor, click the Play button.

Next to the presets, an XY pad with a yellow puck lets you adjust both the loudness and complexity of the drum pattern.

- 2 As the region plays, drag the puck, or click different locations inside the pad to reposition it.



TIP ➤ To undo your most recent Drummer Editor adjustment, press Command-Z.

After positioning the puck, you must wait for the region to update (update time varies depending on your computer). If you drag the puck constantly, the region will not update.

As you position the puck farther to the right, the drum pattern becomes more complex; and as you move the puck toward the top of the pad, the drummer plays louder. Try placing the puck in the pad's corners for extreme settings, such as soft and simple, or loud and complex.

As the drummer plays softer, he closes the hi-hat and switches from hitting the snare drum on the skin to playing rim clicks (hitting only the rim of the drum). As he plays louder, he opens the hi-hat and start playing rim shots (hitting the skin and the rim simultaneously for accent).

Let's make the drummer play a solid, straightforward beat in this first Drummer region, which will be used for the first verse of the song.

- 3 Settle for a puck position where the drummer plays a rather simple and fairly loud pattern.



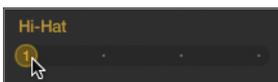
You can still hear a lot of syncopation on the kick drums. To the right of the XY pad, you can choose from several Kick & Snare pattern variations.

- 4 Drag the Kick & Snare slider to position 2 (or click the second increment on the slider).



The drummer now simply alternates kick and snare on every beat. If you don't hear the drummer play the snare on beats 2 and 4, slightly readjust the horizontal position of the puck in the XY pad so it's in the same position as in the figure following step 3. Listen to the hi-hat: It is currently playing eighth notes.

- 5 Click the first increment on the Hi-Hat slider.



The hi-hat now plays only on the beat (quarter notes), which works well for up-tempo songs.

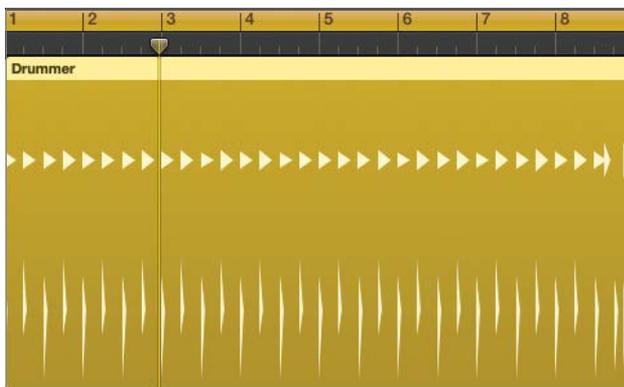
The drummer is playing a fill in the middle of the region (before bar 5) and another at the end (before bar 9). Let's get rid of the first fill and keep only one at the end.

- 6 Look at the region in the workspace while trying different positions for the Fills knob, and drag the Fills knob down until you see the fill before bar 5 disappear. You should still see a fill at the end of the region.



NOTE ▶ Clicking the small lock icon next to the Fills and Swing knobs locks the knob into position as you preview presets or drummers.

TIP ▶ Each time you adjust a setting in the Drummer Editor, the selected region is refreshed and the drummer plays a new subtle variation. Dragging the Fills knob by a tiny amount is a quick way to refresh a region. You can also click the Action pop-up menu next to the Presets menu, and choose Refresh Region; or Control-click the region in the workspace, and from the shortcut menu, choose Edit > Refresh Region.



You now have a very straightforward beat. Because the drummer plays less now, he can make the hi-hat ring a bit more.

- 7 In the Drummer Editor, click the Details button to display three knobs.

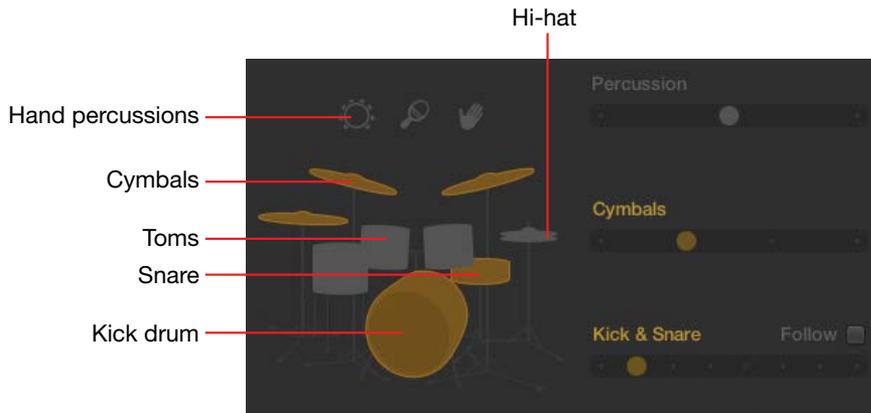


- 8 Below the Hi-Hat knob, deselect the Automatic option.
- 9 Drag the Hi-Hat knob up to open it a little bit.



This verse drum pattern now sounds great, so let's move on to the second Drummer region, which you'll use for the chorus.

- 10 In the Drummer Editor, click the Details button to hide the three buttons.
- 11 Stop playback.
- 12 In the workspace, select the second Drummer region.

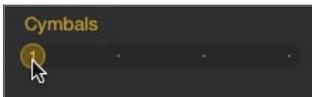


The Drummer Editor updates to show the second region's settings. On the drum kit, the hi-hat is now dimmed, while the cymbals are highlighted in yellow. The drummer no longer plays the hi-hat, but instead plays a ride or crash cymbal in that region.

- 13** In the Drummer Editor, click the Play button.

You can hear the second region in Cycle mode. The drummer is playing the ride cymbal on every eighth note. For a more powerful chorus, you instead want him to play crash cymbals on every beat.

- 14** Click the first increment of the Cymbals slider.



You now hear crash cymbals on every beat. Even for a chorus, the beat is a little too busy.

- 15** On the XY pad, drag the puck toward the left to create a simpler beat.



Let's listen to the verse going into the chorus.

- 16** Stop playback.
- 17** Go to the beginning of the song and listen to both Drummer regions.

You now have a simple, straightforward beat for the verse, and then the drummer switches to the crash cymbal for the busier chorus pattern.

You have carefully crafted two eight-measure drum grooves: one for the verse and one for the chorus. They are the two most important building blocks of the song that you will now start arranging.

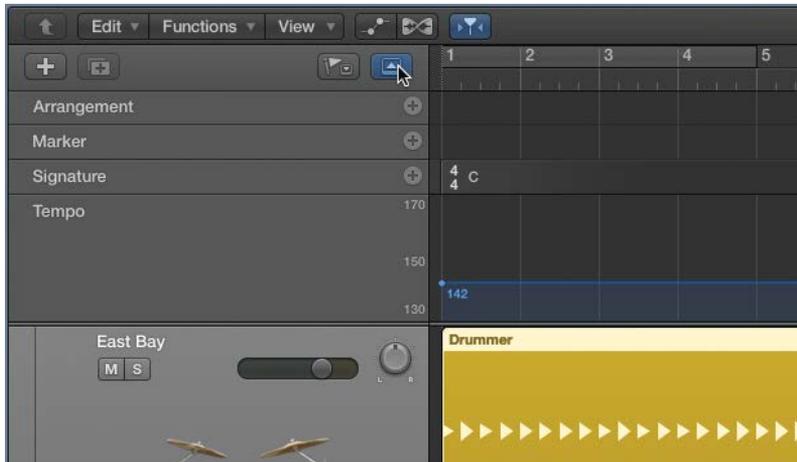
Arranging the Drum Track

In this exercise, you will lay out the whole song structure and continue editing drum regions for each section, still using the two Drummer regions you edited for the verses and choruses.

Using Markers in the Arrangement Track

Using the Arrangement track, you will now create arrangement markers for all the sections of your song. You'll adjust their lengths, positions, and order, and fill all the new sections with Drummer regions.

- 1 At the top of the track headers, click the Global Tracks button (or press G).

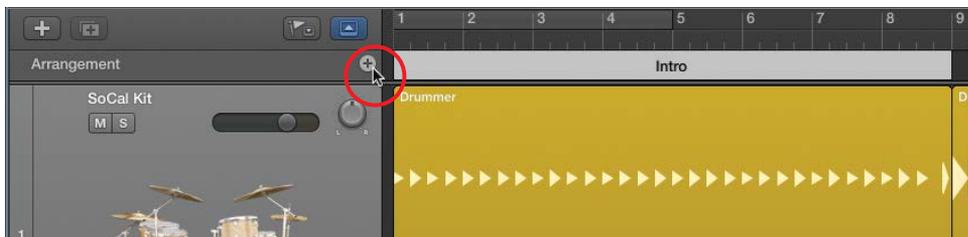


The global tracks open, with the Arrangement track at the top. You won't need the other global tracks, so you can hide them.

- 2 Control-click a global track header, and choose Hide Marker. Also Control-click the Signature and Tempo tracks, and hide them.

The Arrangement track is now closer to the regions in the workspace, making it easier to see their relationships.

- 3 In the Arrangement track header, click the Add Marker button (+).



An eight-measure arrangement marker named Intro is created at the beginning of the song. By default, arrangement markers are eight bars long and are placed one after the other, starting from the beginning of the song. Let's rename the marker.

- 4 Click the name of the marker, and from the menu, choose Verse.



- 5 Click the Add Marker button (+) to create a marker for the chorus.

An eight-bar marker named Chorus is created.

You will now create a marker for a new intro section and insert it before the Verse and Chorus markers.

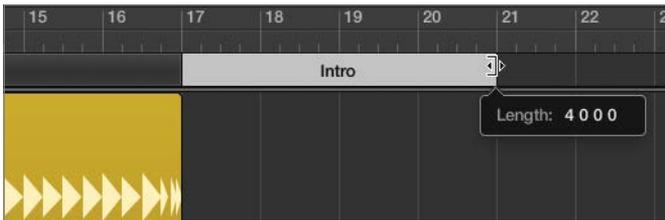
- 6 In the Arrangement track header, click the Add Marker (+) button.

An eight-bar marker named Chorus is created.

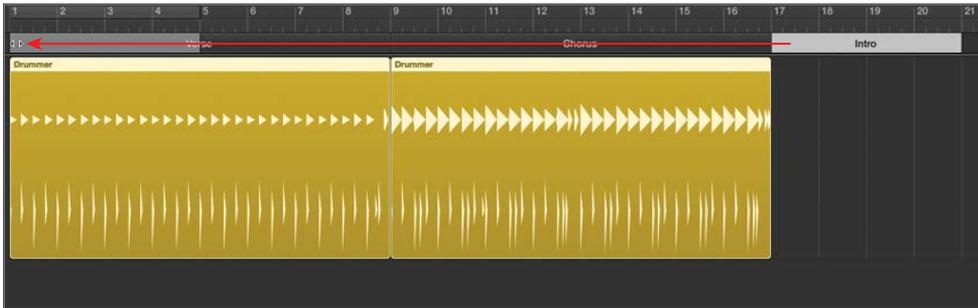
- 7 Click the name of the new marker, and from the pop-up menu, choose Intro.

A four-measure intro will be long enough, so you can resize the Intro marker before moving it.

- 8 Drag the right edge of the Intro marker toward the left to shorten it to four bars.



- 9 Click the marker away from its name (to avoid opening the Name pop-up menu), and drag the Intro marker to bar 1.

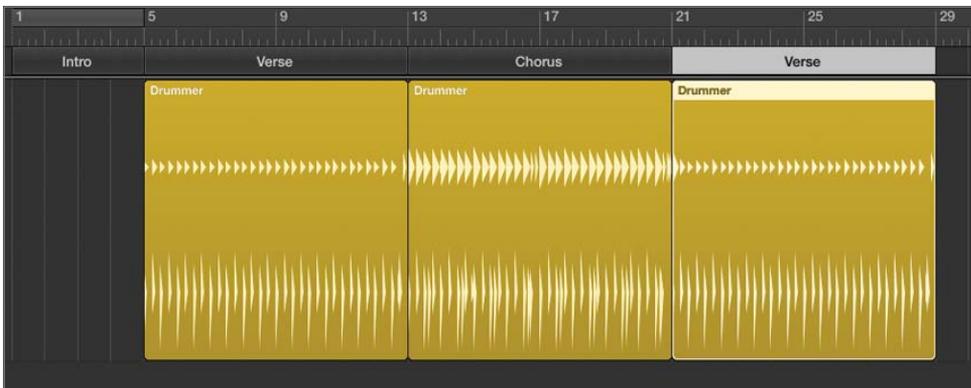


The Intro marker is inserted at bar 1, and the Verse and Chorus markers move to the right of the new Intro section. In the workspace, the Drummer regions move along with their respective arrangement markers.

As with regions in the workspace, you can Option-drag a marker to copy it.

- 10 Press Command-Left Arrow to zoom out horizontally and make space to the right of the existing song sections. Option-drag the Verse marker to bar 21, right after the chorus.

The Verse marker and the Drummer region are copied together.



- 11 Option-drag the Chorus marker to bar 29, after the second verse.

The Chorus and the Drummer region are copied together.

The song is taking shape. You will now finish arranging the song structure with a bridge, a chorus, and an outro section. As you place the last three markers, continue zooming out horizontally as necessary.

- 12 In the Arrangement track header, click the Add Marker (+) button.

A Verse marker is created after the last chorus.

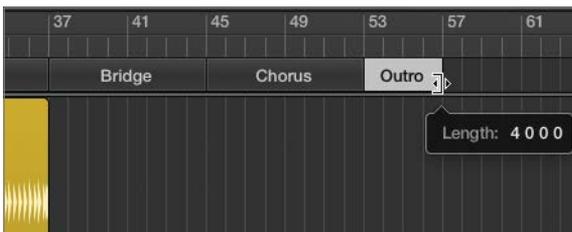
- 13 Click the name of the new marker, and from the pop-up menu, choose Bridge.

