


Full-color, step-by-step
instructional book

Video training from
expert instructors

Tutorials and lesson files
on companion DVD

ADOBE®
PREMIERE® PRO CC

 **DIGITAL
CLASSROOM™**

 Jerron Smith and the AGI Creative Team

WILEY

Adobe®

Premiere® Pro CC

**Digital
Classroom**

Adobe®
Premiere® Pro CC
**Digital
Classroom**

Jerron Smith and the AGI Training Team



Adobe® Premiere® Pro CC Digital Classroom

Published by
John Wiley & Sons, Inc.
10475 Crosspoint Blvd.
Indianapolis, IN 46256

Copyright © 2013 by John Wiley & Sons, Inc., Indianapolis, Indiana
Published simultaneously in Canada
ISBN: 978-1-118-63960-3
Manufactured in the United States of America
10987654321

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6088, or online at <http://www.wiley.com/go/permissions>.

Limit of Liability/Disclaimer of Warranty: The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. This work is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The fact that an organization or website is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or website may provide or recommendations it may make. Further, readers should be aware that Internet websites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services or to obtain technical support, please contact our Customer Care Department within the U.S. at (877) 762-2974, outside the U.S. at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material after registering your book at www.digitalclassroombooks.com/CC/PremierePro. For more information about Wiley products, visit www.wiley.com.

Please report any errors by sending a message to errata@agitraining.com

Library of Congress Control Number: 2013951334

Trademarks: Wiley and the John Wiley & Sons logos are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates in the United States and/or other countries, and may not be used without written permission. The AGI logo is a trademark of American Graphics Institute, LLC in the United States and other countries, and may not be used without written permission. All other trademarks are the property of their respective owners. John Wiley & Sons, Inc. is not associated with any product or vendor mentioned in this book.

Credits

President, American Graphics Institute and Digital Classroom Series Publisher

Christopher Smith

Executive Editor

Jody Lefevere

Technical Editor

Sean McKnight

Editor

Karla E. Melendez

Editorial Director

Robyn Siesky

Business Manager

Amy Knies

Senior Marketing Manager

Sandy Smith

Vice President and Executive Group Publisher

Richard Swadley

Vice President and Executive Publisher

Barry Pruett

Senior Project Coordinator

Katherine Crocker

Project Manager

Cheri White

Graphics and Production Specialist

Jason Miranda, Spoke & Wheel

Media Development Project Supervisor

Chris Leavey

Proofreading

Karla E. Melendez

Indexing

Michael Ferreira

About the Authors

Jerron Smith is an Editor, Animator & Educator. A multi-faceted artist and video producer with nearly two decades of experience, Jerron works with a wide variety of media. He has experience in both digital video/television production, and post-production as well as extensive experience in the multi-media and print design industries. He teaches professional development classes at American Graphics Institute and serves as an adjunct instructor in the Communication Arts department at the New York Institute of Technology, where he instructs courses in computer graphics, animation and video editing. He holds undergraduate degrees in Art and Education and a Masters degree in Communication Arts where he specialized in Computer Graphic technology.

The **AGI Creative Team** is composed of Adobe Certified Experts and Adobe Certified Instructors from American Graphics Institute (AGI). The AGI Creative Team has authored more than 25 Digital Classroom books, and created many of Adobe's official training guides. They work with many of the world's most prominent companies, helping them use creative software to communicate more effectively and creatively. They work with design, creative, and marketing teams around the world, delivering private customized training programs, and teach regularly scheduled classes at AGI's locations. The Digital Classroom authors are available for professional development sessions at companies, schools and universities. More information at agitraining.com.

Acknowledgments

Thanks to my wife, Monique, and daughters Kerowyn and Lauryn for their support during the many months of writing this book as well as the New York Institute of Technology, Terry Snyder and Dr. Michael Banks for teaching me not only how to make a cut, but more importantly why to do so. Thanks also to Cheri, Chris and the whole team at AGI for keeping me focused during this project. Special Thanks to Jeff Jacobs, Kurt Zisa and Donna Betancourt for the use of their video footage. Thanks to the following for permission to use their content in this book:

Jeff Jacobs music video footage courtesy of Jeff Jacobs and Kurt Zisa

Werewolves of Central Park and Travelogue New York video footage courtesy of Donna Betancourt and Silver Cheese Productions

Travelogue Boston video footage courtesy of Chris Leavey at American Graphics Institute

Register your Digital Classroom book for exclusive benefits

Registered owners receive access to:



