

Cinema 4D:
The Artist's Project Sourcebook
Third Edition

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Focal Press is an imprint of Elsevier
225 Wyman Street, Waltham, MA 02451, USA
The Boulevard, Langford Lane, Kidlington, Oxford, OX5 1GB, UK

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Library of Congress Cataloging-in-Publication Data

McQuilkin, Kent.

Cinema 4D : the artist's project sourcebook / Kent McQuilkin. -- 3rd ed.
p. cm.

Rev. ed. of: Cinema 4D / Anne Powers. 2007.

ISBN 978-0-240-81450-6 (pbk.)

1. Computer animation. 2. Three-dimensional display systems. 3. Cinema 4D XL. 4. Computer graphics. 5. Rigging (Computer animation) I. Powers, Anne. Cinema 4D. II. Title.

TR897.7.P69 2011

006.6'93--dc22

2011009865

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

For information on all Focal Press publications
visit our website at www.elsevierdirect.com

11 12 13 14 5 4 3 2 1

Printed in the China

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Acknowledgements

This book would not be possible without the help, support and knowledge of the following individuals. I owe a great deal of gratitude:

To Dennis McGonagle, Carlin Reagan and Anne McGee of Focal Press, for their insight, support and the opportunity to author this book.

To Anne Powers, for creating a non-technical book series that puts tools to practical uses and has helped spark the imagination of so many 3D enthusiasts and professionals.

To Michael Hewes, Rick Barrett and all of the great team at MAXON, for their incredible knowledge and endless supply of answers and support.

To Ray Davis of Pixar, who went to infinity and beyond in getting RenderMan up and running and up and running again when I fouled things up.

To Ihor Petelycky and Spatial View, for an incredible program and even better support.

To Matt Riveccie of e-on, for all of the extraordinary amount of support in keeping me up to date with Vue.

To Cormac Slevin and Antonio Manfredi at Digital Video S.p.A, for their insight in combining the 2D animation of Toonz with 3D assets.

To Kent Braun of DigiCel, for many great years of support and his amazing knowledge of animation and dedication to bringing 2D animation to students, hobbyists and professionals alike with FlipBook Pro.

To Rosanna Thomson and the team at Next Limit Technologies for their support and help with RealFlow.

To Chris Smith, Tom Quach and Rob Garrott, for taking the time out of their busy schedules to be a part of this book and provide their expert insight into the tools of their respective trades.

To David Gilbert, for introducing me to the teaching profession years ago and allowing me to learn at least as much as I've taught.

To Austin Webb, for his time and expertise in photography and for shooting great shots for textures and scene creation.

To my good friend Fikremarium for his interest and willingness to allow me to build his head in my computer and put it on display.

To my brother, Steven and father, Tom, for all of their support, inspiration and encouragement though out this process.

To my mom, for being the best mother I could ever ask for and all the great texture photos and editing advice she supplied. Thanks for all of the time you put in, and for always being supportive.

To my wife, Sally, and my four precious children, Max, Emma, Samuel, and Khari. You all are my treasures. Thank you for all the sacrifices you've made as I've been in this process.

Above all, I thank God for every second I have on this Earth and the incomparable love, and compassion He has for all mankind.



Introduction to CINEMA 4D

MAXON understands that making a transition into 3D graphics and animation can be a daunting proposition for artists already pressed for time keeping up with the ever evolving progression of more traditional graphics technology. With that in mind, they have crafted CINEMA 4D, a software that is intuitive yet amazingly powerful. Using this application, a traditionally trained artist can instantly create mind-boggling graphics and animation. At the same time, this application has the depth to keep artists challenged and engaged to push the boundaries of image creation. Users will find that anything imaginable is attainable in this software. CINEMA 4D has created a name for itself as a motion graphics and texture painting power house but, as you will see in this book, it is an all-inclusive tool to create any animation imaginable.

Enjoy!

Who This Book Is For and How It's Different

This book is about creating all kinds of artistic imagery using CINEMA 4D as a tool. It is intended to be an enjoyable, attainable, and thorough introduction to the creatively fluent use of C4D. In addition to being a great start for beginners, it will encourage new ways of working and thinking for more seasoned C4D users. It is especially suited for artists who may feel overwhelmed by the technical complexities of 3D or traditional artists wishing to quickly add professional quality 3D graphics and animation to their skillsets.

Artists of all kinds--illustrators, motion graphics and print graphic designers, as well as those who wish to animate characters, create content for gaming or dynamic force driven simulations --will find engaging step-by-step examples that can be easily adapted to their purposes.