- 14 In the Arrangement track header, click the Add Marker (+) button two more times to create markers for the Chorus and Outro sections.

- 15 Click each one of the last two marker names and choose the correct names, Chorus and Outro.

Let's shorten the outro section a bit.

- 16 Resize the Outro marker to make it four bars long.



The song structure is now complete, and you can add Drummer regions to fill out the empty sections.

- 17 On the Drummer track, Control-click the background, and choose “Populate with Drummer Regions.”



New Drummer regions are created for all the empty arrangement markers.

- 18 Listen to the drum track, focusing on the new sections.

New patterns were automatically created for each new Drummer region.

Amazing as his playing is, Kyle (the drummer) might not have guessed what you had in mind for each section. You will now edit the new regions to finish adjusting the drummer's performance.

Editing the Intro Drum Performance

In this exercise, you will make the drummer play the snare instead of the toms. Later, you'll cut the Intro region in two and make the drummer play the snare only during the first half. Then you'll add the kick and hi-hat in the second half.

- 1 In the workspace, click the background to deselect all regions, and click the Intro region to select it.

The Drummer Editor shows its settings.

Throughout this exercise you can click the Play button in the Drummer Editor to start and stop playback, or you can navigate the workspace by pressing the Spacebar (Play or Stop) and the Return key (Go to Beginning).

- 2 Listen to the Intro.

Let's mute the toms.

- 3 In the Drummer Editor, click one of the toms.



The toms are dimmed to indicate that they are muted. In the Intro region, the toms disappear from the top lane.

- 4 Click the snare to unmute it.

In the Intro region, snare hits appear next to the kick hits on the bottom lane.

To play the kick in only the first half of the intro, followed by the kick and snare in the second half, you will cut the Intro region in two.

- 5 Stop playback.
- 6 Hold down Command to use the Marquee tool, and double-click the Intro region at bar 3.



The region is divided into two two-measure regions. When a region is divided, the drummer automatically adapts his performance, and plays a fill at the end of each new region.

- 7 Select the first Intro region.
- 8 In the Drummer Editor, drag the Fills knob all the way down.

Notice how the crash disappears from the first beat of the following region. Even though it is in another region, the crash is actually a part of the fill.

- 9 On the drum kit, click the kick drum to mute it.



In the first two measures, the drummer will be playing only the snare. Let's have him play the snare very softly on every beat, as if he's counting in the band.

- 10** In the Kick & Snare slider, click the sixth increment.



The snare plays every beat.

TIP In multi-track projects, when you click the Follow checkbox, a pop-up menu appears instead of the Kick & Snare slider that lets you choose a track to influence what the drummer plays on the kick and snare.

- 11** In the XY pad, drag the puck all the way down and to the left.



Now the drummer plays rim clicks at the beginning of the first Intro region, and hits the snare a few times at the end.

- 12** In the workspace, select the second Intro region.
- 13** In the Kick & Snare slider, click the second increment.

- 14** On the XY pad, drag the puck toward the upper left.



The drums play a straightforward beat with a fill at the end. Let's add an open hi-hat to inject some energy.

- 15** On the drum kit, click the hi-hat to unmute it.

- 16** In the Hi-Hat slider, click the first increment.

Now you will open the hi-hat to add energy to the end of the intro.

- 17** In the Drummer Editor, click the Details button.

- 18** Below the Hi-Hat knob, deselect Automatic.

- 19** Drag the Hi-Hat knob up nearly all the way until the hi-hat sounds really open, but you can still clearly hear the individual hits.



- 20** Click the Details buttons to display the drum kit again.

- 21** Listen to the whole intro going into the first verse.

You have a short two-part intro. The drummer plays the snare on the first eight beats, and then a basic rock pattern with a very open hi-hat adds energy. At bar 5, a crash punctuates the fill at the end of the intro. The straightforward groove continues in the Verse section with the hi-hat a little less open to leave space to later add a singer.

Editing the Bridge Drum Performance

In a song, the bridge serves to break the sequence of alternating verses and choruses. Often, the main idea of the song is exposed in the choruses, and verses help support or develop that statement. The bridge can present an alternate idea, a different point of view. Departing from the main idea of the song increases the listener's appreciation for returning to the chorus at the end of the song—almost like taking a vacation can increase your appreciation for going back home.

For this fast, high-energy indie-rock song, a quieter bridge in which the instruments play softer will offer a refreshing dynamic contrast. Playing softer does not mean the instruments have to play less, however. In fact, you will make the drums play a busier pattern during this bridge.

- 1 Listen to the Bridge region.

TIP When pressing the Spacebar to play a section, you can use Cycle mode to ensure that playback always starts at the beginning of the section. Drag a section's arrangement marker into the ruler to turn on Cycle mode and create a cycle area that matches the section.



The drummer plays at the same level as in the previous sections, but he plays more here. You need to bring down his energy level.

- 2 Select the Bridge Drummer region.

- 3 In the XY pad, position the puck all the way down and to the right.



The drummer is still playing a lot, but he's much quieter. He no longer hits the snare's skin but plays rim clicks instead. However, rim clicks are not the type of sound you're going for; you want Kyle to play toms.

- 4 On the drum kit, mute the snare, and unmute the toms.

When you click the toms, the hi-hat is automatically muted. Aside from the kick and snare, the drummer can focus on the toms, the hi-hat, or the cymbals (ride and crash).

Let's choose a busier pattern for the toms.

- 5 On the Toms slider, click increment 3.



Kyle is now playing sixteenth notes on the toms, which create a mysterious vibe similar to tribal percussions. You will make him switch from the toms to the ride cymbal in the second half of the bridge to brighten things up.

- 6 Command-double-click the Bridge region at bar 41 to cut it into two four bar regions.



The drummer now plays a different fill at the end of the first Bridge region.

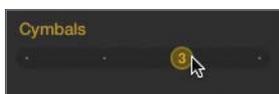
While the second Bridge region is still selected, you can adjust the cycle area.

- 7 Control-click the cycle area, and choose “Set Locators by Regions/Events/Marquee” (or press Command-U).
- 8 Unmute the cymbals.



The toms are muted, and the drummer now plays the ride cymbal. However, the groove still seems to be missing something.

- 9 Unmute the snare.
You can hear rim clicks.
- 10 In the XY pad, drag the puck up just until Kyle switches from hitting the rim to hitting the head of the snare (about a quarter of the way up).
- 11 On the Cymbals slider, click the third increment.



The drummer hits the ride cymbal differently, giving it more of a bell-like sound. He plays a crescendo, thereby building up energy to lead into the next chorus.

Kyle plays slightly ahead of the beat during the bridge. However, the timing nuance is subtle, and difficult to hear without any other instruments to compare with Kyle's timing. Let's turn on the metronome and experiment with the feel of his performance.

- 12** In the control bar, click the Metronome button (or press K).

You will be editing the feel of both Bridge regions simultaneously.

- 13** In the workspace, select both Bridge regions, and press Command-U to set the locators.

At the top of the Drummer Editor, the ruler, Play button, and playhead are hidden because multiple regions are selected. You can now adjust the settings of all the selected regions at once.

NOTE ▶ When adjusting a setting that is set to different values in multiple regions, the value offset between the regions stays the same (wherever possible).

- 14** In the Drummer Editor, click the Details button to display the three setting knobs.

- 15** Try setting different positions of the Feel knob and then listen to the results.



Both regions change their “feel.”

As you experiment with different feels, listen to the way the drums play compared to the steady, precise beat of the metronome. Don't be afraid to drag the Feel knob all the way up or down to hear the effect of extreme Feel settings.

- ▶ Dragging the Feel knob toward Push makes the drummer play ahead of the beat. He sounds as if he's rushing, thereby creating a sense of urgency.
- ▶ Dragging the Feel knob toward Pull makes him play behind the beat. He sounds as if he's lazy or late, and the groove is more relaxed.

Settle on a Feel knob position more toward Pull to realize a reasonably relaxed groove.

16 Click the Details button to hide the three setting knobs.

17 Turn off Cycle mode.

18 In the control bar, click the Metronome button (or press K) to turn it off.

You have radically changed the drummer's performance in that region. Kyle now starts the bridge with a busy pattern on the toms, and then moves on to a bell sound on the ride. He uses restraint, hitting softly and behind the beat, with a slight crescendo toward the end. The quiet and laid-back yet complex drum groove brings a welcome pause to an otherwise high-energy drum performance, and builds up tension leading into the last two sections.

Editing the Chorus and Outro Sections

You will now finish editing the drummer's performance by adjusting the settings of the last two Chorus and Outro Drummer regions in your workspace.

1 Select the Chorus region after the bridge and listen to it.

That Chorus region was created when you populated the track with Drummer regions earlier in this lesson. It doesn't have the same settings as the previous two choruses and sounds busier, except for Kyle playing the ride cymbal instead of the crash.

2 On the Cymbals slider, click the first increment.

The drummer now plays the crash, and this last chorus is more consistent with the previous two choruses.

3 Select the Outro region at the end of the track and listen to it.

The drummer plays a loud beat, heavy on the crash, which could work for an outro. You will, however, make him play double-time (twice as fast) to end the song in a big way.

4 On the Kick & Snare slider, click the last increment (8).



Now it sounds like you've unleashed Kyle! Playing double-time at that fast tempo makes the sixteenth notes on the kick drum sound ridiculously fast.

- 5 On the XY pad, drag the puck toward the left until the drummer stops playing sixteenth notes on the kick drum.



The performance now sounds more realistic while retaining the driving effect of its double-time groove.

Let's finish the song with a longer drum fill.

- 6 Drag the Fills knob all the way up.

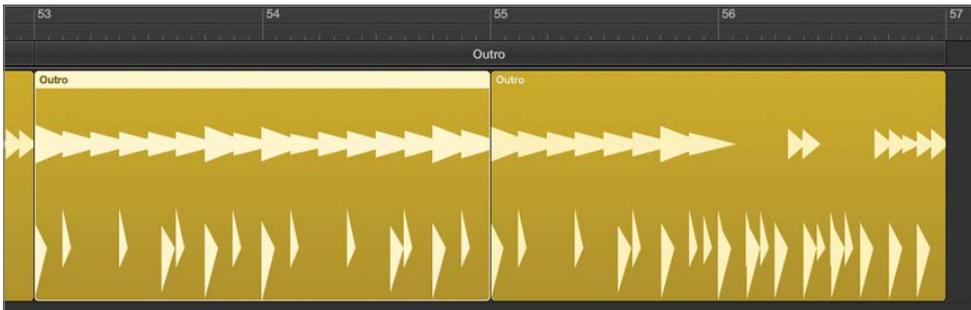
The drum fill at the end of the outro is now longer. However, raising the number of fills has the undesirable effect of adding a new fill in the middle of the outro. To remove that fill, you will cut the Outro region in two.

- 7 With the Marquee tool, double-click the Outro region at bar 55.

You now have two two-bar Outro regions.

- 8 Select the first Outro region.

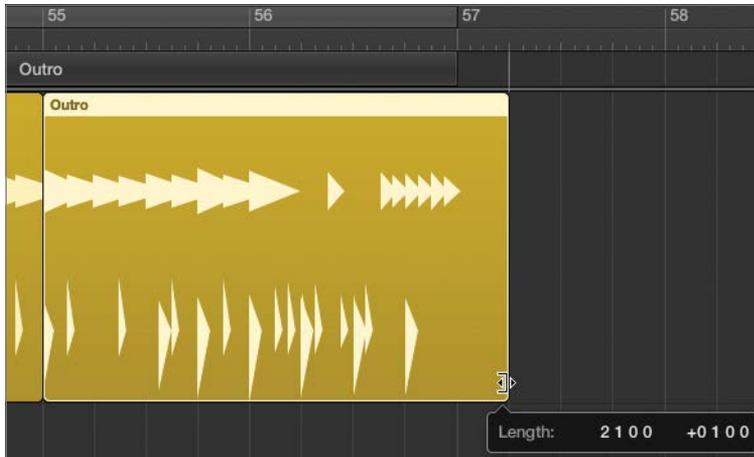
- 9 Drag the Fills knob all the way down to remove the fill in the middle of the Outro section.



- 10 Listen to the last chorus and the outro.

The outro has the required power to drive the last four measures; however, it seems like the drummer stops abruptly before he can finish his fill. Usually drummers end a song by playing the last note on the first beat of a new bar, but here a crash cymbal is missing on the downbeat at bar 57. You will resize the last Outro region in the workspace to accommodate that last drum hit.

- 11** Resize the last Outro region to lengthen it by one beat (until the help tag reads *Length: 2 1 0 0 +0 1 0 0*).



A moment after you release the mouse button, the Drummer region updates, and you can see a kick and a crash on the downbeat at bar 57.

- 12** Listen to the outro. The drummer finishes his fill, punctuating it with the last hit at bar 57.

NOTE ► The final crash cymbal continues ringing until its natural sustain fades out, well after the playhead has passed the end of the last Outro region.

You've laid out the entire song structure by creating section markers in the arrangement track, populated each section with Drummer regions, and edited each region's settings to customize its drum pattern. You are now done editing the drum performance and can focus on the sound of the drums.

Customizing the Drum Kit

When recording a live drummer in a studio, the engineer often positions microphones on each drum. This allows control over the sound of each drum, so he can individually equalize or compress the sound of each kit piece. The producer may also want the drummer to try different kicks or snares, or to experiment with hitting the cymbals softer before he begins recording.

In Logic, when using Drummer, the sounds of each drum are already recorded. However, you can still use several tools to customize the drum kit and adjust the sound of each drum.

Adjusting the Drum Levels Using Smart Controls

Smart Controls are a set of knobs and switches that are premapped to the most important parameters of the plug-ins on the channel strip of the selected track. You will study Smart Controls in more detail in Lesson 5.