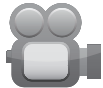
The most current lesson files



Technical resources and customer support



Notifications of updates



Online access to video tutorials



Downloadable lesson files



Samples from other Digital Classroom books

Register at *DigitalClassroomBooks.com/CC/PremierePro*

Digital Classroom

Register your book today at
DigitalClassroomBooks.com/CC/PremierePro

Contents

Starting Up



About Adobe Premiere Pro CC Digital Classroom	1
Prerequisites	1
System requirements	2
Starting Adobe Premiere Pro	3
Resetting the Adobe Premiere Pro preferences	4
Access lesson files and videos any time	4
Checking for updated lesson files	4
Loading lesson files	4
Locating missing media	5
Working with the video tutorials	6
Setting up for viewing the video tutorials	7
Additional resources	8

Lesson 1: Understanding Digital Video



Starting up	9
Understanding digital Non-Linear Editing	9
Understanding video settings	10
Editing vs. delivery formats	11
Tape-based vs. tapeless formats	11
High definition vs. standard definition	12
Progressive video vs. interlaced video	13
Premiere Pro presets	14
Overview of the post production workflow	15
Media acquisition	16
Editorial development	16
Graphics development	16
Audio development	16
Finishing	17
Mastering	17
Output and delivery	17
Self study	18
Review	18

Lesson 2: Understanding the Workspace



Starting up	19
Understanding the Premiere Pro interface	20
Understanding the default Editing workspace.....	20
Understanding the tools.....	22
Customizing the interface	24
Opening, closing, and moving panels.....	24
Saving a custom workspace.....	28
Setting application preferences	29
Using the Project panel.....	31
Understanding media management.....	31
Creating and organizing bins	34
Modifying the Project panel display	38
Locating missing media	46
Self study.....	49
Review	49

Lesson 3: Prepping Files in Prelude



What is Adobe Prelude?	52
Supported formats for ingest and logging	53
Formats that can be ingested but not logged	53
Ingesting video	54
Organizing clips.....	59
Logging video	60
Adding Comment markers.....	63
Adding Subclip markers	67
Creating a rough cut	68
Exporting to Premiere Pro	69
Self Study.....	71
Review	71

Lesson 4: Making the Cut



Starting up	73
The cuts-only editing methodology	74
A Roll vs. B Roll.....	74
Cut-ins and Cut-aways.....	74

Cutting on action	75
Trimming clips in the Source Monitor.....	75
Using multiple video tracks	82
Adding and deleting tracks in the Timeline.....	82
Renaming tracks	84
Adding clips to the Timeline	85
Trimming clips on the Timeline.....	88
Using the Razor tool.....	92
Making an Insert edit.....	94
Self study.....	98
Review	98

Lesson 5: Adding Transitions to Video



Starting up	99
Understanding video transitions	100
Adding transitions to video clips	101
Preparing a clip to receive transitions.....	102
Adding a transition between clips.....	107
Editing transition settings	113
Creating an image slideshow	117
Self study.....	127
Review	127

Lesson 6: Working with Graphics



Starting up	129
Creating titles in Premiere Pro.....	130
Using the Titler.....	131
Creating a lower third	133
Adding text to the Titler	134
Formatting text boxes	137
Formatting text	142
Creating shapes.....	145
Adding images to a title	148
Saving a title style.....	151
Creating a title overlay track	152
Saving a title for later reuse	155

Creating an ending credit roll	156
Controlling the speed of a title roll	160
Editing titles	163
Working with Photoshop files	165
Importing layered Photoshop files	166
Animating the position of clips	169
Animating the opacity of clips	173
Self study	177
Review	177

Lesson 7: Using Video Effects



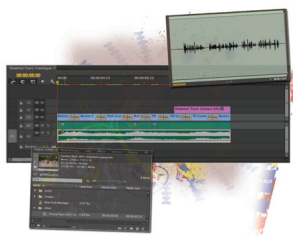
Starting up	179
What are video effects?	180
Applying video effects	180
Creating a Black & White effect	180
Animating the opacity of clips	183
Adjusting the tonality of clips	186
Making quick color adjustments	190
Using the Warp Stabilizer	194
Self study	197
Review	197

Lesson 8: Video Compositing



Starting up	199
Working with Track Mattes	200
Preparing the clip for a Track Matte	200
Applying and editing the Track Matte Key effect	202
Using the Ultra Keyer	204
Creating a garbage matte	206
Applying the Ultra Key	208
Spill Suppression and Color Correction	211
Self Study	212
Review	212