The projects in this book have been created to suit the classroom, provide training for professionals looking to transition into 3D, as well as help the learner at home. The project-based approach of this book quickly rewards the reader with results. The text and DVD examples introduce concepts without restating the extensive built-in Help system included in CINEMA 4D. The focus of this book is to provide step-by-step workflows for creating professional 3D graphics and display the artistic possibilities of CINEMA 4D. Furthermore, this book takes into consideration that, as a beginner you will need a solid foundation in all areas of the entire 3D process. Technical explanations of tools can be found in the built in help system.

The DVD

The DVD included with this book is not simply supplemental, but is actually an extension of this book that was unable to fit in the pages provided. You will find an entire chapter with almost 150 pages of advanced modeling and scene layout in the Advanced Modeling chapter of the DVD alone. You'll also discover how to set up an IK chain and animate a T-Rex. In the After Effects Integration chapter of the DVD, you'll see how to build a scene specifically optimized for output to AE. There are tons of more extras including Vue 9xStream, ZBrush and Realflow integration as well. Be sure to check out the numerous instructional videos included in the DVD_Support_file chapters and the New_in_R12_Movies folder to find movies covering the latest tools and techniques developed for Release 12.



The 4D Environment and Workflow

The first question many people ask me when they hear about CINEMA 4D is, "What is 4D?" The common reference to 3D encompasses the three spatial dimensions used to create and manipulate objects. The 4th dimension reference in C4D is that of time. How objects and components change over time is, of course, the underlying foundation of animation. When you first open CINEMA 4D and begin to work, the graphical user interface allows you to create and manipulate objects in a virtual 3-dimensional environment within the element of time. The workspace is infinite in size and can be configured with any units of measurement. Numerous tools allow you to create and animate objects that can be viewed through virtual cameras. Along with objects and cameras, you'll find all the elements of a fully functional production house. Lights, backgrounds, virtual skies, effects, foreground elements and mood changing environments can all be found within this one application. To understand how to be successful at creating 3D content, it is vital that you have a grasp on the core areas that make up the 3D process. This new edition of *CINEMA 4D The Artist's Project Sourcebook* aims to give readers a look at how CINEMA 4D can be utilized to meet the demands of the 3D marketplace today. The 3D marketplace is spread into many vast disciplines of which this book will give a glimpse of the workflow and tools to get you on your way to succeed, regardless of where your future in 3D takes you. We will begin by covering the basics of 3D. Rather than separating these into isolated practices, we are going to build complete scenes from the beginning, allowing readers to see the full picture of how these disciplines interrelate to make a successful 3D composition. These principles include, but are not limited to: modeling, texturing, staging, animating, lighting, effects and rendering. Advanced workflows may add rigging and compositing to the process. Regardless of what field an individual enters, the mastering of these core principles is vital to succeed at the top level of any 3D profession.

Introduction to the Basics of CINEMA 4D: DVD Chapter

Be sure to check out the *Cinema_4D_Basics.pdf* chapter included on the DVD. It includes charts labeling and explaining the locations and usage of tools and icons within the C4D interface. You'll also find an overview of all the Parametric Primitives, Splines, NURBS and other Modeling helpers and generators that you will use to create 3D scenes.





Modeling

Modeling refers to the creation of objects and shapes within 3D. Think of it as digital sculpting.

Texturing

Applying materials to models and scene components to control the appearance of objects.

Staging

Framing the scene by moving the objects into the correct position as well as setting up cameras to capture the action.

Animation

Animation consists of any 3D elements and how their appearance changes over a specified time.

Lighting

An infinite number of virtual lights can be added to 3D scenes to create any lighting scheme imaginable.

Effects

In CINEMA 4D, the term “effects” can be applied to anything from fog and smoke to particles, hair and dynamics. Effects often time are incorporated in post.