In this exercise, you will use Smart Controls to quickly adjust the levels and tones of different drums. Then you'll open Drum Kit Designer to swap one snare for another, and fine-tune the crash cymbal sound.

- 1 In the control bar, click the Smart Controls button (or press B).

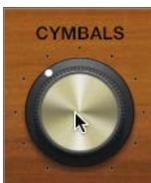


The Smart Controls pane opens at the bottom of the main window, replacing the Drummer Editor. It is divided into three sections: Mix, Compression, and Effects.



In the Mix section, six knobs allow you to balance the levels of the drum. To the right of each knob, a button lets you mute the corresponding drum or group of drums.

- 2 Position the playhead before the first chorus and start playback.
- 3 Turn the cymbals down a bit by dragging the Cymbals knob.



Even with the Amount knob turned all the way down in the Compression section, the compressor is still slightly processing the drum sound. Let's turn it off.

- 4 In the Compression section, click the On button.

On the left channel strip in the inspector, the Compressor plug-in is dimmed, indicating that it is turned off.

- 5 In the Effects section, drag the Tone knob up.



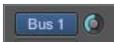
As you drag up the knob, the drums' sound changes timbre and becomes brighter. On the left channel strip in the inspector, the EQ curve on the channel strip's EQ display reflects the changes made to the Channel EQ plug-in.



MORE INFO ► You will further examine the Channel EQ plug-in in Lesson 9.

- 6 Drag up the Room knob.

As you drag up the knob, you will start hearing the subtle reverberation of a drum booth. In the inspector, you can see the Bus 1 Send knob move along with the Tone knob.



MORE INFO ► You will learn how to use bus sends to route an audio signal to a reverb and to change the character of the reverb in Lesson 9.

- 7 In the control bar, click the Editors button (or press E) to open the Drummer Editor.



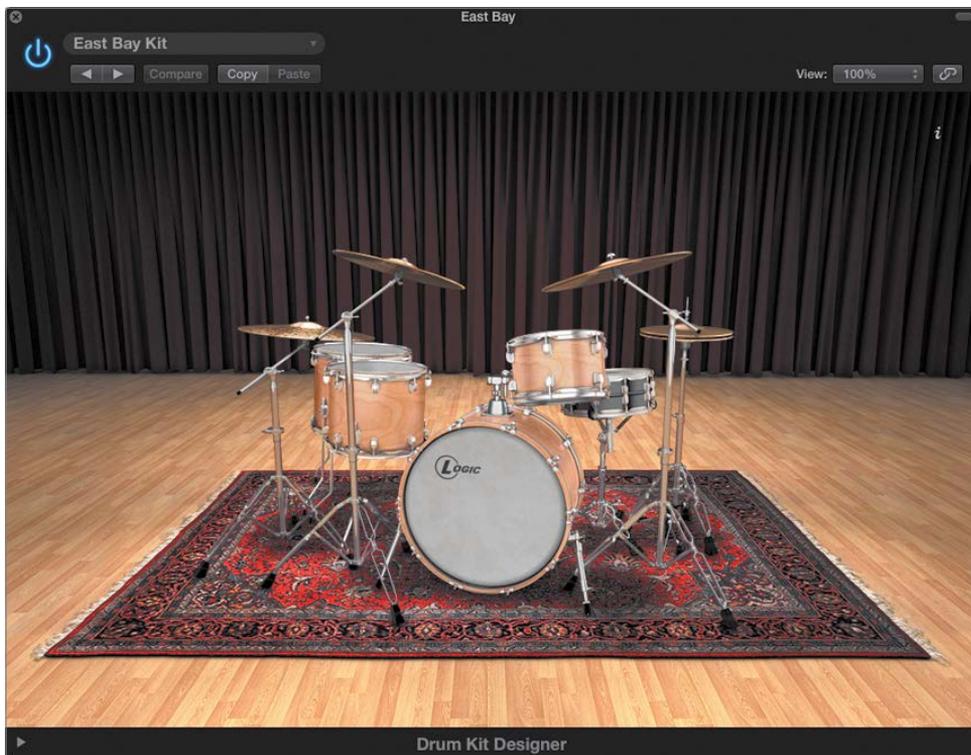
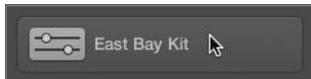
TIP You can also double-click a Drummer region to open the Drummer Editor.

You have adjusted the levels and timbres of the drums, and you're now ready to fine-tune the sound of the individual drum kit pieces.

Customizing the Kit with Drum Kit Designer

Drum Kit Designer is the software instrument plug-in that plays drum samples triggered by Drummer. It allows you to customize the drum kit by choosing from a collection of drums and cymbals and tuning and dampening them.

- 1 At the bottom of the character card, click East Bay Kit to open the Drum Kit Designer.



TIP To have the Drummer regions play a different instrument, you can choose another patch from the Library or insert another software instrument plug-in on the channel strip. You can also drag Drummer regions to another software instrument track, and they are automatically converted to MIDI regions. (You will learn more about MIDI in Lesson 5.)

- 2 In Drum Kit Designer, click the snare.



You can hear the snare sample. The snare stays lit while the rest of the drum kit is in shadow. To the left, a Snares panel contains your choice of three snare drums, and to the right, an Edit panel includes three setting knobs.

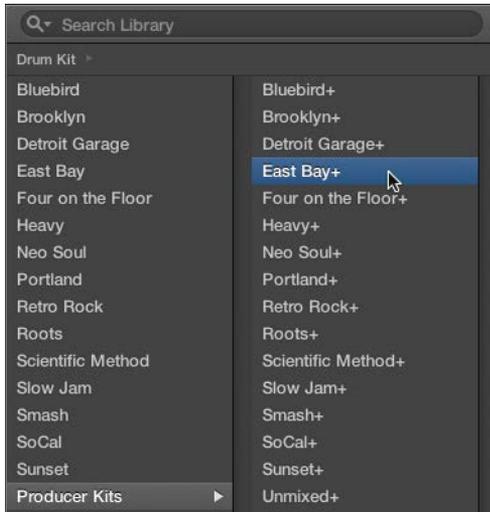
The left panel shows only a limited selection of snares. To gain access to the entire collection of drum samples included with Logic Pro X, you need to choose a Producer Kit in the Library.

- 3 In the control bar, click the Library button (or press Y).



To the left of the inspector, the Library opens, listing patches for the selected track. The current patch, East Bay, is selected.

- 4 In the Library, select Producer Kits, and then select East Bay+.



The Drum Kit Designer window is reset. The East Bay+ kit sounds the same as East Bay while allowing a wide array of options to customize the drum kit and its mix.

MORE INFO ► In the track header, you may have noticed that the drum icon is now framed in a darker rectangle with a disclosure triangle: The track is now a *Track Stack* that contains one track for each microphone used to record the drum kit. Clicking the disclosure triangle displays the individual tracks and their channel strips. You will use Track Stacks in Lesson 5.

- 5 Click the Library button (or press Y) to close the library.
- 6 In Drum Kit Designer, click the snare.

This time the left pane displays a choice of 15 snare drums (use your mouse to scroll down the list). The current snare, Black Brass, is selected.

- 7 Click another snare, and then click the Info button next to it.



A description of the selected snare opens.



Continue previewing different snares and try listening to a verse or a chorus to hear your customized drum kit in action.

- 8 At the top of the left pane, click the Bell Brass snare.
- 9 In Drum Kit Designer, click the kick drum.



The info pop-up window updates to show you information on the selected kick drum. Listen to the kick drum. This kick is the right choice for your song, but it has a long resonance. Typically, the faster the tempo of the song, the less resonance you want on the kick; otherwise low frequencies build up and could become a problem during the mix. You may have seen drummers stuff an old blanket in their kick drum to dampen them. In Drum Kit Designer, you only have to raise the dampening level.

- 10** In the right pane, drag the Dampen knob up to about 75%, and click the kick to listen to it.



The kick's resonance is shortened.

You will now tune the toms, which are mainly used in the bridge section.

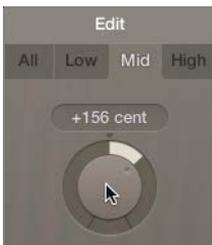
- 11** In the workspace, select the first Bridge region.
- 12** In the Drummer Editor, click the Play button and mute the kick.

You can hear only the low and mid toms.

- 13** In Drum Kit Designer, click one of the toms.

The Edit panel opens with four tabs: All (for adjusting settings of all three toms in the kit together); and Low, Mid, and High (for adjusting settings of each individual tom).

- 14** Click the Mid tab and raise the Tune knob to around +156 cent.



You can hear the mid tom being pitched up as Kyle continues repeating the first half of the bridge.

If you want, feel free to continue exploring Drum Kit Designer and adjusting the sound of the hi-hat, ride, and crash cymbals.

- 15** Stop playback and close the Drum Kit Designer window.

You have exchanged the snare for another one that sounds a little clearer, dampened the kick drum to tame its resonance, and tuned the mid tom to pitch it a bit higher. You have now fully customized both the drum performance and the drum kit.

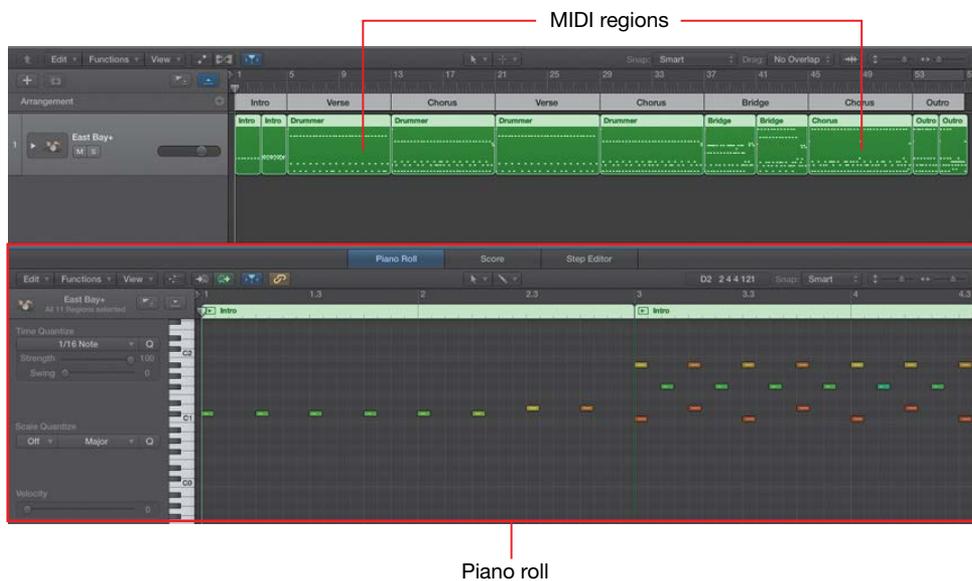
Converting the Drummer Performance to MIDI

Now that you're happy with the bulk of the drummer's performance, you will go further and gain complete control over each individual drum hit by converting the Drummer regions to MIDI regions.

- 1 Click the background of the workspace and press Z to see all the regions.

TIP To select all regions on a track, make sure Cycle mode is off, and click the track header. If Cycle mode is on, only the regions within the cycle area are selected.

- 2 Make sure Cycle mode is off, and click the East Bay+ track header to select all the regions on the track.
- 3 Control-click a region, and from the shortcut menu, choose Convert > Convert to MIDI Region.



The Drummer regions are converted to MIDI regions. At the bottom of the main window, the Piano Roll opens, showing the contents of the selected regions, ready to be edited. Individual drum hit are represented by note beams on a grid, making it easy to select, move, or delete any of them.

You have produced drums for a whole song, and learned many ways to edit the drummer's performance and change his feel. You also customized the drum kit to get your desired sound. With Drummer and Drum Kit Designer, Logic Pro X allows you to quickly lay down a rhythmic foundation for any new song.

Lesson Review

1. How do you choose a drummer?
2. How do you choose a new drummer while keeping the current drum kit?
3. Where do you edit Drummer regions?
4. How do you mute or unmute drum parts?
5. How do you make the drummer play softer or louder, simpler or more complex?
6. How do you access the Feel knob to make the drummer play behind or ahead of the beat?
7. How do you open Smart Controls?
8. How do you open Drum Kit Designer?
9. When customizing a drum kit, how can you access all the available drum kit pieces?
10. How do you dampen or tune an individual drum?
11. How do you convert Drummer regions to MIDI regions?

Answers

1. Click the drummer in the character card, or from the Genre pop-up menu, choose a genre, and then click the desired drummer.
2. Option-click the desired drummer.
3. In the Drummer Editor at the bottom of the main window
4. Click the drum parts in the drum kit that is displayed in the Drummer Editor.
5. Move the puck on the XY pad.
6. Click the Details button at the bottom right of the Drummer Editor.
7. Click the Smart Controls button in the control bar, or press B.
8. Click the drum kit at the bottom of the character card.
9. Select the appropriate Producer Kit in the Library.
10. In Drum Kit Designer, click a drum and adjust the settings in the Edit panel.
11. Select the regions, Control-click one of them, and choose Convert > Convert to MIDI Region.