Lesson 9: Working with Audio



Starting up	213
Understanding digital audio	214
Understanding audio tracks.....	214
Stereo audio	214
Mono audio.....	215
5.1 audio	215
Stripping audio from a video file	216
Audio channel mapping	220
Adding more audio tracks to the Timeline.....	226
Making a Three-Point edit on the Timeline	228
Setting volume keyframes	233
Improving audio in Premiere Pro	235
Self study.....	239
Review	239

Lesson 10: Advanced Editing Techniques



Starting up	241
Creating subclips.....	242
Using Automate to sequence	246
Making a Three-Point edit	248
Setting an In Point on the Timeline	249
Setting In and Out Points on a clip.....	250
Making Ripple and Roll Edits.....	252
Making Slip and Slide Edits	256
Adjusting the clip speed	259
Self study.....	262
Review	262

Lesson 11: Outputting Your Video



Starting up	263
Output for the Web and desktop	264
Flash video and the Flash player.....	264
Windows Media and the Silverlight player	264
QuickTime video and the QuickTime player	264
HTML5 Video	265

Understanding formats and codecs.	265
Understanding temporal and spatial compression.	266
Understanding bit rate	266
Understanding frame rate and resolution	266
Understanding aspect ratio and pixel aspect ratio	267
Progressive display vs. interlacing	269
Exporting an H.264 file for mobile devices	270
Creating a custom export preset	274
Exporting with the Adobe Media Encoder	277
Self study.	280
Review	280

Appendices

Appendix A: Premiere Pro Panels	281
Appendix B: Adobe Premiere Pro Keyboard Shortcuts	293
Appendix C: Premiere Pro Input and Output formats	307
Appendix D: Capturing and Transferring Footage.	311
Appendix E: Using Adobe Encore.	321

About Adobe Premiere Pro CC Digital Classroom

Adobe® Premiere Pro lets you edit and create video for a variety of platforms. Premiere Pro provides you with the editing tools to express your creative ideas for video, film and online broadband delivery. Premiere Pro is also tightly integrated with other Adobe products such as Photoshop, Illustrator, and After Effects so that you can integrate graphics and special effects into your projects. Because Premiere Pro is a professional tool, there is a great deal you will need to understand to use it effectively for creating great video content. Fortunately the Digital Classroom provides everything you need to get up-and-running quickly.

The *Adobe Premiere Pro CC Digital Classroom* is like having your own personal instructor guiding you through each lesson while you work at your own speed to gain an understanding of essential Premiere Pro skills. This book and DVD combination includes 11 self-paced lessons that let you discover essential skills and explore the new features and capabilities of Premiere Pro on either a Mac OS or Windows computer. Each lesson includes step-by-step instructions, lesson files, and video tutorials, all of which are available on the included DVD. If you purchase an electronic book, all the resources from the DVD are available on a readers-only website. Information on how to access the files is included with the downloaded version of the book. This book has been developed by the same team of Adobe Certified Experts and Premiere Pro professionals who have created many official training titles for Adobe Systems.

Prerequisites

The *Adobe Premiere Pro CC Adobe Digital Classroom* is designed to give you the essential skills you need so you can quickly get up-and-running with video editing. Before you start the lessons in this book, you should have a working knowledge of your computer and its operating system. You should know how to use the directory system of your computer so that you can navigate through folders. You need to understand how to locate, save, and open files. You should also know how to use your mouse to access menus and commands. If you need help getting started with your operating system, the Digital Classroom series includes books covering Mac OS X and Windows. Learn more at DigitalClassroom.com.

Before starting the lessons in the *Adobe Premiere Pro CC Digital Classroom*, make sure that you have installed Adobe Premiere Pro CC. The software is sold separately, and not included with this book. You may use the 30-day trial version of Adobe Premiere Pro available at the adobe.com website, subject to the terms of its license agreement.

System requirements

Before starting the lessons in *Adobe Premiere Pro CC Digital Classroom*, make sure that your computer is equipped for running Adobe Premiere Pro, which you must purchase separately. The minimum system requirements for your computer to effectively use the software are listed on the following page.

System requirements for Adobe Premiere Pro CC

Following are system requirements for Windows and Mac OS computer systems to use Premiere Pro.