Rendering

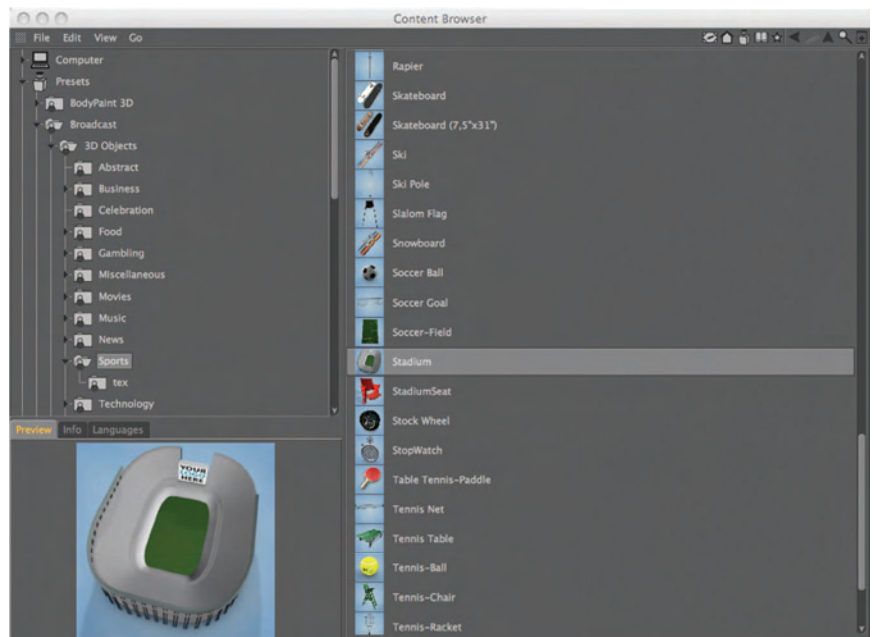
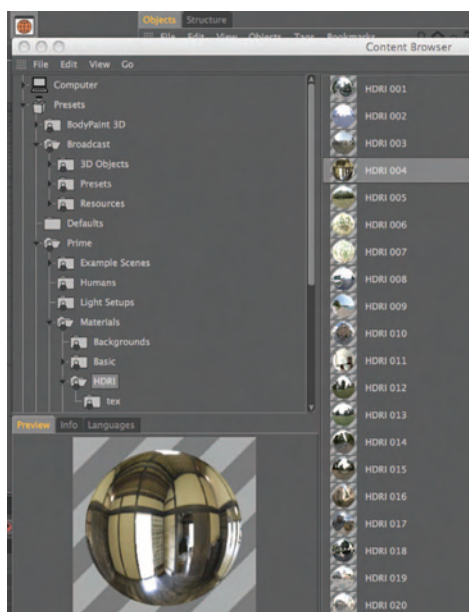
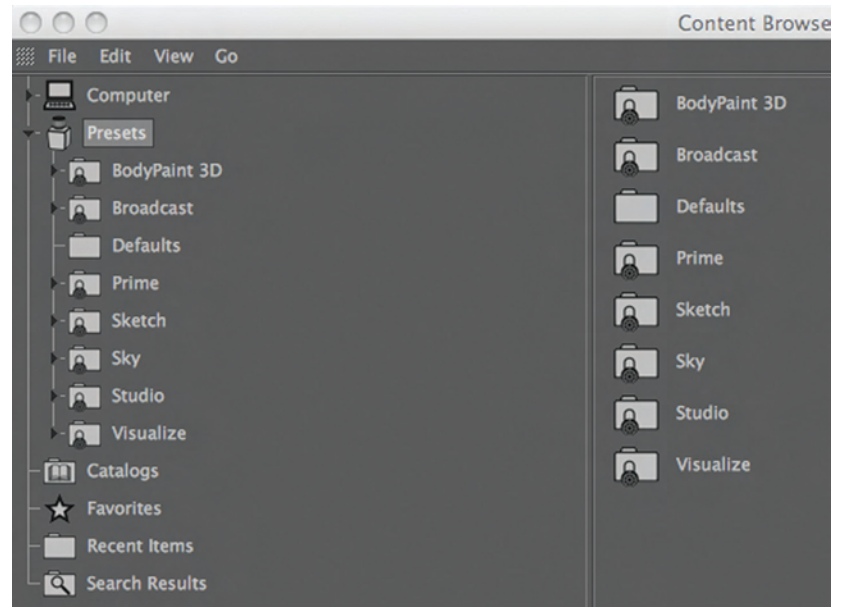
Rendering is the process of taking the 3D environment created in C4D and exporting it to a flat output that can be used as printable stills or sequenced together for animation.





Content Browser

The content browser is a great place to find and store materials, models and other assets that can help streamline your creative process. The Presets listing found within the Content Browser is a treasure chest of models, expressions, materials and scenes that can help you reverse engineer how assets are composed or even help you create your own masterpiece. Assets in the Content Browser will vary depending on the version of CINEMA 4D.