Keyboard Shortcuts

Main Window

B	Opens the Smart Controls
G	Opens the global tracks
Command-Shift-N	Opens a new file without opening the Templates dialog
Y	Opens the Library

Index

Numbers

- 16-bit recordings
 - AIFF using, 490
 - CDs using, 492
 - Logic set at default to, 63
- 24-bit recordings, 63, 490
- 44.1 kHz sample rate, 61, 492
- 48 kHz sample rate, 61
- 70s Analog Lead patch,
 - 209–212, 215–216

A

- A/D (analog-to-digital)
 - converter, recording audio, 60
- AAC standard, 491
- Adaptive Limiter plug-in,
 - 430–431
- Add Device button, MIDI hardware, 473–474
- Add Marker (+) button,
 - 159–160, 344
- Add Tracks button (+), 64, 78
- Additional Options, 5–6
- Adjust Tempo Using Beat Detection, 299, 340
- Adjustment to Bar, 253
- Advanced Options, project tempo, 299
- advanced tools, 5–6
- aftertouch (or pressure),
 - 273, 491
- AIFF (Audio Interchange File Format), 97–98, 491
- alerts
 - add/delete section,
 - 363–365

- add section, 363
 - assign controller to
 - Automation Quick Access, 460
 - assign key commands, 82
 - browse loops, 14
 - change recording settings, 90
 - choose program
 - remotely, 479
 - close current project, 188
 - connect Logic Remote to
 - Logic on Mac, 224
 - connecting Logic Remote to Mac, 224
 - create new audio file, 124
 - creating key
 - commands, 83
 - Delete, 73–74, 101
 - record single track, 73
 - replace existing patch of same name, 223
 - System Overload, 96
- aliases
 - cloning audio regions, 353
 - defined, 491
 - aligning audio in workspace
 - overview of, 134
 - using anchor, 134–137
 - using Flex tool, 137–139
 - alignment guides
 - adding section, 362
 - aligning with other regions on track,
 - 135–137
 - arranging regions, 378

- All Files Browser
 - audio files in, 73
 - importing audio files,
 - 125–126
 - importing MIDI files,
 - 271–273
- Allow Quick Punch-In, 84
- alternative arrangements,
 - saving, 360–361
- ambience, creating with delay,
 - 416–419
- Amp Designer plug-in
 - adding fade-out, 118–120
 - customizing amp model,
 - 397–401
 - defined, 394
 - inserting plug-in in signal flow, 394–397
 - monitoring effects during recording, 67–68
 - other uses of, 401
 - overview of, 394
- amp model, customizing,
 - 397–401
- amplifier envelope (AMP ENV), Arpeggiator MIDI effect, 243
- analog signal, recording audio, 60
- analog-to-digital (A/D) converter, recording audio, 60
- Analyzer button, frequency analyzer, 411
- anchor, 134–137, 491

- Apple Loops
 - browsing/previewing loops, 12–15
 - creating, 305–307
 - creating green, 307
 - creating/naming tempo sets, 308–310
 - defined, 491
 - hiding, 23
 - opening Loop Browser, 10–11
 - setting project's key signature, 303–305
 - using Loop Browser, 301–303
- applications, opening/
 - searching in Launchpad, 3
- arming, tracks, 491
- Arpeggiator button, Logic Remote, 226
- Arpeggiator MIDI effect, 238–244
- arrangement, building
 - adding lead synths, 33–36
 - creating break, 36–40
- arrangement, editing
 - adding section, 361–366
 - arranging resulting regions, 377–379
 - copying material to fill in parts, 346–357
 - cutting regions to remove silence/noise, 370–376
 - cutting section, 366–369
 - dividing regions by removing silence, 372–376
 - keyboard shortcuts, 381
 - muting/deleting marquee selections, 370–372
 - overview of, 343
 - previewing song, 343–346
 - rendering multiple regions, 357–359
 - review Q & A, 379–380
 - saving alternative arrangements, 360–361
- Arrangement track
 - creating section markers in, 173
 - defined, 491
 - hiding, 308–309
 - using markers in, 158–163
- arrangements. *See* drum tracks, arranging
- Ascending, setting inputs for multiple tracks, 78
- Audio Click setting, metronomes, 92
- audio effect plug-ins
 - Amp Designer. *See* Amp Designer plug-in
 - Compressor. *See* Compressor plug-in
 - latency introduced by some, 97
 - Multipressor, 199
 - recording MIDI events using patch from Library, 190–191
 - using, 394
- audio effects, 187
- audio effects, MIDI Draw, 291
- audio file
 - defined, 491
 - rendering multiple regions into single, 357–359
- Audio File Editor
 - aligning audio using anchor, 136
 - defined, 492
 - editing files in, 131–134
- Audio FX slot
 - on channel strips, 493
 - Gain Reduction meter inserting Compressor into, 426
- opening plug-in menu, 48–51
- opening Tuner, 69
- audio interface
 - defined, 492
 - number of inputs, 79
 - recording audio, 63
 - recording multiple tracks, 78
- Audio MIDI Setup, 472–477
- audio regions
 - adding batch fades to remove click sounds, 355–357
 - adjusting setting with different values in multiple, 170
 - applying green Apple Loops as, 307
 - arranging resulting, 377–379
 - clicking track header to quickly select all tracks, 345
 - cloning, 352–354
 - converting loops to, 347–349
 - copying, 27
 - defined, 492
 - determining length/position of, 25
 - dividing by removing silence, 372–376
 - editing in Audio Track Editor, 125–130
 - editing in workspace, 108–111
 - editing timing of, 321–330
 - joining 126
 - muting or deleting marquee selections, 370–372
 - nondestructive editing in workspace, 99
 - playing backward, 131–134

- previewing and naming, 104–107
 - rendering multiple, 357–359
 - resizing, 28, 348–349
 - scrubbing with Solo tool, 105
 - select all, 52
 - starting playback at
 - beginning of, 346
 - undoing last move, 27
 - viewing all in
 - workspace (Z), 32
 - zooming into, 28–31
 - audio signal
 - adding reverb, 422
 - adjusting dynamic range of, 424–425, 430
 - dB measuring volume of, 494
 - monitoring for record-enabled tracks, 66
 - mute automation and, 443
 - processing instruments with plug-ins, 47–51
 - sample rate of, 499
 - Volume fader affecting gain applied to, 46
 - Audio Track Editor
 - editing note pitches in, 334–339
 - editing regions in, 127–130
 - opening Audio File Editor in, 132
 - audio tracks
 - applying green Apple Loops as regions on, 307
 - creating new, 5, 63–65
 - defined, 492
 - flex modes for, 313
 - placing audio regions on, 14, 492
 - record-enabled, 66, 476
 - specifying type of, 64, 78
 - Auto Zoom, 9
 - automated mixes
 - bouncing, 462–465
 - defined, 492
 - keyboard shortcuts, 466
 - live automation. See live automation, recording
 - offline automation. See offline automation
 - overview of, 435–436
 - review Q & A, 465–466
 - using MIDI controllers, 458–462
 - automatic punching
 - defined, 81
 - overview of, 85–89
 - automatic save, 7
 - Automation button, 436–437
 - Automation Curve tool, 285
 - automation curves
 - automating plug-in bypass, 456–458
 - pan, 441
 - recording live automation in Latch mode, 453–456
 - recording live automation in Touch mode, 448–453
 - volume, 436–440
 - automation, defined, 492
 - automation, in MIDI Draw
 - copying MIDI control data, 285–288
 - of modulation data, 288–291
 - of pitch blend, 281–285
 - Automation Mode pop-up menu, 448, 452–453
 - Automation Parameter pop-up menu, 441, 444
 - Automation Quick Access, 459–462, 492
 - Autopunch mode, 85–89, 205–208
 - aux, 492
 - aux sends, 419–424
- ## B
- balance
 - adjusting volume, 45
 - checking when recording, 70
 - stereo audio content, 35–36
 - bar
 - count-in from
 - beginning of, 91
 - defined, 492
 - defining length of MIDI notes, 253
 - numerical values of, 25
 - recording additional takes in Cycle mode, 77
 - bass
 - creating MIDI notes in Piano Roll Editor, 248–251
 - defining length of MIDI notes with existing notes, 252–253
 - editing MIDI note velocity, 257–260
 - Bass Amp Designer plug-in, 48–49
 - bass loops
 - building up rhythm section, 22–26
 - continuously repeating section, 17–21
 - bass regions
 - building up rhythm section, 22
 - creating MIDI notes in the Piano Roll Editor, 249
 - punching in and out, 206–207
 - batch fades, 355–357
 - beats, numerical values of, 25

- bit depth
 - choosing, 62–63
 - defined, 492
 - digital recordings and, 60
 - bounce
 - automated mix, 462–465
 - defined, 492
 - mixing down music to single file, 52–53
 - rendering multiple regions, 358
 - Breakdown marker, 321
 - breaks
 - adding section to arrangements, 361–366
 - creating, 36–40
 - cutting section from arrangements, 366–369
 - saving alternative arrangements, 360–361
 - taking while mixing, 431
 - bridge drums
 - creating markers for, 162
 - customizing, 180
 - editing performance, 167–171
 - Brooklyn patch, 199–202
 - Browsers button
 - deleting unused audio files, 98–101
 - importing audio files using All Files Browser, 125–126
 - importing MIDI file, 271
 - setting project tempo, 298
 - using Flex tool, 137
 - browsing loops, in Loop Browser, 12–15
 - bus, defined, 492
 - bus sends
 - adding reverb during mixing, 419–424
 - adjusting levels using Smart Controls, 175
 - loading patch without its, 191
 - recording MIDI events using patch from Library, 190–191
 - BWF (Broadcast Wave File) or WAVE, 97–98, 501
 - bypass, 492
 - Bypass Effect Plug-ins, 358
- C**
- C-Press events, editing MIDI data, 274
 - Cabinet pop-up menu, Amp Designer, 398–399
 - CAF (Core Audio Format)
 - Apple Loops as AIFF or, 301
 - reasons to choose, 463
 - storing audio files in, 97–98
 - Capture as Recording, 204
 - Catch button, 349, 492
 - catch mode, 492
 - cc# (continuous control number), 493
 - CD Audio (Compact Disc-Audio), 492
 - channel, defined, 493
 - Channel EQ plug-in
 - adjusting drum levels, 175
 - adjusting pan in mixing, 401–402
 - automating plug-in bypass, 457–458
 - mixing using, 410–416
 - recording automation in Touch mode, 448–453
 - using Amp Designer, 395
 - channel strip settings
 - adding reverb during mixing with aux sends, 419–424
 - choosing names/icons for tracks, 41–43
 - customizing locked screenset, 392–394
 - defined, 493
 - inserting Tremolo plug-in for submix, 407
 - keyboard shortcuts for operations in, 487–489
 - Logic Remote mixer, 227
 - recording MIDI events using patch from Library, 187, 189–191
 - resizing Mixer area to see more, 44–45
 - settings for, 187
 - viewing destination channel strip on, 403–406
 - character card
 - choosing drummer, 149, 152
 - opening Drum Kit Designer at bottom of, 176
 - chorus section
 - creating markers for, 162
 - editing, 171–173
 - Citrus Fuzz channel strip, 283–284
 - Classic Rock Organ patch, 261–264, 269–271
 - Clean button, adding lead synths, 33
 - click sounds
 - removing with batch fades, 355–357
 - removing with fade-outs, 118–120, 366
 - removing with fades/crossfades, 120–124
 - clip, defined, 493
 - cloning, audio regions, 352–354

- coaching tips,
 - Logic Remote, 229
- color
 - comping takes with, 114–118
 - identifying instruments in workspace, 344
 - previewing takes with, 113–114
 - showing tracks on track headers with, 344
- Color palette (Option-C), 113–114
- Command-Click tool, 105–107
- commercial mixes, 431
- Compact Disc-Audio (CD Audio), 492
- comping takes
 - overview of, 114–118
 - previewing takes, 111–114
- Compression section, Smart Controls, 174–175
- Compressor plug-in
 - adding fade-out, 119
 - for dynamic range of vocal track, 424–428
 - inserting Amp Designer before, 395–396
 - mastering own mix, 428–431
 - turning off to add fades, 120
- continuous control number (cc#), 493
- control bar
 - adding “Play from Selection” button to, 346
 - adding Varispeed display to, 318–319
 - customizing display, 85–86
 - customizing main window, 9–11
 - defined, 8, 493
 - LCD display in. See LCD display, control bar
 - Logic Remote, 224–231
 - transport buttons in, 16–17
 - Tuner in, 69
- control points
 - automating modulation data in MIDI Draw, 289–291
 - automating pitch blend in MIDI Draw, 281–285
 - copying MIDI control data in MIDI Draw, 286–288
 - correcting value of, 282
 - creating, 281
 - creating tempo change, 311
 - creating volume automation curves, 437–438
 - defined, 493
 - deleting, 283
 - editing MIDI data in Event List, 274
 - offline mute automation, 445–447
 - offline pan automation, 441–442
 - repositioning tempo, 311
- Control-Spacebar (play/stop selection in browsers/editors), 57
- control surfaces, live
 - automation in MIDI, 458–462
- controllers, MIDI
 - assigning knobs to screen controls, 221–223
 - identifying tracks in Logic Remote mixer, 227
 - joining recordings in Cycle mode, 200
 - overview of, 185–186
 - recording MIDI, 192
- Convert Loops to Regions, 348
- Convert to MIDI region, 181–182, 260
- copy
 - adding section to arrangement, 364
 - arranging resulting regions, 377–378
 - capturing take while recording in, 204
 - changing pitch/speed with Varispeed, 318–321
 - markers, 161
 - for marquee selection, 109
 - regions, 27, 30, 35, 39
- copy material, to fill in parts
 - adding batch fades, 355–357
 - cloning audio regions, 352–354
 - looping regions with Loop tool, 347–349
 - repetition and, 346
 - using folders to determine loop length, 349–352
- Core Audio, 95–97, 493
- Core MIDI, 493
- count-in, 89
- count-in settings
 - metronome, 72, 93
 - recording audio without, 89–91
- CPU meter, adjusting I/O buffer size, 95–96
- crash cymbals
 - arranging drum track, 170, 172–173
 - creating drummer track, 146–147, 157–158
 - customizing drum kit, 180