Windows

- Intel® Core™2 Duo or AMD Phenom® II processor; 64-bit support required
- Windows 7 with Service Pack 1, Windows 8, or Windows 8.1
- 4 GB of RAM (8 GB recommended)
- 4 GB of available hard-disk space for installation
- Additional disk space required for preview files (10 GB recommended)
- 1280 × 800 display
- 7200 RPM or faster hard drive (multiple fast disk drives, preferably RAID 0 configured, recommended)
- Sound card compatible with ASIO protocol or Microsoft Windows Driver Model
- QuickTime 7.6.6 software required for QuickTime features
- Optional: Adobe-certified GPU card from list below with at least 1 GB VRAM for GPU accelerated-performance
- Internet connection and registration are necessary for required software activation, membership validation, and access to online services.*

Mac OS

- Multicore Intel processor with 64-bit support
- Mac OS X v10.7, v10.8, or v10.9
- 4 GB of RAM (8 GB recommended)
- 4 GB of available hard-disk space for installation; additional free space required during installation (cannot install on a volume that uses a case-sensitive file system or on removable flash storage devices)
- Additional disk space required for preview files and other working files (10 GB recommended)
- 1280 × 800 display
- 7200 RPM hard drive (multiple fast disk drives, preferably RAID 0 configured, recommended)
- QuickTime 7.6.6 software required for QuickTime features
- Optional: Adobe-certified GPU card from list below with at least 1 GB VRAM for GPU accelerated-performance
- Internet connection and registration are necessary for required software activation, membership validation, and access to online services.*

For a list of video cards that support GPU acceleration when used with Premiere Pro you can check out the application's technical specifications at: <http://www.adobe.com/products/premiere/tech-specs.html>.

Starting Adobe Premiere Pro

As with most software, Adobe Premiere Pro is launched by locating the application in your Programs folder (Windows) or Applications folder (Mac OS). If necessary, follow these steps to start the Adobe Premiere Pro application:

Windows

- 1 Choose Start > All Programs > Adobe Premiere Pro. If you have the Creative Suite installed, you may have to select and start Adobe Premiere Pro from within the Creative Suite folder. (Alternatively, you can use the search field located in the Start menu to find the Premiere Pro application.)
- 2 From the Premiere Pro Welcome Screen you can choose to either create a new project or open an existing project. If you close the Premiere Pro Welcome Screen, it will close the application.

Mac OS

- 1 Open the Applications folder, and then open the Adobe Premiere Pro folder.
- 2 Double-click on the Adobe Premiere Pro application icon. You may also wish to drag it to the dock for easy access as you start each lesson, and use it for editing your video files.
- 3 From the Premiere Pro Welcome Screen you can choose to either create a new project or open an existing project. If you close the Premiere Pro Welcome Screen, it will close the application.



Menus and commands are identified throughout the book by using the greater-than symbol (>). For example, the command to save a document would be identified as File > Save.

Resetting the Adobe Premiere Pro preferences

When you start Adobe Premiere Pro, it remembers certain settings along with the configuration of the workspace from the last time you used the application. It is important that you start each lesson using the default settings so that you do not see unexpected results when working with the lessons in this book. Use the following steps to reset your Adobe Premiere Pro preferences.

Steps to reset Adobe Premiere Pro preferences

- 1 Quit Premiere Pro.
- 2 Start Premiere Pro. and immediately press the Option key (Mac OS) or Alt key (Windows). Continue to hold down the key until you see the Premiere Pro Welcome Screen.



When resetting the Premiere Pro preferences there is no confirmation message that you have been successful. Your first indication that the task has been accomplished will be the empty list of Recent Files on the Welcome Screen.

Access lesson files and videos any time

Register your book at www.digitalclassroombooks.com/CC/PremierePro to gain access to your lesson files on any computer you own, or watch the videos on any Internet-connected computer, tablet, or smart phone. You'll be able to continue your learning anywhere you have an Internet connection. This provides you access to lesson files and videos even if you misplaced your DVD.

Checking for updated lesson files

Make sure you have the most up-to-date lesson files and learn about any updates to your Premiere Pro CC Digital Classroom book by registering your book at www.digitalclassroombooks.com/CC/PremierePro.

Loading lesson files

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

For each lesson in the book, the files are referenced by the file name of each file. The exact location of each file on your computer is not used, as you may have placed the files in a unique location on your hard drive. We suggest placing the lesson files in the My Documents folder (Windows) or at the top level of your hard drive (Mac OS).