Layer Browser

As with most graphics programs, layers can be an excellent way to organize and arrange elements within a file or scene. In CINEMA 4D, you have a lot of options as to how layers are displayed in the editor and renderer. In this quick exercise, we will look at the basics of using layers within C4D. Open the **Layer_Browser_Start.c4d** file in the DVD_Support_Files folder on the DVD.

Step 1 You can access the Layer Browser in three ways. The first option is to choose Window>Layer Browser. *Figure Layer_Browser_01*

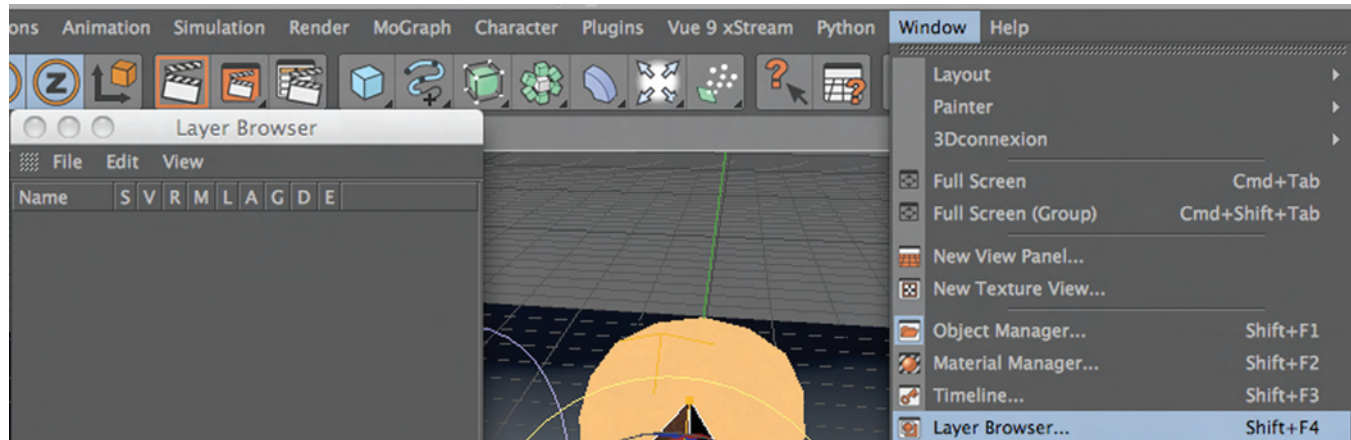


Figure Layer_Browser_01

Step 2 You can also click on the large rounded rectangle to the right of an object in the Objects Manager. Click on the rounded rectangle to the right of the Light at the top and choose, Add to New Layer.

Figure Layer_Browser_02

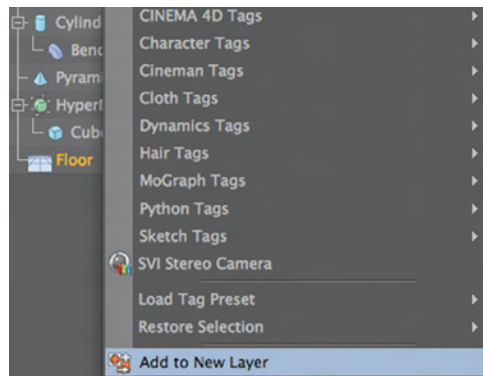
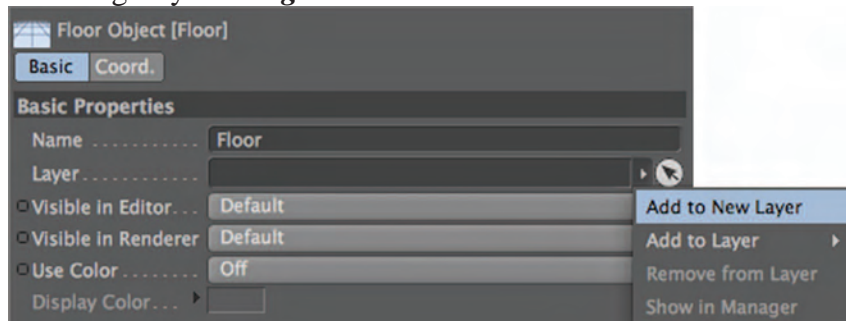


Figure Layer_Browser_02

Step 3 The third option is to click on the drop-down arrow to the right of the Layer field in the Basic tab of the Attributes Manager. Select the Floor object and choose Add to Layer to drop into the existing Layer 1. *Figure Layer_Browser_03*

Figure Layer_Browser_03





Step 4 Now, add both of the lights to this layer by clicking on their Layer buttons.