- Create Empty MIDI Region, 232, 261
 - Create Take Folders, recording MIDI, 202–204
 - crescendo, MIDI note velocity, 277–280
 - crossfades
 - adding to avoid clicks, 120–124
 - comping takes, 117–118
 - defined, 493
 - current pitch, editing in Audio Track Editor, 335
 - curves
 - adjusting speed fade, 315
 - creating tempo, 311–313
 - offline pan automation and, 441
 - offline volume animation and, 436–440
 - Custom LCD display, MIDI connections, 191–192
 - customization
 - amp model, 397–401
 - control bar and display, 85
 - drum kit. *See* drum kit, customizing
 - hidden functions in shortcut menu, 86
 - main window layout, 8–11
 - cut
 - regions to remove
 - silence/noise, 370–376
 - section from arrangement, 366–369
 - Cycle mode
 - adding batch fades in, 355–357
 - choosing drummer and style in, 150–152
 - continuously repeating section in, 17–21
 - cutting section from arrangement in, 366–369
 - defined, 493
 - ensuring playback starts
 - at beginning, 167
 - joining MIDI recordings
 - in, 199–202
 - joining recordings in, 199–202
 - muting marquee selections
 - in, 370–371
 - navigating song with
 - Mixer open in, 45–46
 - previewing takes in, 113–114
 - processing instruments
 - with plug-ins in, 47–51
 - recording additional takes in, 76–77
 - recording MIDI takes in, 202–204
 - turning off, 21, 181
 - turning on and setting locators, 19
 - cymbals
 - adjusting drum levels with Smart Controls, 174
 - crash. *See* crash cymbals
 - ride. *See* ride cymbals
 - Cymbals slider, 157
- D**
- dampening level, customizing, 179–180
 - DAW (digital audio workstation), 103, 494
 - dB (decibels), 494
 - dBFS (decibels Full Scale), 68–69, 494
 - delay, 416–419
 - delete
 - all unused recordings, 90
 - arranging regions, 377–378
 - control points, 283
 - editing MIDI data in
 - Event List, 274
 - marquee selections, 370–371
 - new recording, 73
 - selection of loops, 37–38
 - unused audio files, 98–100
 - unused tracks when
 - rendering multiple regions, 359
 - Delete Mapping, Parameter Mapping area, 218, 220
 - descriptors, Apple Loops, 306
 - Desktop
 - hiding all apps to view, 53
 - saving file to, 6–7
 - selecting from Where pop-up menu, 6
 - Destination box, 52–53
 - destination channel strip, 404
 - Details button, Drummer Editor, 156, 166, 170–171
 - digital audio workstation (DAW), 103, 494
 - digital recording
 - sample rate and bit depth, 60
 - setting up, 59–63
 - display, score, 268–271
 - divisions
 - defined, 25
 - grid mapping positions of, 495
 - help tag displaying lengths of, 25
 - DJs, Varispeed used by, 318
 - Dock, adding Logic Pro X to, 4
 - Done button, Logic Remote Help, 231
 - driver, defined, 494
 - drum hits, in Drummer region, 146–147
 - drum kit, customizing
 - adjusting drum levels using Smart Controls, 174–176

- converting drummer performance to MIDI, 181–182
 - with Drum Kit Designer, 176–180
 - keyboard shortcuts, 182
 - overview of, 171
 - Drum Kit Designer, 176–180
 - drum kit, Drummer Editor, 146
 - drum loops
 - building up rhythm section, 22–26
 - continuously repeating section, 17–21
 - creating simple project, 15
 - positioning playhead to location, 17
 - drum region
 - continuously repeating section, 18–19
 - navigating project, 16
 - drum tracks, arranging
 - editing bridge drums performance, 167–171
 - editing chorus and outro sections, 171–173
 - editing intro drums performance, 163–167
 - keyboard shortcuts, 182
 - using markers in Arrangement track, 158–163
 - drum tracks, virtual
 - arranging. *See* drum tracks, arranging
 - choosing drummer and style, 148–152
 - creating Drummer track, 146–152
 - customizing drum kit. *See* drum kit, customizing
 - editing drum performance, 153–158
 - keyboard shortcuts, 183
 - overview of, 145
 - review Q & A, 182
 - Drummer Editor
 - adjusting levels using Smart Controls, 175–176
 - choosing drummer and style, 150–151
 - editing Drummer regions, 153–158
 - editing intro drums performance, 163–167
 - genres of drummers in, 148–149
 - muting/unmuting instruments in, 163
 - overview of, 146
 - Drummer regions
 - arranging drum tracks. *See* drum tracks, arranging
 - converting to MIDI regions, 181–182, 260
 - creating Drummer track, 146–148
 - customizing in Drum Kit Designer, 175–176
 - editing in Drummer Editor, 153–158
 - populating empty arrangement markers, 162
 - refreshing, 155
 - updated when changing drummer, 150
 - drums, accessing entire collection in Library, 177–178
 - dry signal, 67, 418
 - duration bars, Score Editor, 265–267
 - dynamic processing plug-ins
 - compressing/limiting mix, 428–431
 - overview of, 424
 - using compressor, 424–428
- E**
- East Bay Kit, 175–176
 - East Bay+ Kit, 179, 181–182
 - echo, creating, 416–419
 - Edit Alternatives window, 361
 - editing. *See also*
 - nondestructive editing
 - adding fade-out, 118–120
 - adding fades to remove clicks, 120–124
 - aligning audio material, 134–139
 - arrangements. *See* arrangement, editing
 - assigning mouse tools, 104–107
 - bridge drums performance, 167–171
 - chorus and outro sections, 171–173
 - comping takes, 111–118
 - drummer performance, 153–158
 - files in Audio File Editor, 131–134
 - intro by zooming in, 26–32
 - MIDI. *See* MIDI, creating/editing
 - overview of, 103
 - regions in Audio Track Editor, 125–130
 - regions in workspace, 108–111
 - review Q & A, 140–141
 - editor, defined, 494
 - Editors button, 175, 200, 270, 335
 - effects, monitoring during recording, 67–68
 - Effects section, Smart Controls, 174–175

- electric piano
 - creating split keyboard patch, 213–214
 - Open Library loading patch for, 188
 - electronic voice lists, 481
 - Empty Project template, 4
 - Enable Automation Quick Access, 460
 - Enable Patch Merging, 191
 - engineer, for punching on the fly, 81, 85
 - EQ
 - adjusting pan in mixing process, 401–402
 - change display parameters, 345
 - Channel EQ. See Channel EQ plug-in
 - customizing amp model, 400
 - EqP crossfades, 123
 - Eraser tool, 212
 - ES2 instrument plug-in, 283–284
 - Event List
 - creating crescendo via note velocity, 277–280
 - defined, 494
 - overview of, 273–275
 - quantizing pitches, scales and timings of MIDI notes, 275–277
 - events. See MIDI events
 - exporting
 - MIDI region as standard MIDI file, 273
 - score as PDF, 269
 - External Assignment area, MIDI controllers, 221–223
 - External Instrument plug-in, 470–472
 - external MIDI devices
 - accessing with External Instrument plug-in, 470–472
 - choosing program remotely, 479–482
 - configuring MIDI hardware, 472–477
 - overview of, 469
 - routing external MIDI tracks, 477–479
- F**
- fade-out
 - adding batch fades, 356–357
 - adjusting speed fades, 314–315
 - Fade tool
 - adding fade-out, 119–120
 - defined, 494
 - removing fade with, 141
 - fader. See also Volume fader, 494
 - fades
 - adding batch, 355–357
 - adding fade-out, 118–120
 - adding in Audio Track Editor, 129–130
 - adding to remove clicks, 120–124
 - defined, 118
 - speed, 314–315
 - feedback
 - avoiding when recording multiple tracks, 79
 - avoiding when recording with microphone, 66
 - from record-enabled tracks, 65
 - Feedback screen control, 220, 222
 - Feel knob, 170
 - files, audio
 - editing in Audio File Editor, 131–134
 - importing MIDI, 271–273
 - importing using All Files Browser, 125–126
 - Fills knob
 - arranging drum track, 164
 - creating Drummer track, 155–156
 - customizing drum kit, 172–173
 - Filter screen control, 219, 221
 - Finder
 - configuring MIDI hardware, 472–477
 - hiding all apps to view desktop, 53
 - keyboard shortcuts for, 489
 - Fine Pitch hotspot, 338
 - Finger tool, 311–312
 - Flex editing
 - aligning audio, 137–139
 - creating and naming tempo sets, 310
 - defined, 494
 - editing note pitches in Audio Track Editor, 338–339
 - Flex Pitch, 330–335
 - Flex Time, 310, 321–323
 - time stretching single note, 328–331
 - time stretching waveform between transient markers, 321–326
 - Flex Pitch editing, 331–334
 - folder stacks, 387–388
 - folders
 - closing, 352
 - defined, 494
 - determining loop length, 349–352
 - packing multiple regions on same/multiple tracks, 350
 - Follow checkbox, 165
 - Formant hotspot, 338
 - formats, audio file, 97–98
 - forward, 16–17, 26

- frequency
 - automation in Touch mode, 448–453
 - screen control, 220
 - using Channel EQ plug-in, 410–416
 - using EQ plug-ins, 410
 - frequency analyzer, Channel EQ plug-in, 411–416
- G**
- gain
 - adjusting in Channel EQ, 413–414
 - adjusting volume, 45
 - customizing amp model, 397
 - mastering own mix, 429–432
 - recording audio, 60
 - using Compressor, 425–427
 - Gain Reduction meter, Compressor, 425–427
 - General MIDI (GM) device, 477, 495
 - Genre menu, Drummer, 148–149, 151–152
 - Global Tracks
 - automatically assigning recorded tracks, 65
 - creating and naming tempo sets, 308–310
 - creating tempo changes/curves, 311–312
 - as main track for layered sound patch, 211
 - naming tracks before recording, 65
 - renaming arrangement markers, 159–162
 - renaming regions with Text tool, 106
 - renaming tracks/channel strips, 41–43
 - split keyboard patches, 214
 - take folder, 75
 - using markers in Arrangement track, 159
 - GM Device Multi-Instrument window, 479
 - GM (General MIDI) device, 477, 495
 - “Go to Beginning” button
 - navigating project, 16, 26
 - punching on the fly, 83
 - volume animation curve, 439–440
 - green Apple Loops, 307
 - grid
 - defined, 495
 - note pitches in Audio Track Editor as beams on, 335–339
 - Piano Roll Editor. See Piano Roll Editor, creating MIDI notes
 - quantizing note timings to, 276–277
 - groove tracks, 316–318, 495
 - groups of instruments, track stacks for, 389
- H**
- Hand tool
 - creating tempo change, 311
 - defined, 495
 - moving waveform sections without time-stretching, 326–328
 - hardware
 - configuring MIDI, 472–477
 - routing MIDI tracks, 476–479
 - headroom, 68–69, 495
 - Help, Logic Remote, 231
 - help tag
 - defined, 495
 - lengths/positions of regions, 25
 - position/pitch of note in Score Editor, 262
 - position/pitch/velocity of MIDI notes, 278
 - resizing MIDI notes, 250
 - value of velocity for MIDI note, 259
 - hi-hat
 - adjusting levels using Smart Controls, 174
 - creating Drummer track, 147
 - customizing in Drum Kit Designer, 180
 - editing drum performance, 154–156, 166
 - joining MIDI recordings in Cycle mode, 200–202
 - Hide all other applications, 53
 - Hide current application, 53
 - Hide Marker, 159
 - Hip Hop, 301–303
 - hotspots, Audio Track Editor, 336–338
- I**
- I/O buffer size
 - choosing for recording audio, 94–97
 - defined, 495
 - IAC Driver icon, Audio MIDI Setup, 473
 - icons
 - choosing for recorded track, 66
 - choosing for tracks/channel strips, 41–43
 - import
 - audio files using All Files Browser, 125–126
 - MIDI files, 271–273
 - tempo into project, 14

- Info button, Logic Remote, 229
 - Info column, deleting unused audio files, 98–100
 - info display, Piano Roll Editor, 249–250
 - input activity monitor, MIDI, 191–194
 - input device, 63–65
 - Input menu, 64
 - input number
 - in Input menu, 79
 - preparing track for recording, 63–64
 - reassigning for track, 79
 - recording multiple tracks, 78–79
 - Input pop-up menu, External Instrument plug-in, 471
 - Input Scale, mastering own mix, 430
 - Insert Silence at Locators, 362
 - insert slot, channel strips, 495
 - inspector
 - building up rhythm section, 22–26
 - customizing main window, 8
 - defined, 495
 - hiding when not needed, 23
 - main window area, 8
 - Smart Controls, 217
 - interface
 - adding Apple Loops, 11
 - browsing and previewing loops, 12–15
 - customizing main window layout, 8–11
 - main window, 8
 - using Quick help for information, 9
 - Intergalactic Beat, 302
 - Intergalactic Rising Synth, 302–303
 - intro drums
 - creating markers for, 160–161
 - editing performance, 163–167
 - iPad, Logic Remote app, 223–231
- J**
- joins
 - recording MIDI in Cycle mode, 199–202
 - recording MIDI in selected MIDI region, 197–198
 - rendering multiple regions, 357–359
- K**
- key commands
 - appearing with menu commands, 19
 - assigning for punch on the fly, 81–83
 - building up rhythm section, 26
 - defined, 495
 - editing pitch of MIDI notes using, 253–257
 - Logic Remote, 223, 230
 - muting or deleting marquee selections, 370–372
 - resetting to their defaults, 83
 - when multiple panes are open, 16
 - Key Commands window, 81–83
 - key focus, 15–16
 - key signature, project, 303–305
 - keyboard shortcuts
 - accessing hidden functions in, 86
 - channel strip, track, and region operations, 487–489
 - Finder, 489
 - navigation, 486–487
 - panes and windows, 485–486
 - Piano Roll Editor, 489
 - Project Audio Browser, 489
 - turning Mac keyboard into MIDI controller, 186
 - zoom, 487
 - keyword buttons, Loop Browser, 12–13, 37
 - keyword search, 12–13
 - Kick & Snare slider
 - editing drum performance, 154
 - editing intro drum performance, 165–166
 - editing outro section, 171–172
 - kick drum
 - adjusting levels using Smart Controls, 174
 - customizing in Drum Kit Designer, 179
 - editing drum performance, 157–158
 - editing intro drums performance, 163–167
 - editing outro section, 172
- L**
- Latch, Arpeggiator MIDI effect, 239
 - Latch mode, recording live automation, 453–456
 - latency
 - adjusting I/O buffer size, 94–97
 - defined, 66, 496
 - Launchpad, 3–4
 - layered sound patch, 208–212