Copying the lesson files to your hard drive

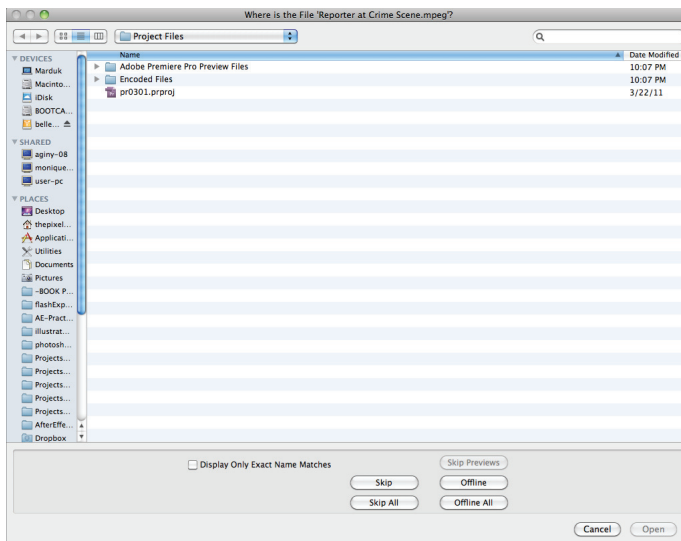
- 1 Insert the *Adobe Premiere Pro CC Digital Classroom DVD* supplied with this book.
- 2 On your computer desktop, navigate to the DVD and locate the folder named *prlessons*.
- 3 You can install all the files, or just specific lesson files. Do one of the following:
 - Install all lesson files by dragging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

Locating missing media

Premiere Pro creates a link between your project files and the files that you import into the Project panel. This linkage system allows you to have a very small project file, but at the same time requires that you manage the media you are using in your projects. If you move, rename, or delete files that you are using in a project you will receive a missing media warning when Premiere Pro starts up. You should always locate any missing files before attempting to proceed with your project.

The process for locating missing files is automatic and will help you find video, audio, still images, and even preview files.

- 1 When presented with a file browser, verify the file name at the top of the dialog box. This is the file that you are currently trying to locate.



Premiere Pro requests that you locate any missing files at the time a project is opened.

- 2 Navigate to the missing file, highlight it, and then press the *Open* button to relink the file. After locating all missing files, the project will open.

If your missing files are still in the same relative folder structure as when they were first imported into your project, then Premiere Pro should locate them all once it knows the location of the first one. If it cannot automatically find other missing files, you will have to locate them manually. Once all missing files have been found or skipped, the project will open.

There are technically three options when attempting to locate missing files; you can find the file and open it, skip the specific file, or set the file as offline. Offline files can be brought online by right-clicking on them in the Project panel and choosing Link Media from the menu that appears. In addition to the ability to skip and offline individual files, you also have buttons to skip and offline all files the application is currently attempting to locate.

Unlocking Mac OS files

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

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

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

- 1 After copying the files to your computer, click once to select the lessons folder, then choose File > Get Info from within the Finder (not Premiere Pro).
- 2 In the lessons info window, click the triangle to the left of Sharing and Permissions to reveal the details of this section.
- 3 In the Sharing and Permissions section, click the lock icon (🔒), if necessary, in the lower-right corner so that you can make changes to the permissions.
- 4 Click to select a specific user or select everyone, then change the Privileges section to Read & Write.
- 5 Click the lock icon to prevent further changes, and then close the window.

Working with the video tutorials

Your *Adobe Premiere Pro CC Digital Classroom* DVD comes with video tutorials developed by the authors to help you understand the concepts explored in each lesson. Each tutorial is approximately five minutes long and demonstrates and explains the concepts and features covered in the lesson.

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

lesson number, indicates that an overview of the exercise being described can be found in the accompanying video.



DVD video icon.

Setting up for viewing the video tutorials

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

Copying the video tutorials to your hard drive

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

Viewing the video tutorials with the Adobe Flash Player

The videos on the *Adobe Premiere Pro CC Digital Classroom DVD* are saved in the Flash projector format. A Flash projector file wraps the Digital Classroom video player and the Adobe Flash Player in an executable file (.exe for Windows or .app for Mac OS). However, please note that the extension (on both platforms) may not always be visible. Projector files allow the Flash content to be deployed on your system without the need for a browser or prior stand-alone player installation.



The accompanying video files on the DVD use the Adobe Flash Video format to make universal viewing possible for users on both Windows and Mac OS computers.

Playing the video tutorials

- 1 On your computer, navigate to the *videos* folder you copied to your hard drive from the DVD. Playing the videos directly from the DVD may result in poor-quality playback.
- 2 Open the *videos* folder and double-click the Flash file named *PLAY_PRCCvideos* to view the video tutorial.
- 3 After the Flash player launches, press the Play button to view the videos.

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



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



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

Additional resources

The Digital Classroom series goes beyond the training books. You can continue your learning online, with training videos, at seminars and conferences, and in-person training events.

On-demand video training from the authors

Comprehensive video training from the authors are available at *DigitalClassroom.com*. Find complete video training along with thousands of video tutorials covering After Effects and related Creative Cloud apps along with digital versions of the Digital Classroom book series. Learn more at *DigitalClassroom.com*.