Figure Layer_Browser_04

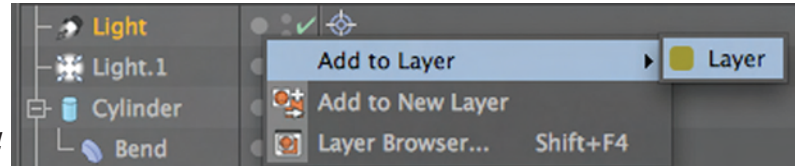


Figure Layer_Browser_04

Step 5 Click on one of the Layer buttons to the right of a parametric object in the scene and create a new layer.

Figure Layer_Browser_05

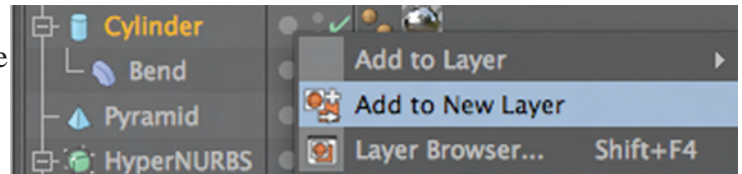


Figure Layer_Browser_05

Step 6 Open the Layer Browser, rename Layer 1, Scene Elements and rename Layer 2, Objects. Click on the S column for the Objects layer and you'll see that all of the objects not on this layer will disappear from both the Viewport and Object Manager. This is called the Solo Column.

Figure Layer_Browser_06

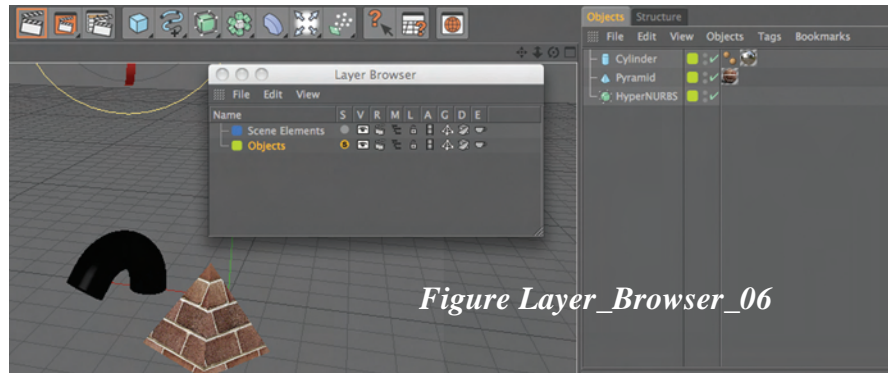
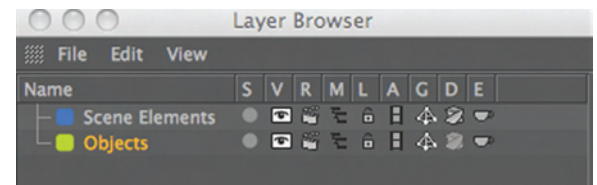


Figure Layer_Browser_06

See the Layer Browser breakdown below

- S** Solo (Hides all other layers)
- V** Visibility (Toggles visibility)
- R** Render (Toggles visibility in rendering)
- M** Managers (Toggles visibility in Managers)
- L** Lock (Lock Toggle)
- A** Animation (Enables/Disables animation)
- G** Generator (Enables/Disables generators*)
- D** Deformer (Enables/Disables deformers)
- E** Expressions (Enables/Disables expressions)

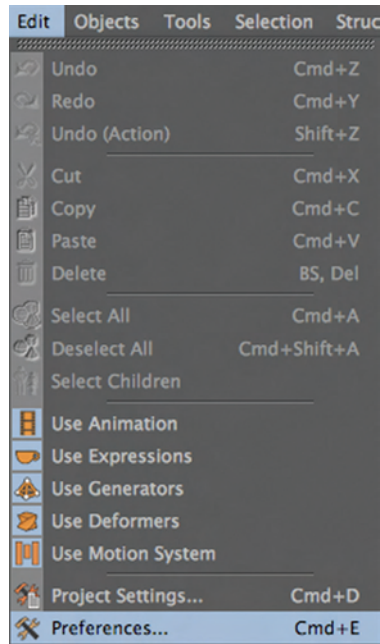
(Arrays, HyperNURBS, Atom Arrays, Booles, etc. are examples of generators*)