- layouts
 - customizing main window, 8–11
 - mapping screen
 - controls to plug-in parameters, 217
- LCD display, control bar
 - adding Varispeed to, 319
 - adjusting tempo to match recording, 300
 - Flex tool position, 139
 - I/O buffer size, 95
 - indicating Logic is receiving MIDI events, 191
 - joining MIDI recordings
 - in Cycle mode, 199–200
 - Logic Remote, 229
 - MIDI input activity monitor, 191–192
 - of playhead, 25, 71
 - previewing tempo, 13–14
 - punching automatically, 85
 - recording MIDI, 193
 - sending MIDI events to external MIDI devices, 191
 - Solo tool in, 105, 344
- Lead Synth region, 273–274, 275–277
- lead synths, 33–37
- Learn button, Parameter Mapping area, 218, 220–221
- Left-click tool, assigning, 104–105
- Legacy and Compatibility content, lesson in this book, 12
- length
 - adjusting MIDI notes, 265–267
 - adjusting speed fade, 315
 - defining for MIDI notes, 251–253
 - loop, 349–352
- levels
 - adjusting in mixing, 401–403
 - adjusting recording, 68–69
- Library
 - creating layered sound patch, 209–212
 - creating MIDI notes in Piano Roll Editor, 248–249
 - customizing, 177–178
 - defined, 187, 496
 - joining MIDI recordings, 199
 - navigating categories/patches in, 189
 - Producer Kit in, 177
 - routing external MIDI tracks to, 476–479
 - using patch from, 186–191
 - viewing plug-in settings in, 187
- Lists button, Event List, 273
- live automation, recording
 - in Latch mode, 453–456
 - overview of, 447–448
 - plug-in bypass animation, 456–458
 - review Q & A, 465–466
 - in Touch mode, 448–453
 - using MIDI controllers for, 458–462
- Live mode
 - processing MIDI notes with MIDI effects, 241–242
 - record-enabled instrument in, 203–204
- locators
 - defined, 496
- editing bridge drums performance, 170–171
 - setting to adjust cycle area, 19–21
 - setting with Command-U, 170–171
- Lock button, Smart Help in Logic Remote, 231
- locked screensets, 391–394
- Logic Remote
 - controlling Logic with, 223–231
 - defined, 496
 - Help documentation, 10
- Loop Browser
 - browsing/previewing loops, 12–15
 - building up rhythm section, 23–26
 - continuously repeating section, 17–21
 - creating Apple Loops, 305–307
 - creating break, 36–40
 - customizing main window, 11
 - transport buttons/key commands, 15–17
 - using, 301–303
- Loop parameter, 25
- Loop tool
 - converting loops to regions, 347–349
 - creating break, 38–39
- loops
 - converting to regions with Loop tool, 347–349
 - defined, 496
 - rendering multiple regions, 357–359
 - using folders to determine length of, 349–352

M

- Mac OS X, keyboard shortcuts, 57
- main track, Track Stack, 210, 216
- main window
 - areas of, 8
 - customizing layout, 8–11
 - defined, 496
 - toggleing plug-ins on/off for interaction with, 215
- make-up gain, removing, 426
- mapping Smart Controls, to patch parameters, 215–223
- maps, complex tempo, 313
- markers
 - arranging drum track, 158–163
 - creating new, 344
 - defined, 496
 - Drummer regions
 - moving with, 161
 - in offline mute
 - automation, 444
 - recording automation
 - in Touch mode, 448–453
 - renaming default, 159–160
 - resizing, 160
 - submixing with summing stack, 403–406
 - time stretching waveform
 - between transient, 321–326
 - using Amp Designer, 394–395
 - using to identify sections
 - in Marker track, 394–397
- Marquee tool
 - adjusting speed fade, 314
 - creating break, 37
 - defined, 496
 - dividing region in two, 164, 168–169, 172
 - editing files in Audio File Editor, 131
 - editing regions in workspace, 109–110
 - moving waveform
 - sections without time-stretching, 326–327
 - muting or deleting
 - marquee selections, 370–372
 - previewing and naming regions, 107
 - volume animation curve, 439–440
- mastering own mix, 428–431
- Match Groove Track
 - checkbox, 317–318
- menu bar, 496
- menu commands, 19
- metronome
 - adjusting project tempo, 298–300
 - adjusting settings, 91–94
 - automatically turning on, 72
 - correcting MIDI recording timing, 196
 - defined, 496
 - editing bridge drums performance, 170–171
- microphone
 - avoiding feedback, 66
 - customizing amp model, 398–399
 - preamps, 60
 - recording audio, 60
 - ribbon, 398
- MIDI
 - creating layered sound patch, 208–212
 - creating split keyboard patch, 212–214
 - defined, 496
 - functionality of, 185–186
 - Logic Remote and, 223–231
 - mapping Smart Controls to patch parameters, 215–223
 - online reference for, 186
 - processing MIDI notes with MIDI effects, 236–244
 - punching in and out, 205–208
 - recording, 191–194
 - recording, correcting timing, 194–196
 - recording MIDI takes, 202–204
 - recordings, joining into MIDI region, 197–202
 - step input recording, 232–236
 - using patch from Library, 186–191
- MIDI channel, 269–270, 496
- MIDI Click setting, metronomes, 92
- MIDI continuous controller (MIDI CC) events, 185
- MIDI controllers, recording live automation with, 458–462
- MIDI, creating/editing
 - creating notes in Piano Roll Editor, 248–260
 - creating notes in Score Editor, 261–271
 - editing data in Event List, 273–280
 - importing file, 271–273
 - keyboard shortcuts, 293
 - MIDI continuous controllers, 280–291

- overview of, 247
- review Q & A, 292
- MIDI Destination, External Instrument plug-in, 470–472
- MIDI devices. *See* external MIDI devices
- MIDI Draw
 - automating modulation data, 288–291
 - automating pitch blend, 281–285
 - copying MIDI control data, 285–288
 - creating crescendo via note velocity, 277–280
 - defined, 496
 - drawing automation graphically. *See* offline automation
 - reverting to straight line, 285
- MIDI editors
 - Event List. *See* Event List
 - finding features in, 291
 - note events in, 192
 - Piano Roll Editor. *See* Piano Roll Editor
 - programming MIDI sequences in, 247
 - Score Editor. *See* Score Editor
- MIDI effects, 236–244, 497
- MIDI events
 - defined, 494
 - displayed in Event List, 273–280
 - LCD display of, 191
 - in Live mode, 203–204
 - MIDI editors
 - programming, 247
 - overview of, 185
 - recording MIDI, 191–194
 - recording using patch from Library, 186–191
 - routing external MIDI tracks, 476–479
- MIDI files (SMF), 271–273
- MIDI In button, 232
- MIDI keyboard
 - assigning screen control knobs, 221–223
 - creating layered sound patch, 209–210
 - creating organ part, 261–265
 - creating split keyboard patch, 212–214
 - joining MIDI recordings, 200–202
 - Logic Remote, 226, 228
 - in MIDI Draw, 281–291
 - modulation wheel for controller, 459
 - overview of, 186, 280–281
 - processing MIDI notes, 237–238
 - recording MIDI, 191–194
 - recording MIDI events, 189–191
 - recording MIDI takes, 202–204
 - turning Mac keyboard into, 186
 - using step input recording, 232–236
- MIDI notes, creating
 - creating and resizing, 248–251
 - defining length, 251–253
 - editing pitch, 253–257
 - editing velocity, 257–260
 - overview of, 248
- MIDI notes, defined, 185
- MIDI Out, 256–257, 258, 470
- MIDI regions
 - converting drummer performance to, 181–182
 - converting Drummer regions automatically to, 177
 - creating aliases, 352
 - creating green Apple Loops, 307
 - defined, 497
 - exporting as standard MIDI files, 273
 - joining recordings in Cycle mode, 199–202
 - punching in and out of, 205–208
 - quantizing, 194–195
 - recording into selected, 197–198
 - recording MIDI, 193
 - selecting all on track, 181
 - using step input recording, 232–236
- MIDI Thru parameters, quantization, 195–196
- mix automation
 - bouncing, 462–465
 - defined, 492
 - keyboard shortcuts, 466
 - live automation. *See* live automation, recording
 - offline automation. *See* offline automation
 - overview of, 435–436
 - review Q & A, 465–466
 - using MIDI controllers, 458–462
- Mix section, Smart Controls, 174
- Mixer
 - adding effects plug-ins, 47–51
 - adjusting volume/stereo position, 44–47
 - channel strips created in, 188–190

- customizing main
 - window layout, 10
 - defined, 497
 - Logic Remote, 223, 227
 - name of track/channel strip, 42
 - names/icons for tracks/channel strips, 41–43
 - mixing. *See also* automated mixes
 - adding delay, 416–419
 - adding reverb using aux sends, 419–424
 - adjusting levels and pan, 401–403
 - adjusting volume/stereo position, 44–47
 - compressing/limiting mix, 428–431
 - customizing locked screenset, 392–394
 - defined, 497
 - keyboard shortcuts, 433
 - names/icons for tracks/channel strips, 41–43
 - organizing windows and tracks, 386–394
 - overview of, 40, 385–386
 - processing with plug-ins, 47–51
 - project to single audio file, 51–54
 - review Q & A, 432–433
 - submixing, 403–410
 - switching between Tracks area and, 389–392
 - tips and tricks, 431–432
 - using Amp Designer, 394–401
 - using compressor, 424–428
 - using dynamic processing. *See* dynamic processing plug-ins
 - using EQ plug-in, 410–416
 - using track stacks, 386–389
 - Modern Synth 6 layout, 217
 - modulation data, automating in MIDI Draw, 288–291
 - monitoring
 - adjusting recording level, 68–69
 - effects during recording, 67–68
 - signal to record-enabled tracks, 66
 - mono audio content, Pan knob, 35–36
 - mouse tools, assigning, 104–107
 - MP3 format, 52–53, 497
 - multi-timbral instrument, 477, 497
 - music
 - adding Apple Loops, 11
 - adding lead synths, 33–36
 - browsing/previewing loops, 12–15
 - building arrangement, 33–40
 - creating break, 36–40
 - creating project, 3–7
 - exploring interface, 7–15
 - mixing. *See* mixing
 - mixing down to stereo file, 51–54
 - navigating project. *See* navigation
 - review keyboard shortcuts, 57–58
 - review Q & A, 54–55
 - sample rate of recorded, 61
 - Musical Instrument Digital Interface. *See* MIDI
 - Musical Typing, 186, 497
 - mute
 - arranging regions, 377–378
 - arranging resulting regions, 377
 - creating/snapping mute animation, 443–446
 - defined, 497
 - dimmed regions
 - in workspace indicating, 344
 - dimmed takes in workspace
 - indicating, 111
 - in Drum Kit Designer, 180
 - editing bridge drums, 168–169
 - editing intro drums, 163–164, 166
 - for layered sound patch, 210
 - marquee selections, 370–372
 - offline animation of, 443–447
 - in Smart Controls, 174
 - Mute tool, 497
 - Muted Single Notes region, 105–106, 108–111
- ## N
- naming
 - alternative arrangement, 360–361
 - arrangement markers, 159–162
 - MIDI device programs, 481–482
 - recorded tracks
 - automatically, 65
 - regions with Text tool, 106
 - take folder, 75
 - tempo sets, 309–310
 - tracks before recording, 65
 - tracks/channel strips, 41–43
 - navigation
 - building up rhythm section, 22–26

- continuously repeating section, 17–21
 - keyboard shortcuts for, 486–487
 - Logic Remote, 223
 - overview of, 15
 - transport buttons/key commands for, 15–17
 - zooming to edit intro, 26–32
 - Network icon, Audio MIDI Setup, 473
 - New Tracks dialog
 - creating Drummer track, 146–148
 - creating new project, 4–5
 - joining MIDI recordings in Cycle mode, 199
 - recording multiple tracks, 78
 - recording single track, 64–65
 - selecting Open Library in, 188
 - Nightlife Lead, 209–212, 215–216, 219
 - noise, cutting regions to remove, 370–376
 - nondestructive editing of audio regions in workspace, 108–111
 - defined, 497
 - punching as, 81
 - quantizing as, 196
 - in workspace, 99
 - Normalize, rendering multiple regions, 358–359
 - notation, MIDI notes as Western music. See Score Editor
 - note off events, MIDI, 192
 - note on events, MIDI, 192
 - Note Order section, Arpeggiator MIDI effect, 239–241
 - notes
 - editing pitch in Audio Track Editor, 334–339
 - editing pitch in workspace, 331–334
 - time stretching single, 328–331
 - Notes event type button, 274
 - number keys, 388
 - numerical values
 - adjusting, 13
 - dragging region to Loop Browser, 306
 - length/position of region, 25
 - MIDI events with, 273–280
- O**
- Octave +/- buttons, MIDI keyboard, 200–202
 - offline automation
 - defined, 436
 - mute animation, 443–447
 - pan automation, 440–443
 - review Q & A, 465–466
 - volume automation curves, 436–440
 - Open Library, 188
 - Option-Down Arrow, 255, 257
 - Option-Up Arrow, 255–256
 - organ part
 - adjusting, 268–271
 - creating, 261–264
 - Oscillator section, Retro Synth plug-in, 237–238
 - Output channel strip, 429, 497
 - output device, 63
 - Output menu, 63
 - outro section, 162, 171–173
- outside studio, listening to your mix, 431
- overlapping recordings, 202–204, 206
- P**
- pan
 - adjusting in mixing, 401–403
 - importing MIDI files, 272–273
 - for mono audio content, 35–36
 - offline automation of, 440–443
 - recording live automation in Latch mode, 455
- panels, keyboard shortcuts, 57
- panes, keyboard shortcuts, 485–486
- Parameter Mapping area, 218–221
- parameters, returning to default values, 272
- Part box, opening as floating window, 262
- patches
 - choosing with Logic Remote iPad app, 223
 - creating layered sound, 208–212
 - creating split keyboard, 212–214
 - defined, 498
 - loading without bus sends/auxiliary channel straps, 191
 - mapping Smart Controls to, 216–223
 - multi-timbral instruments and, 477
 - recording MIDI events from Library, 186–191