Training from the Authors

The authors are available for professional development training workshops for schools and companies. They also teach classes at American Graphics Institute, including training classes and online workshops. Visit *agitraining.com* for more information about Digital Classroom author-led training classes or workshops.

Additional Adobe Creative Cloud Books

Expand your knowledge of creative software applications with the Digital Classroom book series. Books are available for most creative software applications as well as web design and development tools and technologies. Learn more at *DigitalClassroomBooks.com*

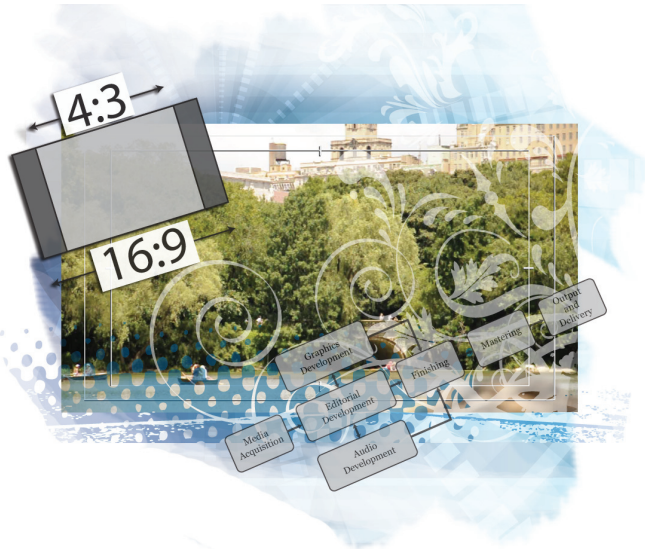
Seminars and conferences

The authors of the Digital Classroom seminar series frequently conduct in-person seminars and speak at conferences, including the annual CRE8 Conference. Learn more at *agitraining.com* and *CRE8summit.com*.

Resources for educators

Visit *digitalclassroombooks.com* to access resources for educators, including instructors' guides for incorporating Digital Classroom into your curriculum.

Lesson 1



What you'll learn in this lesson:

- To understand the difference between editing and delivery formats
- To understand the difference between high-definition and standard-definition video formats
- To understand the digital post-production workflow

Understanding Digital Video

Before you begin editing in Premiere Pro, it is beneficial to become familiar with some of the concepts and principles that define the art and craft of video editing.

Starting up

You will not need any files for this lesson.



See Lesson 1 in action!

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

Understanding digital Non-Linear Editing

When you watch a video or film, what you are actually watching is a series of still images displayed sequentially at a high rate of speed. Each image, called a frame, is displayed on screen for a very short period of time (anywhere between 1/24th to 1/30th of a second), creating the illusion of continuous motion. In the past, the only way to edit film or video was using a linear system. That is, an editor had to advance a film reel or tape to a specific part and cut or copy from that point forward. If she or he then wanted to edit another part of the

footage, they had to advance the entire reel or tape to a new location and start again. It could be a very tedious and time-consuming process. Adobe Premiere Pro is an example of a digital NLE (Non-Linear Editor): it gives you direct and immediate access to any frame in a digital video clip at any time. In an NLE process, you use computer data instead of a physical linear medium, such as film or tape, and you can jump back and forth along your timeline at any point in the editing process. Unlike traditional graphic image processes, this is a non-destructive process because the original source footage is never lost or altered. The media links that you import or capture in Premiere Pro are only references to the original footage stored on your hard drive.

The video and audio footage that you edit in Premiere Pro can be digitized from an analog source, such as a VHS or cassette tape, or recorded directly to a digital format, as is the case with modern video cameras as well as other hard drive and compact flash-based recording devices.

Understanding video settings

In Premiere Pro, you generally work by building sequences to match the standards of the media you are going to work with instead of the intended output. There are many types of video files you can work with in Premiere Pro. The various formats, aspect ratios, codecs, and other settings used to describe video files will be explained in this book. The following terms will help you:

Dimensions: specifies the pixel dimensions of a video file; in other words, the number of pixels horizontally and vertically that compose an image or video frame. This value is usually written as a pair of numbers separated by an X, where the first number is the horizontal value and the second represents the vertical; for example, 720 × 480. Pixel is a conjunction of the words “picture” and “element” and is the smallest individual component in a digital image.

Frame rate: specifies the number of individual images that compose each second of video. Frame rate is displayed as a value of fps (frames per second).

Pixel Aspect Ratio: specifies the shape of the pixels that compose an image. Pixels are the smallest part of a digital image and different display devices (televisions, computer monitors, etc.) have pixels with different horizontal and vertical proportions.