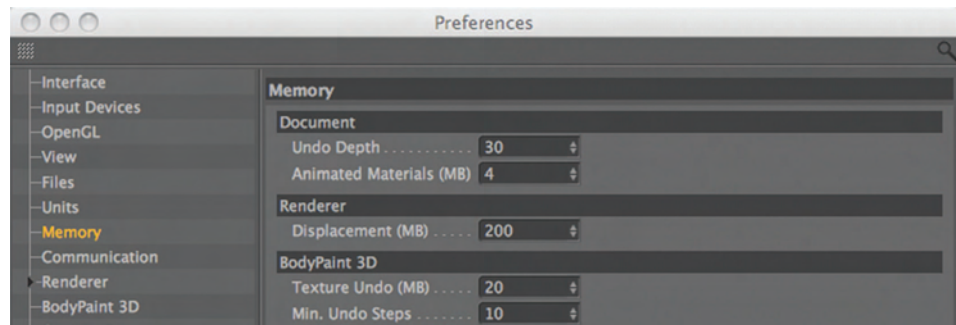


Preferences

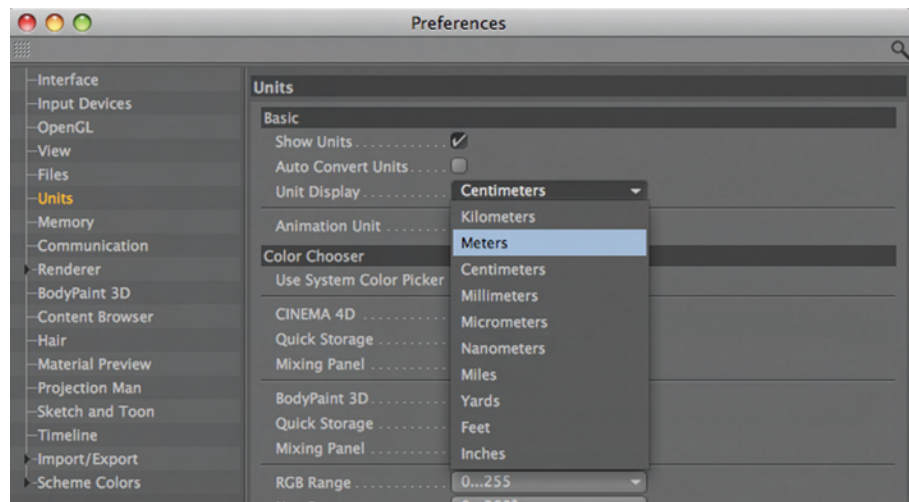
The Preferences within CINEMA 4D are extremely customizable. From the level of Undos and memory allowed, to color scheme and units of measure, the Preferences panel gives you the flexibility to optimize C4D for your workflow.



One of the first things you may be interested in doing is raising the level of Undos. Press **CMD+E** **Ctrl + E** (PC) or go to **Edit>Preferences**. Scroll down to the **Memory** settings and raise the **Document Undo Depth** to a value suitable for the type of scene you are working on. If you are doing heavy modeling, I suggest this number be at least 50 and you may wish to take it up toward 100. Notice that there is a separate Undo for **BodyPaint** textures which is crucial when texture painting. It would probably be sufficient to set this number equal to that of your typical Photoshop Undo level. Again, I recommend this number be set no less than 50.



Another parameter of interest is the **Units** settings. Depending on the project, you may wish to change the unit display to reflect the real world application of your scene. In this book, some of the projects use **Meters** while others use **Centimeters**; in no circumstance is it necessary for you to alter the defaults to match my settings. If you do wish to change the units, simply click on the **Unit Display** dropdown and choose the desired display unit.





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On the DVD

The DVD includes C4D project files for each chapter, completed examples of projects, example files to explore beyond the scope of the text, and rendered movies and stills. There is much more learning to do with hours of additional hands-on instructional resources provided on the DVD including:

- Instructional Quicktime Video Tutorials covering the latest in CINEMA 4D R12. These include: Motor Dynamics, Linear Workflow, Color Profiles, White Balance, Soft and Rigid Body Dynamics and the Camera Deformer.
- Well over one hundred and fifty pages of tutorials in pdf format for printing, or viewing on your computer. Subjects include advanced modeling, texturing, character animation, After Effects integration, RealFlow, ZBrush.
- Background images and texture bitmaps to bolster your texture stock.

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