- remotely choosing on
 - external MIDI device, 479–482
- Pattern area, Arpeggiator MIDI effect, 241–243
- PCM (pulse-code modulated audio), 498
- PDF, printing/exporting score as, 269
- peak level meter, 68–69
- Pencil tool
 - creating MIDI notes with, 250–251, 263
 - defined, 248, 498
 - defining length of MIDI notes, 251–253
- percussion, adjusting levels in Smart Controls, 174
- Percussions region, 345
- perfect pitch
 - in Audio Track Editor, 335–336
 - in workspace, 334
- Piano 1/3 staff style, 268–269
- Piano channel strip, 50–51
- Piano Roll Editor
 - copying MIDI control data in MIDI Draw, 286–288
 - correcting MIDI recording timing, 195–196
 - correcting notes, 194
 - creating crescendo via MIDI note velocity, 277–280
 - creating MIDI notes. See MIDI notes, creating
 - creating organ part in Score Editor, 261
 - defined, 498
 - joining MIDI recordings in Cycle mode, 200–202
 - keyboard shortcuts for, 489
 - overview of, 248
 - quantizing MIDI notes in Event List, 275–277
 - recording into selected MIDI region, 197–198
 - recording MIDI, 192–193
 - using step input recording, 232–236
 - viewing all notes, 193
 - viewing all notes in, 198
- pitch
 - adjusting in metronome, 92
 - checking MIDI notes, 251
 - correcting notes, 194
 - editing MIDI notes, 253–257
 - editing notes, 331–334
 - joining MIDI recordings, 200–201
 - keyboard shortcuts, 340
 - overview of, 297–298
 - quantizing MIDI notes, 275–277
 - recording MIDI, 193
 - review Q & A, 339–340
 - tuning vocal recordings, 330–339
 - using/creating Apple Loops, 301–307
- Pitch Bend, 281–285
- pitch curve, Audio Track Editor, 335, 338
- “Play from Selection,” 346, 378
- Play/Stop
 - adjusting volume/stereo position, 45
 - building up rhythm section, 26
 - navigating project, 16
 - toggle playback, 21
- playhead
 - building up rhythm section, 26
- continuously repeating section, 17–21
- control bar displaying position of, 25
- defined, 498
- navigating with transport buttons, 16–17
- positioning in ruler, 17
- relocating in Logic Remote, 229
- plug-ins
 - automating bypass animation, 456–458
 - choosing, 48
 - defined, 498
 - hiding/showing open, 396
 - inserting Tuner as, 69
 - mapping screen controls to parameters, 216–221
 - opening for mapping, 215–216
 - ordering multiple, 395–397
 - processing instruments with, 47–51
 - toggle on and off, 215
 - viewing settings in Library, 187
- Pointer tool
 - correcting value of control points, 282
 - creating Apple Loops, 305
 - defined, 498
 - editing MIDI note velocity, 260
- pop-up menu, choosing plug-in from, 48
- Populate with Drummer regions, 162
- position, MIDI notes in Piano Roll Editor, 251
- Power button, 49
- Pre/Post EQ button, Channel EQ plug-in, 411

- preferences
 - adjusting I/O buffer size, 94–97
 - advanced tools, 5–6
 - choosing bit depth, 62–63
 - defined, 498
 - offline mute
 - automation, 445
 - record-enabled tracks, 66
 - settings for, 62
- Preferences window, 63
- presets, Drummer region
 - settings, 151–152
- pressure (aftertouch), 273, 491
- preview
 - loops in Loop Browser, 13
 - regions, 104–107
 - song before editing
 - arrangement, 343–346
 - takes before comping, 111–114
- print score, as PDF, 269
- Producer Kits, Library, 177–178
- programs, 479–482, 498
- Project Audio Browser
 - defined, 498
 - deleting all unused recordings, 90
 - deleting unused audio files, 98–100
 - Flex tool, 137–139
 - keyboard shortcut for, 489
- Project Chooser, 4
- project, creating new, 3–7
- Project Settings, 62, 197–198
- properties, MIDI hardware, 474–475
- puck. See XY pad puck
- pulse-code modulated audio (PCM), 498
- punch in, punch out
 - automatically, 81, 85–89
 - defined, 498
 - on the fly, 81–85
 - MIDI recordings, 205–208
 - overview of, 80–81
- Q**
- Q (width or resonance), in Channel EQ, 413–414
- quantization
 - correcting timing for MIDI recording, 194–195
 - default settings for, 195–196
 - defined, 498
 - joining MIDI recordings
 - in Cycle mode, 200
 - of MIDI notes in Event List, 275–277
- Quantize menu, 194
- Quick Help window, 9–10
- Quick Swipe Comping, 112, 114–118
- R**
- ramp time, 452
- Ratio screen control, 219–220, 222
- Read automation mode, 456
- Record button
 - automatic punching, 88
 - enabling punching on the fly, 84
 - recording additional takes, 74
 - recording audio, 71
 - recording MIDI, 192, 196
 - recording MIDI takes, 203
- Record Enable button
 - recording additional takes, 75, 79, 81
 - recording single track, 65, 67
- record-enabled tracks
 - all incoming MIDI data routed to, 472
 - creating layered sound
 - patch as, 208–212
 - monitoring signal to, 66
 - possible feedback from, 65
 - recording additional takes, 76–77
 - recording multiple tracks, 78–80
 - recording single track, 65–66
- Record Toggle
 - assigning key command to, 81–83
 - punching on the fly, 83–85
- recording audio
 - additional takes, 74–76
 - additional takes in Cycle mode, 76–77
 - count-in setting, 89–91
 - deleting unused files, 98–100
 - digital audio recording, 59–63
 - file type setting, 97–98
 - I/O buffer size setting, 94–97
 - keyboard shortcuts, 101
 - metronome setting, 91–94
 - multiple tracks, 77–80
 - overview of, 59
 - punching in and out. See punch in, punch out
 - review Q & A, 100–101
 - single tracks. See tracks, recording single
- recording live automation
 - in Latch mode, 453–456
 - overview of, 447–448
 - plug-in bypass animation, 456–458
 - in Touch mode, 448–453
 - using MIDI controllers for, 458–462

- recording MIDI
 - correcting timing, 194–196
 - creating layered sound patch, 208–212
 - creating split keyboard patch, 212–214
 - joining recordings
 - into MIDI region, 197–202
 - mapping Smart Controls to patch parameters, 215–223
 - overview of, 191–194
 - processing MIDI notes with MIDI effects, 236–244
 - punching in and out, 205–208
 - takes, 202–204
 - using Logic Remote, 223–231
 - using step input
 - recording, 232–236
 - Redo last action, 57
 - reflections, sound
 - adding delay to create artificial, 416–419
 - adding reverb to create artificial, 419–424
 - in natural environment, 416
 - refresh region, 155
 - Region inspector
 - adding batch fades, 355–357
 - adjusting Fade In parameter, 123
 - building up rhythm section, 22–26
 - creating MIDI notes in Score Editor, 263, 268
 - defined, 499
 - recording MIDI in Cycle mode, 200
 - time-correcting MIDI regions, 194–196
 - using folders to determine loop length, 352
 - regions
 - audio. See audio regions
 - defined, 498
 - Drummer. See Drummer regions
 - folders as. See folders
 - keyboard shortcuts for, 487–489
 - MIDI. See MIDI regions
 - take folders as. See take folders
 - remote programs, external MIDI device, 479–482
 - rendering, multiple regions in editing, 357–359
 - Repeat command, 352
 - Repeat Regions/Events dialog
 - adjusting MIDI note lengths, 266–267
 - cloning audio regions, 352–354
 - defining length of MIDI notes, 252–253
 - Replace mode
 - defined, 499
 - punching MIDI recordings, 205–208
 - Reset button, 19, 37
 - Reset Pitch Curve, 338
 - resize
 - audio regions, 28, 109, 348
 - folder length, 350
 - MIDI notes in Piano Roll Editor, 250–251
 - Resize pointer, 29–30, 44–45
 - Resize tool, 129
 - Resulting Tempo, Varispeed, 320
 - Retro Synth plug-in, MIDI notes, 237, 241–343
 - Return (Go to Beginning), 57
 - reverb
 - customizing amp model, 397–398
 - offline mute automation of, 443–447
 - using aux sends in mixing for, 419–424
 - Reverse, 133–134
 - Rewind, 17, 26
 - rhythm section, building up, 22
 - ribbon mics, 398
 - ride cymbals
 - arranging drum track, 168–171
 - creating Drummer track, 147, 153, 157
 - customizing in Drum Kit Designer, 180
 - Right Arrow, editing MIDI notes, 255–256
 - Ringshifter plug-in, 216, 220
 - Rounding pop-up menu, project tempo, 300
 - roundtrip latency, 94
 - routing tracks, external MIDI devices, 477–479
 - ruler
 - defined, 499
 - positioning playhead in, 17
- S**
- sample accurate editors, 492, 499
 - sample patterns, repeating, 346
 - sample rate, 60–63, 499
 - save
 - arrangement as new alternative, 360–361
 - audio recording as Apple Loop, 305–307
 - files, 6–7
 - layered sound patch, 210–211
 - Logic Pro X automatic, 7

- scales, quantizing MIDI notes, 276–277
- score display, in Score Editor, 268–271
- Score Editor
 - adding note lengths, 265–267
 - creating MIDI notes, 261–271
 - creating organ part, 261–265
 - defined, 499
 - score display adjustments, 268–271
 - using MIDI Draw in, 280
- screen controls
 - assigning MIDI controller knobs to, 221–223
 - mapping to plug-in parameters, 216–221
- screenset
 - customizing locked, 392–394
 - defined, 499
 - inserting tremolo for submix, 408–410
 - submixing with, 404–406
 - switching Tracks area/Mixer, 389–392
- scrubbing, 105, 499
- searching
 - applications by name in Launchpad, 3
 - in key commands, 82
- sections
 - adding to arrangement, 361–366
 - cutting from arrangement, 366–369
- send. See also bus sends, 499
- Set Locators by Regions/Events/Marquee, 370–371
- Set to Perfect Pitch, editing notes, 334, 336
- Setting buttons, channel strips, 187, 392
- Settings button, Logic Remote Help, 231
- Shift-Option-Down Arrow, 255
- Shift-Option-Up Arrow, 255
- Show Groove Track, 316
- signal flow, Amp Designer in, 394–397
- Signature list, key signatures, 304–305
- silence
 - cloning audio regions, 354
 - cutting regions to remove, 370–376
 - inserting one bar of, 361–365
- single tracks. See tracks, recording single
- sixteenth notes, number of ticks in, 26
- skip cycle area, cutting section, 367–369
- slap-back delay, 416–419
- Slow Drums region
 - creating Apple Loops, 305–307
 - creating/naming tempo sets, 308, 310
 - creating tempo changes, 312–313
 - setting project tempo, 298–299
 - using Loop Browser, 303
- Smart Controls
 - adding audio effects in MIDI Draw, 291
 - adjusting drum levels, 174–176
 - controlling with Logic Remote, 223–225
 - defined, 174
 - keyboard shortcut, 174
 - mapping to patch parameters, 215–223
- Smart Help, Logic Remote, 230–231
- SMF (MIDI files), 271–273
- SMPTE (Society of Motion Picture and Television Engineers), 499
- snap modes
 - adding section, 362–363, 365–366
 - arranging resulting regions, 378
 - comping takes, 115–118
 - disabling, 109
 - editing audio regions, 108–111
 - offline mute automation, 445–446
- snare drums
 - adjusting levels/tones with Smart Controls, 174
 - arranging drum track, 163–169
 - creating Drummer track, 146–147, 154, 157
 - customizing kit in Drum Kit Designer, 177–179
 - joining recordings into MIDI region, 199–201
 - in mute animation, 444–447
- Society of Motion Picture and Television Engineers (SMPTE), 499
- soft synths (or soft samplers). See software instruments
- software instruments
 - about Live mode, 203–204
 - creating layered sound patch, 208–212
 - creating MIDI notes in Piano Roll, 248–251
 - creating organ part in Score Editor, 261–265