Editing vs. delivery formats

While working through the many lessons presented in this text you are going to encounter many new concepts and terms, especially when you are dealing with video footage. When working with video in Premiere Pro you will encounter many different video formats and the codecs (compressor/decompressor) used to compress them while editing the video files throughout the lessons in this book and when working on your own. Most computer users are familiar with the term “format” used to describe files, for example, jpeg and tiff formats for images, or doc and ppt formats for Word and PowerPoint files. However, for video files, formats such as Quicktime and AVI are only containers that hold video information; much like a file folder holds paper. You can describe the relationship between formats and codecs this way: formats are the containers; codecs are the language the contents are written in.

Codec is a conjunction made from the words “compressor” and “decompressor.” Codecs are mathematical algorithms used to shrink audio and video files to manageable sizes. Video files are very large; for example, 20 minutes of NTSC DV video (from a standard definition miniDV camcorder) is over 4 GB in size, which is the capacity of one single-layer DVD. Without video codecs, you could not easily save and store archived video footage; video would also never be small enough to watch online, by e-mail, or on a mobile device. To view an audio or video file, you must have a player compatible with the format and have on your computer the codec used to compress the video file, so you can decompress it.

Traditionally, the codecs used to capture and edit footage were uncompressed or offered very little compression, while the codecs used to deliver the final files to the viewers were far more compressed. With the proliferation of high-definition video equipment, this has changed: many cameras now use MPEG-2 or MPEG-4 codecs to reduce files to manageable sizes for storage and editing.

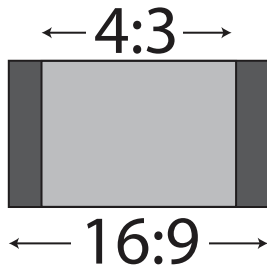
Tape-based vs. tapeless formats

Prior to the proliferation of high-definition devices, camcorders relied on physical tapes to record data. VHS, Beta-max, DigiBeta, and MiniDV are examples of tape-based formats. While the tape-based workflow served the video industry well for many years, there were drawbacks to using it. Being a physical medium, tapes would eventually degrade with reuse, so they had a limited lifespan. Additionally, since tapes are a linear format used for transferring footage stored on a digital tape to a computer—a process known as *capturing*—this could only be performed in real-time. In other words, if you had one hour of video footage to capture, it took a full hour to do so. Tapeless, also called file-based formats, use hard-disk drives or flash drives to store video footage. When using a tapeless system, a new file is created whenever the camera person presses the record/pause button on the camcorder. This offers instant access to any recorded scene without the need to cue up a specific tape location.

With the expansion of the high-definition camcorder market, consumer, prosumer, and professional-level camcorders now rely almost exclusively on tapeless, file-based storage systems. These tapeless camcorders have blurred the line between editing and delivery formats, since most of them use either an MPEG-2 or MPEG-4 codec on the recorded video.

High definition vs. standard definition

Standard definition footage adheres to the NTSC (National Television Standards Committee) or PAL (Phase Alternating Line) standards, which are the standards for video used in the United States of America and most of the rest of the world, respectively. Standard definition footage usually has an aspect ratio of 4:3; in other words, there are four horizontal units for every three vertical units of measure. Prior to the invention of high-definition television, NTSC was the only standard for broadcast video in the United States. NTSC included settings for both 4:3 and 16:9 (widescreen) aspect ratios. In the age of Digital Television broadcasts, the NTSC has been replaced by the ATSC (Advanced Television Systems Committee) standards; however, the term NTSC is still used by most video cameras, editing, and graphics applications to refer to standard definition broadcast quality video.



There are other aspect ratios used in video, but 4:3 and 16:9 are the most common.

NTSC & NTSC Widescreen: The NTSC presets include settings for standard (4:3) and widescreen (16:9) aspect ratios. The dimensions for both are 720x480, but the pixel aspect ratio is different, which accounts for the difference in shape. Pixel aspect ratio (PAR) is the ratio or shape of the pixels that compose each individual part of a single video frame. Both versions of the NTSC standard use a frame rate of 30 fps.

PAL & PAL Widescreen: PAL is the standard for broadcast television used throughout Europe and much of the rest of the world. PAL differs from NTSC in several key ways; such as dimensions and frame rate. It uses a frame rate of 25 fps, which is closer to the 24fps used in film and according to some video professional produces more realistic imagery. Similar to NTSC, PAL has standard (4:3) and widescreen (16:9) settings. A frame size of 720x576 is shared by both, and the pixel aspect ratio gives each their unique frame shape.

High Definition: High Definition (HD) television technology has existed for decades, but it was during the early 21st century that it became popular with average American television viewers. The term HD describes video with a higher resolution than traditional television systems, now called SD or standard definition. There are two main high definition standards for broadcast television: 720P and 1080i; many televisions and Blu-ray disk players support a third standard: 1080P.

720P: the 720P format has a resolution of 1280 pixels wide by 720 pixels high and supports a variety of frame rates, from the 24 fps used by film and the 30 fps that was part of the old NTSC standard, to 60 fps.

1080P & 1080I: the 1080 formats exist in Interlaced and Progressive versions; as with other modern digital standards, these formats support a variety of frame rates, such as 24 fps, 30 fps and beyond.

Progressive video vs. interlaced video

The two methods of displaying images on a video screen are Progressive display and Interlacing. When discussing video formats, the letter P or I are often stated at the end of the format. For example, 1080p or 1080i footage denote whether it is progressive or interlaced. In the United States, and before changing to a digital broadcasting system, televised images were sent as interlaced signals in which every frame of video was made by combining two half-images called fields.

Before the advent of high-definition LCD and Plasma screens, televisions were made by wrapping a plastic or wooden frame around a large, hollow glass device called a Cathode Ray Tube (CRT). These CRT television screens were composed of a series of even and odd numbered lines called scan lines, and each frame of video was displayed by illuminating these lines starting at the top of the screen. Interlacing was created to display video signals on this type of TV set and worked by illuminating one set of lines first (even or odd numbered), and then moving back to the top of the display to illuminate the other set. In this way, the display would show the second set of lines when the first set of lines began to fade; the result was a complete picture for the viewer. This process occurred 60 times a second with NTSC broadcast television. Unlike Interlacing, Progressive display illuminates the scan lines sequentially from top to bottom.

Most modern televisions can display in interlaced and progressive mode, and the ATSC includes broadcast standards for both, while all computer monitors use progressive display only. The difference between the two display methods occurs in video camera formats as well; older NTSC or PAL cameras can only shoot interlaced video, but many newer cameras let you choose between interlaced and progressive shooting modes, for example, 50i (25 fps), 60i (30 fps), 30p (30 fps), and 24p (24 fps). When working in Premiere Pro, we highly recommend that you use the sequence settings that match the settings of the footage you are working with.

Premiere Pro presets

In Premiere Pro, your projects are organized and arranged into Sequences. The video you are going to edit is added to these Sequences, where it can be trimmed, moved, arranged, and otherwise adjusted. Before you can edit video in Premiere Pro you must create a sequence inside your project. This sequence is your main editing and assembling environment.

The application includes pre-built settings for sequences called presets. With the recent proliferation of high-definition video equipment and non-tape based recording media (cameras that store video on hard drives or flash drives instead of traditional tape) you can use a wide variety of formats and specifications. Tapeless camcorders, also known as file-based devices, usually record to hard-disks, optical media, or flash memory media, instead of to videotape, and save video and audio files using formats and codecs often specific to each device. Tapeless formats supported by Premiere Pro include Panasonic P2 camcorders, Sony XDCAM HD and XDCAM EX camcorders, Sony CF-based HDV camcorders, and AVCHD camcorders.

In this section, you will learn about some of the common standards as they apply to working in Premiere Pro.

DV NTSC, DV PAL, DV 24P

The DV (Digital Video) standard comes in three varieties: NTSC, PAL, and 24P, all of which should be used in conjunction with IEEE1394 (FireWire/i.LINK) DV equipment. All three varieties of video come in standard (4:3) and widescreen (16:9) aspect ratios and have variations to support two standard rates for audio sampling: 32 and 48 kHz.

AVCHD

AVCHD is an acronym for Advanced Video Coding High Definition, a video format developed for the recording and playback of high-definition digital video. This tapeless format was created primarily for use in consumer and prosumer level camcorders, but it has also been adopted for use in some professional level equipment. The AVCHD presets in Premiere Pro support 720p, 1080i, and 1080p video footage, each at a variety of frame rates.

DVCPRO & DVCPROHD

Panasonic developed DVCPRO as a variation of the standard DV format. This tape-based format was developed to improve the standard definition DV format by increasing its robustness and feature set, and is an alternative to the DVCAM format developed by Sony. DVCPROHD was created as an enhanced version of the preceding DVCPRO format. The DVCPRO50 presets in Premiere Pro can create sequences compatible with 480i (NTSC) and 576i (PAL) video formats; the DVCPROHD presets can create sequences for footage recorded at 720p, 1080i, or 1080p in a range of frame rates from 24fps to 60fps.