- creating split keyboard patch, 212–214
 - defined, 500
 - External Instrument plug-in, 470–472
 - importing MIDI files, 272
 - joining MIDI recordings in Cycle mode, 199–202
 - playing with Logic Remote, 223
 - recording MIDI events using patch, 188–191
 - recording MIDI takes, 202
 - Solo mode
 - applying Strip Silence, 373–376
 - arranging resulting regions, 377–379
 - assigning mouse tools, 104–105
 - avoiding delayed reaction in, 345
 - defined, 500
 - for individual tracks, 315, 317
 - muting marquee selections, 370–371
 - previewing song, 344–346
 - using Amp Designer, 395
 - sound
 - creating layered sound patch, 208–212
 - pressure waves, 60
 - speed of travel, 94–95
 - Space Designer plug-in, 50–51
 - Spacebar, play/stop project, 57
 - speaker cabinet, customizing amp model, 398–399
 - speed fades, 314–315
 - speed, Varispeed, 318–321
 - split keyboard patches, 212–214
 - spoken lines, not tuning, 334
 - standard MIDI files (SMF)
 - defined, 500
 - exporting MIDI region(s) as, 273
 - importing, 271
 - Steinway Grand Piano patch, 190, 272
 - Step Input keyboard, 234–235
 - step input recording
 - defined, 500
 - overview of, 232–236
 - undoing wrong note, 236
 - stereo audio
 - Balance knob for, 35–36
 - mixing down project to single file, 51–55
 - regions, appearing as single waveform, 127–128
 - Stereo Out channel strip, mastering own mix, 428–431
 - stereo position, Mixer, 46–47
 - Stinger Bass
 - creating MIDI notes in Piano Roll Editor, 248–251
 - editing note velocity, 257
 - punching in and out, 207
 - recording MIDI takes, 202–203
 - Stop button, playback, 16, 20
 - Strip Silence, 373–376
 - Style, Score Editor, 268
 - submixing
 - processing with Tremolo plug-in, 406–410
 - with summing stack, 403–406
 - subtracks, Track Stack, 210, 454
 - summing stack
 - defined, 387–388
 - inserting Tremolo plug-in, 406–410
 - layered sound patches with, 209–210
 - split keyboard patches with, 213
 - submixing tracks with, 403–406
 - Swing knob, Drummer Editor, 155
 - Sync button, Tape Delay, 418
 - synthesizer, defined, 500
 - synths
 - adding lead, 33–37
 - adjusting volume/stereo position, 45–46
 - creating layered sound patch, 209
 - processing MIDI notes with MIDI effects, 236–244
 - System Overload alert, 96
- T**
- Tab key, navigating project, 16
 - Take Folder pop-up menu, 112, 117
 - take folders
 - comping takes, 114–118
 - deleting, 90
 - multiple comps in, 117
 - previewing takes, 111–114
 - punching, 80–81, 84, 88–89
 - recording additional takes, 74–77
 - recording MIDI takes, 202–204
 - takes
 - capturing as recording in playback mode, 204
 - comping, 114–118
 - previewing, 111–114
 - recording additional, in Cycle mode, 76–77

- recording additional,
 - on multiple tracks, 77–80
 - recording additional, overview of, 74–76
 - recording MIDI, 202–204
- Tape Delay plug-in
 - for mapping, 216
 - mapping screen controls to, 220
 - slap-back delay with, 416–419
- tape slow-down effect, 313–315
- templates, saving program names for MIDI device, 482
- tempo
 - adjusting project, 13–14
 - adjusting to match recording, 298–300
 - changing playback pitch/speed with Varispeed, 318–321
 - for continuously repeating sections, 20
 - creating and naming tempo sets, 308–310
 - creating Apple Loops, 305–307
 - creating changes and curves in, 310–313
 - defined, 500
 - editing outro section, 171–172
 - setting drummer, 152
 - Tape Delay auto synchronized to, 417
 - using Loop Browser, 301–303
- Tempo tracks
 - arranging drum track, 159
 - creating and naming tempo sets, 308–310
 - creating tempo change and curves, 310–311
 - defined, 500
 - text, showing MIDI events as, 273–280
- Text tool
 - assigning mouse tools, 105–107
 - defined, 500
 - renaming new region with, 124
- Thick Layered Synth region
 - creating split keyboard patch, 212
 - mapping Smart Controls to patch parameters, 215, 220
 - using step input recording, 232–236
- ticks, numerical values of, 25
- timbre, altering with pitch correction, 338
- Time Quantize Strength slider, 277
- time signature
 - beat as denominator in, 25
 - continuously repeating section, 20
 - defined, 500
 - displayed in control bar, 8
- time stretch
 - defined, 500
 - moving waveform sections without, 326–328
 - for single note, 328–331
 - of waveform between transient markers, 321–326
- timing
 - adding turntable/tape slow-down effect, 313–315
 - correcting for MIDI recording, 194–196
 - creating tempo changes and curves, 308–313
 - editing for audio region, 321–330
 - getting tracks in same groove, 315–318
 - quantizing MIDI notes in Event List, 275–277
 - review Q & A, 339–340
 - setting project tempo, 298–300
 - setting project's key signature, 303–304
 - Varispeed changing playback, 318–321
 - volume animation curve, 439
- toms
 - adjusting in Smart Controls, 174
 - customizing, 180
 - editing bridge drums, 168–169
- Tonality slider, metronome, 93
- tone
 - Apple Loops not matching root, 303
 - Smart Controls adjusting, 175
- Tool menus
 - assigning mouse tools, 104–107
 - creating breaks, 36–40
 - creating editing MIDI, 258, 268
 - defined, 501
 - Fade tool, 119
 - keyboard shortcut for opening, 141
- toolbar
 - customizing main window, 9–11
 - defined, 500
- tools, advanced Tools, 5–6

- Touch instruments, Logic Remote, 225
 - Touch mode, recording live automation in, 448–453
 - track automation, 363–365, 501
 - track header, 501
 - Track inspector
 - choosing program remotely, 479
 - creating and naming tempo sets, 310
 - creating split keyboard patch, 213–214
 - defined, 501
 - track numbers, 393
 - Track Stack
 - creating layered sound patch, 208–212
 - defined, 501
 - Logic Remote, 226–228
 - opening plug-ins for mapping, 215–216
 - overview of, 208
 - streamlining workspace with, 386–389
 - submixing with summing stack, 403–406
 - tracks
 - choosing names/icons for, 41–43
 - creating software instrument, 188–191
 - defined, 501
 - getting into same groove, 315–318
 - keyboard shortcuts for, 487–489
 - recording multiple, 77–80
 - showing colors on track headers, 344
 - submixing with summing stack, 403–406
 - using folders to pack multiple regions, 350
 - Tracks area
 - adding volume automation to vocals, 436–440
 - assigning mouse tools, 104–107
 - choosing names/icons, 41–43
 - customizing main window layout, 10–11
 - defined, 8, 501
 - Display Level button, 351–352
 - navigating project, 16
 - navigating song with Mixer open, 45
 - streamlining workspace with track stacks, 386–389
 - using MIDI Draw in, 280
 - tracks, organizing for mixing
 - customizing locked screenset, 392–394
 - streamlining workspace with track stacks, 386–389
 - switching with screensets, 389–392
 - tracks, recording single
 - adjusting recording level, 68–69
 - checking balance, 70
 - monitoring effects, 67–68
 - preparing track, 63–67
 - recording audio, 71–74
 - tuning instrument, 69–70
 - transient markers, time stretching waveform, 321–326
 - transport buttons, navigating project, 16
 - Tremolo plug-in, inserting for submix, 406–410
 - troubleshooting
 - with Event List, 273–280
 - MIDI connections, 191
 - Tuner, 69–70
 - turntable stop effect, 313–315
- ## U
- Undo last action, 57, 73
 - Unlock, customizing locked screenset, 392–394
 - upright bass, 213–214
- ## V
- Varispeed, 318–321
 - velocity
 - adjusting metronome settings, 92
 - creating crescendo via MIDI notes, 277–280
 - creating MIDI notes of same, 253
 - defined, 501
 - editing MIDI note, 257–260
 - vibrato, 289–291, 337
 - View button, Logic Remote, 224–225, 227, 230–231
 - Vintage B3 plug-in window, 269–270
 - virtual drum track. *See* drum tracks, virtual
 - virtual instruments. *See* software instruments
 - vocal tracks
 - adding delay, 416–419
 - adding volume automation, 436–440
 - automatic punching, 86–89
 - dynamic range using Compressor, 424–428

- punching on the fly, 83–85
 - recording live automation in Touch mode, 448–453
 - vocals, tuning recordings
 - editing note pitches in Audio Track Editor, 334–339
 - editing note pitches in workspace, 331–334
 - overview of, 331
 - Voice Separation tool, Score Editor, 268
 - volume animation curve, 438–439
 - Volume fader
 - Balance knob on, 35
 - checking balance when recording, 70
 - dynamic processing plug-ins, 429
 - EQ plug-in, 415–416
 - external MIDI devices, 478
 - Logic Remote, 228
 - MIDI controllers, 461
 - mixing, 388, 402–403, 408, 412
 - mixing song, 47, 50
 - offline automation, 437–438
 - Option-clicking to return to default value, 272
 - patch from Library, 187
 - rendering multiple regions, 357–358
 - Volume slider
 - automating mix, 438
 - checking balance when recording, 70
 - dynamic processing plug-ins, 429
 - editing MIDI data in Event List, 274
 - importing MIDI file, 272
 - rhythm section, 26
 - setting metronome, 93
- W**
- WAV, WAVE format, 97–98, 501
 - Waveform Zoom button, 128–130
 - waveforms
 - adding fades to remove clicks, 121–124
 - for Autopunch mode, 86–88
 - comping takes, 115–117
 - defined, 500, 501
 - deleting unused audio files, 99
 - dividing regions by removing silence, 373–376
 - editing audio by reading, 103
 - editing note pitches in workspace, 331–334
 - editing regions, 109, 126–130
 - getting tracks into same groove, 316–317
 - incoming data displayed as, 60
 - moving sections without time-stretching, 326–328
 - muting or deleting marquee selections, 370–372
 - reading, 139
 - recording audio, 72
 - time stretching between transient markers, 321–326
 - Wet signal, Tape Delay plug-in, 418
 - Wi-Fi networks, Logic Remote, 224
 - Wide Channel Strips button, 393
 - windows
 - keyboard shortcuts for, 485–486
 - workflow navigation. See navigation
 - workspace
 - appearance of stereo audio regions in, 127–128
 - color-coded regions identifying instruments in, 344
 - defined, 14, 502
 - editing note pitches in, 331–334
 - editing regions in, 108–111
 - hiding areas in, 23
 - repeating sample patterns in. See copy material, to fill in parts
 - streamlining with track stacks, 386–389
 - Write automation mode, 456
- X**
- X crossfades, 123
 - X S crossfades, 123
 - XY pad puck
 - editing bridge drums performance, 168
 - editing drum performance, 153–154, 157–158, 165–166
 - editing outro section, 172

Z

zoom

- adding lead synths, 33–34
- browsing and previewing loops, 12–13
- creating breaks, 39–40
- defined, 502

- editing MIDI note

 - velocity, 259

- horizontally, 31–32

- in, 26–32

- keyboard shortcuts for,

 - 57, 487

- offline pan automation,

 - 442–443

- out, 29

- time stretching

 - waveforms, 321

- vertically, 32

- volume/stereo position, 45

- Zoom tool, defined, 502

Differentiate yourself. Get Apple Certified.



Stand out from the crowd. Differentiate yourself and gain recognition for your expertise by earning Apple Certified Pro status to validate your Logic Pro X skills.

This book prepares you to pass the Apple Certified Pro – Logic Pro X exam, and earn Apple Certified Pro – Logic Pro X status. The exam is available at Apple Authorized Training Centers (AATCs) worldwide. Earning this certification verifies knowledge of Logic Pro X core functionality, including the ability to record, edit, mix and output audio projects with Logic Pro X.

Three Steps to Certification

- 1 Choose your certification path.
More info: training.apple.com/certification.
- 2 All Apple Authorized Training Centers (AATCs) offer all OS X and Pro Apps exams, even if they don't offer the corresponding course. To find the closest AATC, please visit training.apple.com/locations.
- 3 Register for and take your exam(s).

"Apple certification places you in a unique class of professionals. It not only shows that you care enough about what you do to go the extra mile to get certified, it also demonstrates that you really know your stuff."

— Brian Sheehan, Multimedia Studio Manager,
MFS Investment Management

Reasons to Become an Apple Certified Pro

- **Raise your earning potential.** Studies show that certified professionals can earn more than their non-certified peers.
- **Distinguish yourself from others in your industry.** Proven mastery of an application helps you stand out from the crowd.
- **Display your Apple Certification logo.** Each certification provides a logo to display on business cards, resumes and websites.
- **Publicize your certifications.** Publish your certifications on the Apple Certified Professionals Registry (apple.com/certification/verify) to connect with schools, clients and employers.

Training Options

Apple's comprehensive curriculum addresses your needs, whether you're an IT or creative professional, educator, or student. Hands-on training is available through a worldwide network of Apple Authorized Training Centers (AATCs). Self-paced study is available through the Apple Pro Training Series books, which are also accessible as eBooks via the iBooks app. Video training and video training apps are also available for select titles. Visit training.apple.com to view all your learning options.





The Apple Pro Training Series

Apple offers comprehensive certification programs for creative and IT professionals. The Apple Pro Training Series is both a self-paced learning tool and the official curriculum of the Apple Training and Certification program, used by Apple Authorized Training Centers around the world.

To see a complete range of Apple Pro Training Series books, videos and apps visit: www.peachpit.com/appleprotraining



DISTANT



COUSINS



televisormusic.com

THE BETA MACHINE

WWW.THEBETAMACHINE.COM

[TWITTER.COM/THEBETAMACHINE](https://twitter.com/thebetamachine)

[FACEBOOK.COM/THEBETAMACHINE](https://facebook.com/thebetamachine)



WATCH READ CREATE

Unlimited online access to all Peachpit, Adobe Press, Apple Training and New Riders videos and books, as well as content from other leading publishers including: O'Reilly Media, Focal Press, Sams, Que, Total Training, John Wiley & Sons, Course Technology PTR, Class on Demand, VTC and more.

No time commitment or contract required! Sign up for one month or a year. All for \$19.99 a month

SIGN UP TODAY
peachpit.com/creativeedge

creative
edge